

# CONTRIBUTING ZONE PLAN

for

## **SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3 WILLIAMSON COUNTY, TEXAS**

Prepared For:

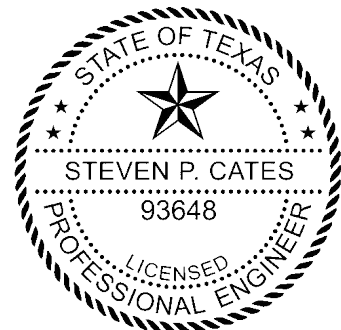
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(512) 532-3355

Prepared By:

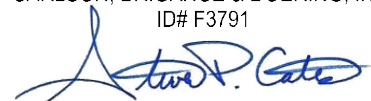
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CBD No. 5413  
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CARLSON, BRIGANCE & DOERING, INC.  
ID# F3791



**12-1-2023**

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# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### 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.

<b>1. Regulated Entity Name:</b> Saddleback at Santa Rita Ranch Phase 1 Section 3					<b>2. Regulated Entity No.:</b>				
<b>3. Customer Name:</b> Pulte Homes of Texas, LP					<b>4. Customer No.:</b> 603410499				
<b>5. Project Type:</b> (Please circle/check one)	<input checked="" type="radio"/> New	<input type="radio"/> Modification			<input type="radio"/> Extension		<input type="radio"/> Exception		
<b>6. Plan Type:</b> (Please circle/check one)	<input type="radio"/> WPAP	<input checked="" type="radio"/> CZP	<input type="radio"/> SCS	<input type="radio"/> UST	<input type="radio"/> AST	<input type="radio"/> EX P	<input type="radio"/> EXT	<input type="radio"/> Technical Clarification	<input type="radio"/> Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	<input checked="" type="radio"/> Residential		<input type="radio"/> Non-residential			<b>8. Site (acres):</b>		37.02	
<b>9. Application Fee:</b>	\$4,000.00		<b>10. Permanent BMP(s):</b>			N/A			
<b>11. SCS (Linear Ft.):</b>	N/A		<b>12. AST/UST (No. Tanks):</b>			N/A			
<b>13. County:</b>	Williamson		<b>14. Watershed:</b>			Sowes Branch / North Fork San Gabriel River			

# 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](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.)	—	—	_x_
Region (1 req.)	—	—	_x_
County(ies)	—	—	_x_
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 _x_ Georgetown ___ Jerrell ___ Leander _x_ 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.

SRFV Development, LLC / Carlson, Brigance, & Doering, Inc.

Print Name of Customer/Authorized Agent



**12-1-2023**

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):

# Contributing Zone Plan Application

## Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), 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 **Contributing Zone Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Steven P. Cates, P.E.

Date: 12/01/2023

Signature of Customer/Agent:



Regulated Entity Name: Saddleback at Santa Rita Ranch Phase 1 Section 3

## Project Information

1. County: Williamson
2. Stream Basin: Sowes Branch / North Fork San Gabriel River
3. Groundwater Conservation District (if applicable): N/A
4. Customer (Applicant):

Contact Person: Stephen Ashlock

Entity: Pulte Homes of Texas, LP

Mailing Address: 9401 Amberglen Blvd., Bldg. I, Suite 150

City, State: Austin, TX

Zip: 78729

Telephone: (512) 532-3355

Fax: \_\_\_\_\_

Email Address: Stephen.Ashlock@PulteGroup.com

5. Agent/Representative (If any):

Contact Person: Steven P. Cates, P.E.

Entity: Carlson, Brigrance & Doering, Inc.

Mailing Address: 5501 West William Cannon

City, State: Austin, TX

Zip: 78749

Telephone: (512) 280-5160

Fax: (512) 280-5165

Email Address: steve@cbdeng.com

6. 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 City of Liberty Hill.
- ☐ The project site is not located within any city's limits or ETJ.

7. ☒ The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

South of Donovan Drive, West of Groveland Drive.

8. ☒ **Attachment A - Road Map.** A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

9. ☒ **Attachment B - USGS Quadrangle Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000") is attached. The map(s) clearly show:

- ☒ Project site boundaries.
- ☒ USGS Quadrangle Name(s).

10. ☒ **Attachment C - Project Narrative.** A detailed narrative description of the proposed project is attached. 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

11. 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/Not cleared)  
☐ Other: \_\_\_\_\_

12. The type of project is:

- ☒ Residential: # of Lots: 154  
☐ Residential: # of Living Unit Equivalents: \_\_\_\_\_  
☐ Commercial  
☐ Industrial  
☐ Other: \_\_\_\_\_

13. Total project area (size of site): 37.02 Acres

Total disturbed area: 35.04 Acres

14. Estimated projected population: 462

15. The amount and type of impervious cover expected after construction is complete is shown below:

**Table 1 - Impervious Cover**

<i><b>Impervious Cover of Proposed Project</b></i>	<i><b>Sq. Ft.</b></i>	<i><b>Sq. Ft./Acre</b></i>	<i><b>Acres</b></i>
Structures/Rooftops	544,936	÷ 43,560 =	12.51
Parking	0	÷ 43,560 =	0
Other paved surfaces	264,845	÷ 43,560 =	6.08
Total Impervious Cover	809,780	÷ 43,560 =	18.59

**Total Impervious Cover  $18.59 \div \text{Total Acreage } 37.02 \times 100 = 50.22\%$  Impervious Cover**

16. ☒ **Attachment D - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.
17. ☒ Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

### ***For Road Projects Only***

***Complete questions 18 - 23 if this application is exclusively for a road project.***

☒ N/A

18. Type of project:

- ☐ TXDOT road project.
- ☐ County road or roads built to county specifications.
- ☐ City thoroughfare or roads to be dedicated to a municipality.
- ☐ Street or road providing access to private driveways.

19. Type of pavement or road surface to be used:

- ☐ Concrete
- ☐ Asphaltic concrete pavement
- ☐ Other: \_\_\_\_\_

20. Right of Way (R.O.W.):

Length of R.O.W.: \_\_\_\_\_ feet.

Width of R.O.W.: \_\_\_\_\_ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

21. Pavement Area:

Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area: \_\_\_\_\_ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

Pavement area \_\_\_\_\_ acres  $\div$  R.O.W. area \_\_\_\_\_ acres  $\times 100 = \text{_____ \%}$  impervious cover.

22. ☐ A rest stop will be included in this project.

☐ A rest stop will not be included in this project.

23. ☐ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

***Stormwater to be generated by the Proposed Project***

24. ☒ **Attachment E - Volume and Character of Stormwater.** A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

***Wastewater to be generated by the Proposed Project***

25. ☐ Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

☒ N/A



one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

- ☐ **Attachment G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are attached.

29. Inside dimensions and capacity of containment structure(s):

**Table 3 - Secondary Containment**

<i>Length (L)(Ft.)</i>	<i>Width(W)(Ft.)</i>	<i>Height (H)(Ft.)</i>	<i>L x W x H = (Ft3)</i>	<i>Gallons</i>

**Total: \_\_\_\_\_ Gallons**

30. Piping:

- ☐ All piping, hoses, and dispensers will be located inside the containment structure.
- ☐ Some of the piping to dispensers or equipment will extend outside the containment structure.
- ☐ The piping will be aboveground
- ☐ The piping will be underground

31. ☐ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: \_\_\_\_\_.

32. ☐ **Attachment H - AST Containment Structure Drawings.** A scaled drawing of the containment structure is attached that shows the following:

- ☐ Interior dimensions (length, width, depth and wall and floor thickness).
- ☐ Internal drainage to a point convenient for the collection of any spillage.
- ☐ Tanks clearly labeled
- ☐ Piping clearly labeled
- ☐ Dispenser clearly labeled

33. ☐ Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

- ☐ In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

26. Wastewater will be disposed of by:

☐ On-Site Sewage Facility (OSSF/Septic Tank):

☐ **Attachment F - Suitability Letter from Authorized Agent.** An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Liberty Hill (name) Treatment Plant. The treatment facility is:

☒ Existing.

☐ Proposed.

☐ N/A

### ***Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons***

***Complete questions 27 - 33 if this project includes the installation of AST(s) with volume(s) greater than or equal to 500 gallons.***

☒ N/A

27. Tanks and substance stored:

**Table 2 - Tanks and Substance Storage**

<b><i>AST Number</i></b>	<b><i>Size (Gallons)</i></b>	<b><i>Substance to be Stored</i></b>	<b><i>Tank Material</i></b>
1			
2			
3			
4			
5			

**Total x 1.5 = \_\_\_\_\_ Gallons**

28. ☐ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than

5 of 11

- ☐ In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

## **Site Plan Requirements**

**Items 34 - 46 must be included on the Site Plan.**

34. ☒ The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 40'.
35. 100-year floodplain boundaries:
- ☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- ☒ No part of the project site is located within the 100-year floodplain.  
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA- FIRM Panel #48491C0275E; Effective Date: September 26, 2008.
36. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- ☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37. ☒ A drainage plan showing all paths of drainage from the site to surface streams.
38. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.
39. ☒ Areas of soil disturbance and areas which will not be disturbed.
40. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
41. ☒ Locations where soil stabilization practices are expected to occur.
42. ☐ Surface waters (including wetlands).  
☒ N/A
43. ☐ Locations where stormwater discharges to surface water.  
☒ There will be no discharges to surface water.
44. ☐ Temporary aboveground storage tank facilities.  
☒ Temporary aboveground storage tank facilities will not be located on this site.

45. ☐ Permanent aboveground storage tank facilities.  
☒ Permanent aboveground storage tank facilities will not be located on this site.
46. ☒ Legal boundaries of the site are shown.

### ***Permanent Best Management Practices (BMPs)***

***Practices and measures that will be used during and after construction is completed.***

47. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.  
☐ N/A
48. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.  
☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.  
☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: \_\_\_\_\_.  
☐ N/A
49. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. 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 appropriate regional office within 30 days of site completion.  
☐ N/A
50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.  
☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.  
☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.  
☒ The site will not be used for low density single-family residential development.

51. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

- ☐ **Attachment I - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- ☒ The site will not be used for multi-family residential developments, schools, or small business sites.

52. ☒ **Attachment J - BMPs for Upgradient Stormwater.**

- ☒ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- ☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- ☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53. ☒ **Attachment K - BMPs for On-site Stormwater.**

- ☒ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- ☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

54. ☒ **Attachment L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

☐ N/A

55. ☒ **Attachment M - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are

attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

☐ N/A

56. ☒ **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan.** A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

- ☒ Prepared and certified by the engineer designing the permanent BMPs and measures
- ☒ Signed by the owner or responsible party
- ☒ Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
- ☒ Contains a discussion of record keeping procedures

☐ N/A

57. ☐ **Attachment O - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

☒ N/A

58. ☒ **Attachment P - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.

☐ N/A

***Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.***

59. ☒ The applicant is 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. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
60. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

### ***Administrative Information***

- 61. ☒ 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.
- 62. ☒ Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.
- 63. ☒ The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.
- ☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.

*Contributing Zone Plan Application*

**ATTACHMENT A**

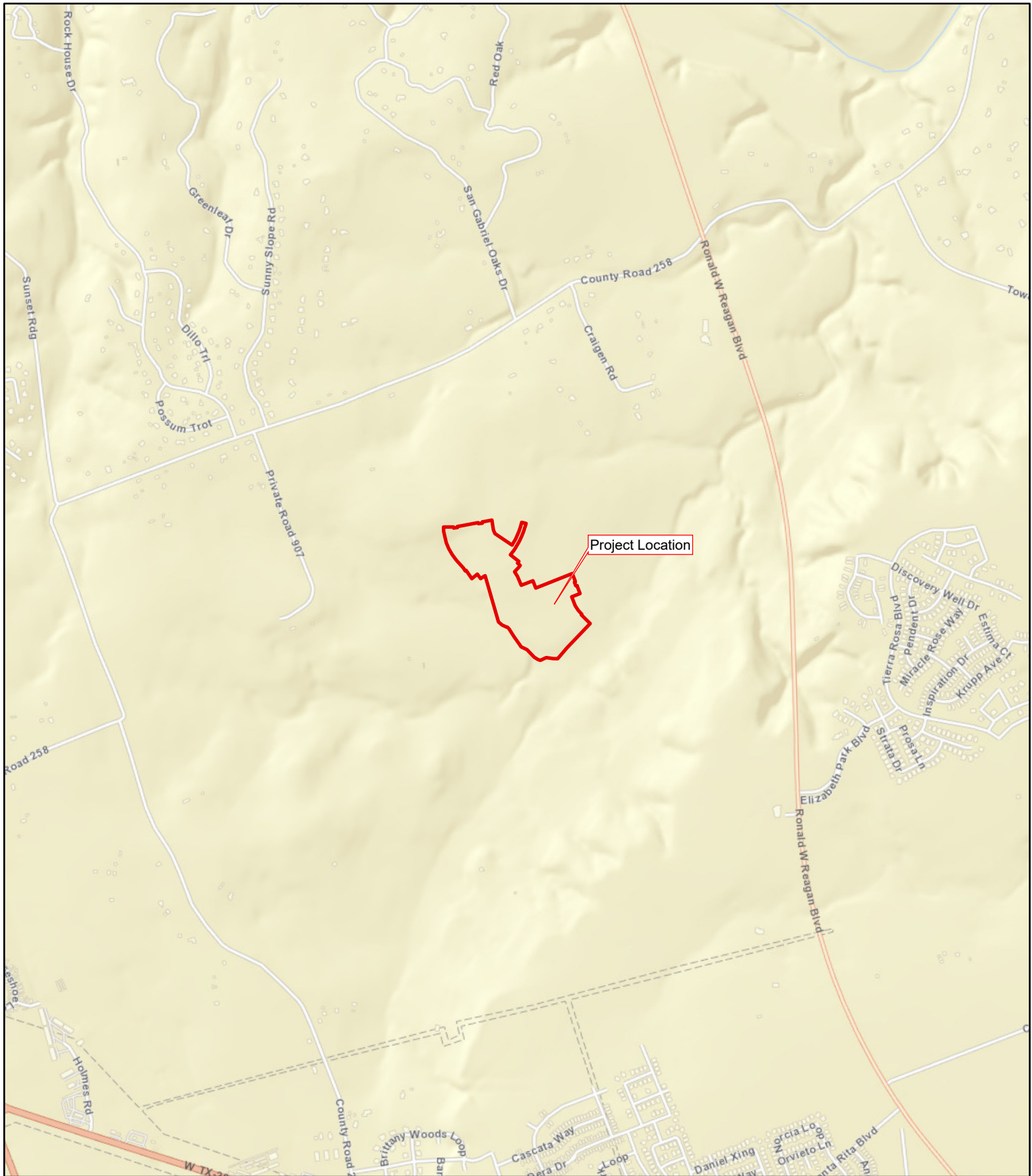
**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**ROAD MAP**





**Santa Rita Ranch**  
Water Pollution Abatement Plan Map  
Leander NE Quadrant



0 1,000 2,000 4,000  
Feet



Carlson, Brigrance & Doering, Inc.  
Civil Engineering ♦ Surveying

*Contributing Zone Plan Application*

**ATTACHMENT B**

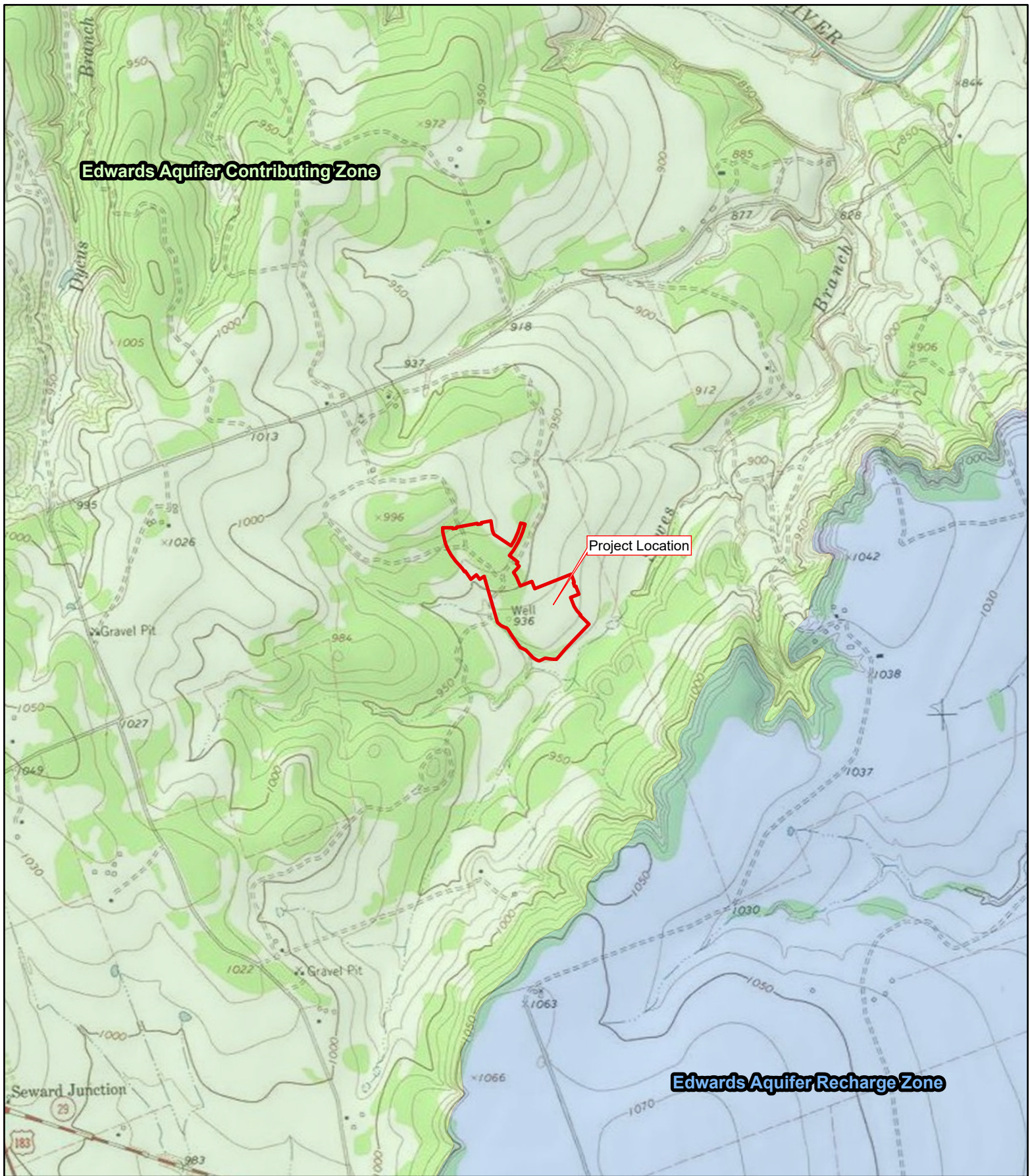
**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**USGS QUADRANGLE MAP**





**Santa Rita Ranch**  
Water Pollution Abatement Plan Map  
Leander NE Quadrant



0 1,000 2,000 4,000  
Feet



Carlson, Brigrance & Doering, Inc.  
Civil Engineering ♦ Surveying

*Contributing Zone Plan Application*

**ATTACHMENT C**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Project Narrative:**

Saddleback at Santa Rita Ranch Phase 1 Section 3 is a 37.02-acre residential development that is composed of 154 single-family lots. The project is located on the west side of Ronald Reagan Boulevard, approximately 3 miles north of State Highway 29. The project is located within the City of Liberty Hill ETJ, in Williamson County, Texas. This project includes 6,301 linear feet of roadway, 5,964 linear feet of water main line, and 5,526 linear feet of 8" SDR 26 PVC ASTM D3034 wastewater main line.

The proposed wastewater line will flow into an existing SCS gravity system to the approved Lift Station 2A and then the Liberty Hill Wastewater Treatment Plant.

The site may have soil imported. The fill material shall consist of crushed limestone, select fill, and topsoil. The fill material will be used to facilitate drainage, roadway construction, revegetation of the property, and to elevate the building foundations.

This project is located within the Edwards Aquifer Contributing Zone. Flows were calculated using the National Resource Conservation hydrologic method. Water quality will be provided by one proposed and one existing batch detention ponds.

Within the 37.02-acre improvement area, approximately 18.59 acres of impervious cover will be installed (50.22% of total project site). Batch detention ponds have been designed in accordance with the January 20, 2017 Addendum Sheet to RG-348 which establishes Batch Detention Basins in Section 3.2.17. They have been sized to treat and detain for this and future sections.

*Contributing Zone Plan Application*

**ATTACHMENT D**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Factors Affecting Surface Water Quality:**

**During Construction**

The following non-stormwater discharges may occur from the site during the construction period:

- Utility water line flushing during the initial line testing must use uncontaminated water that is not hyperchlorinated.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred)
- Groundwater (from dewatering of excavation) must be uncontaminated.
- Water used to wash vehicles or control dust must be accomplished using potable water without detergents.

All non-stormwater discharge will be directed to the temporary Erosion and Sedimentation Controls (Best Management Practices) to remove any suspended solids contained therein. Stormwater during construction will remove loose material and transport it downstream.

**Post Construction**

The following non-stormwater discharges may occur from the site after construction has been completed:

- Fertilizers and pesticides
- Household chemicals
- Pet Waste
- Used oil
- Car washing
- Mulching
- Sediment

Post-construction stormwater discharges typically transport sediment in the form of dirt and dust accumulated on the streets and other impervious flatwork, rooftops, and sediment from erosion of grassy areas. That material will be transported through the storm sewer system to the wet basins, where most of the pollutants will be removed.

*Contributing Zone Plan Application*

**ATTACHMENT E**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Volume and Character of Stormwater:**

Existing and developed hydrology models were created in HEC-HMS, v.4.8. A 24-hour frequency storm was applied to the meteorological models for the 2, 10, 25, and 100-year storm events. The model was run over a 24-hour period with a computational time interval of 1 minute. Subbasins utilized an SCS Curve Number Loss Method and SCS Unit Hydrograph Transform Method. Reaches utilized either a Muskingum-Cunge or Lag Routing Method. See below for specific model input data.

Meteorological Model

Frequency storms with the following parameters were used to model storm events:

**HEC-HMS Meteorological Model Parameters**

<b>Probability</b>	2-yr = 50%, 10-yr = 10%, 25-100-yr = Other
<b>Input Type</b>	Partial Duration
<b>Output Type</b>	Annual Duration (only applicable for 2-10-yr)
<b>Intensity Duration</b>	5 Minutes
<b>Storm Duration</b>	1 Day
<b>Intensity Position</b>	50%
<b>Storm Area</b>	(Blank if less than 10 mi <sup>2</sup> )
<b>Curve</b>	Uniform for all subbasins

Partial-duration precipitation depths are per the Depth-Duration-Frequency Estimates for the San Gabriel River Zone in Williamson County, Texas, according to NOAA Atlas 14, Volume 11, Version 2. See the table below:

**Precipitation Depths (in) per Recurrence Interval**

<b>Duration</b>	<b>2-YR</b>	<b>10-YR</b>	<b>25-YR</b>	<b>100-YR</b>
<b>5-min</b>	0.51	0.757	0.921	1.19
<b>15-min</b>	1.02	1.51	1.84	2.37
<b>60-min</b>	1.88	2.79	3.4	4.39
<b>2-hr</b>	2.3	3.55	4.43	5.98
<b>3-hr</b>	2.55	4.02	5.09	7.06
<b>6-hr</b>	2.98	4.81	6.18	8.75
<b>12-hr</b>	3.44	5.54	7.12	10.1
<b>24-hr</b>	3.94	6.3	8.04	11.2

Land Use & Curve Numbers

In existing conditions, the soils are primarily hydrologic soil group D, as per the USDA Web Soil Survey. The soils map and data have been included in Appendix B. The curve numbers were selected from Urban



Hydrology for Small Watersheds<sup>1</sup> based on hydrologic soil groups and aerial maps. See table below. Curve numbers were assessed independently from impervious cover.

#### Runoff Curve Numbers

Cover Type	Hydrologic Condition	Hydrologic Soil Group	Curve Number
Pasture	Good	D	80
Woods-grass combination	Good	D	79
Meadow	Good	D	78

Existing impervious cover was determined from aerial imagery. Proposed impervious cover was estimated from the proposed and anticipated future layout using TCEQ assumptions for residential tracts. Impervious cover was calculated as a percent of the total drainage basin. Curve number and impervious cover percents were loss inputs for subbasins in the model.

#### Time of Concentration

All time of concentration calculations were generated using SCS methodology provided in Urban Hydrology for Small Watersheds<sup>2</sup> for sheet, shallow concentrated, and channel flow. A maximum of 100 feet was used for sheet flow calculations. Lag times were calculated as 60 percent of the time of concentration. Lag times were transform inputs for subbasins and reaches in the model. Times of concentration for future developed drainage areas were approximated based on assumed basin size.

#### Reaches

Reaches representing the Middle Fork San Gabriel River were modeled using the Muskingum-Cunge routing method with 8-point cross-sections. In developed conditions, reaches contributing to the Middle Fork were modeled with the Lag method.

#### Reservoirs

All reservoirs were modeled using outflow structures with an elevation-storage method. Initial conditions were elevations set to the bottom of pond elevation for batch detention facilities. The model assumed no tailwater condition. Future batch detention ponds were modeled with a generic stage-storage and outflow spillways assigned to the assumed water quality volume elevation.

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<sup>1</sup> Natural Resources Conservation Service, Conservation Engineering Division. 1986. Urban Hydrology for Small Watersheds. Technical Release 55. U.S. Department of Agriculture.  
[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1044171.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf)

<sup>2</sup> Ibid.

*Contributing Zone Plan Application*

**ATTACHMENT J**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Best Management Practices for Upgradient Stormwater:**

Upgradient stormwater will travel overland to the curb and gutter and captured by the curb inlets to be conveyed to existing Batch Detention Pond S3 and proposed Batch Detention Pond S4.



*Contributing Zone Plan Application*

**ATTACHMENT K**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Best Management Practices for On-site Stormwater:**

Stormwater runoff from this section will sheet flow across lawns, be captured in gutters and curb inlets, and piped into existing Batch Detention Pond S3 and proposed Batch Detention Pond S4. The water quality volume provided in these ponds is sufficient to accommodate TSS removal for this and future sections.

TCEQ project and drainage area maps are provided in the included construction plans. TCEQ TSS removal calculations are provided in Appendix A of this application.

*Contributing Zone Plan Application*

**ATTACHMENT L**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Best Management Practices for Surface Streams Contamination:**

Stormwater runoff in this section will sheet flow across lawns, be captured in gutters and curb inlets, and piped into proposed batch detention ponds as shown on the Overall Drainage Area Plan. Drainage areas G and H will flow to Pond S3. Drainage areas A through F will flow to Pond S4.

The existing and proposed batch detention ponds discharge through rock rip-rap and rock berms which deters heavy floods from entering streams and aids in sediment collection. The remaining site stormwater runoff will sheet flow across the lots and discharge directly into Soves Branch which feeds the North Fork of the San Gabriel River.

No stormwater from the improved area will drain to sensitive geological features.

*Contributing Zone Plan Application*

**ATTACHMENT M**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Construction Plans:**

Construction Plans for the erosion and sedimentation control measures proposed with this development are included at the end of this report.

*Contributing Zone Plan Application*

**ATTACHMENT N**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Inspection, Maintenance, Repair and Retrofit Plan:**

**Maintenance Guidelines for Batch Detention Basins**

Batch detention basins may have somewhat higher maintenance requirements than an extended detention basin since they are active stormwater controls. The maintenance activities are identical to those of extended detention basins with the addition of maintenance and inspections of the automatic controller and the valve at the outlet.

- ***Inspections.*** Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.
- ***Mowing.*** The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.
- ***Litter and Debris Removal.*** Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed.
- ***Erosion control.*** The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.
- ***Nuisance Control.*** Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

- **Structural Repairs and Replacement.** With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.
- **Sediment Removal.** A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.
- **Logic Controller.** The Logic Controller should be inspected as part of the twice yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset.

Ultimately, these facilities will be owned, operated and maintained by the proposed Williamson County MUD No. 19C. Until the ownership of facilities is transferred to the MUD, SRFV Development, LLC. will be responsible for maintenance of these facilities in accordance with the above stated requirements.

Acknowledged by:

  
 Stephen Ashlock  
 Pulte Homes of Texas, LP.

#### BMP DESIGN FIRM INFORMATION

Carlson, Brigance & Doering, Inc.  
 Mr. Steven P. Cates, P.E.  
 Phone: (512) 280-5160  
 5501 West William Cannon  
 Austin, TX 78749

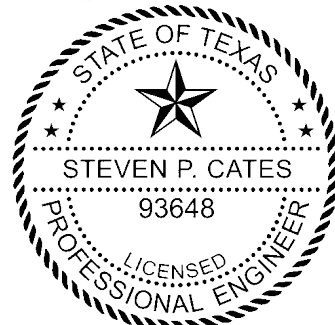
The above Inspection, Maintenance, Repair, and Retrofit Plan has been prepared by the undersigned Engineer, and I hereby certify that the above Plan conforms with the minimum requirements of the TCEQ Technical Guidance on Best Management Practices, RG-348.



Steven P. Cates, P.E.

**12-1-2023**

Date



CARLSON, BRIGANCE & DOERING, INC.  
 ID# F3791

*Contributing Zone Plan Application*

**ATTACHMENT P**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Measures for Minimizing Surface Stream Contamination:**

The development minimizes surface stream contamination by maintaining the naturally occurring sheet flow across the lots. Drainage from this development will be directed towards proposed batch ponds which will treat the stormwater and reduce the developed flow rate to pre-developed conditions. There are no surface streams within this site. Soves Branch abuts the southern project boundary.



# 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: Steven P. Cates, P.E.

Date: 12/01/2023

Signature of Customer/Agent:



Regulated Entity Name: Saddleback at Santa Rita Ranch Phase 1 Section 3

## 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: \_\_\_\_\_

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: Sowes Branch / North Fork of the San Gabriel River

### ***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.

*Temporary Stormwater Section*

**ATTACHMENT A**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Spill Response Actions:**












1. Contain the spill.
2. Immediately stake off area.
3. Notify Hazardous Material team (if necessary); notify TCEQ: (512) 339-2929 or Emergency # 1-800-832-8224
4. Take necessary steps to clean up, i.e. notify remediation contractor if large spill, or small spills will be cleaned by the construction contractor.

All site personnel will be made aware of the manufactures' recommended methods for spill cleanup, and the location of the information and cleanup supplies.

Spills will be reported according to the Reportable Quantity, attached on the following page.

Materials and equipment necessary for spill cleanup will be kept onsite in an accessible location known to site personnel.

All Spills will be cleaned up immediately upon discovery. Any spill of hydrocarbons or hazardous substances greater than 25 gallons will require notification to the fire Department Hazardous Materials Team and TCEQ. As with all spills, an effort shall be made to prevent material from entering surface streams and storm drains by using rock or earth berms to contain the material.

Kind of spill	Where discharged	Reportable quantity	Rule, statute, or responsible agency
Hazardous substance	onto land	“Final RQ” in Table 302.4 in <a href="#">40 CFR 302.4</a> (PDF) 	<a href="#">30 TAC 327</a> 
	into water	“Final RQ” or 100 lbs, whichever is <b>less</b>	
Any oil	coastal waters	as required by the Texas General Land Office	<a href="#">Texas General Land Office</a> 
Crude oil, oil that is neither a petroleum product nor used oil	onto land	210 gallons (five barrels)	<a href="#">30 TAC 327</a> 
	directly into water	enough to create a sheen	
Petroleum product, used oil	onto land, from an exempt PST facility	210 gallons (five barrels)	<a href="#">30 TAC 327</a> 
	onto land, or onto land from a non-exempt PST facility	25 gallons	
	directly into water	enough to create a sheen	
Associated with the exploration, development and production of oil, gas, or geothermal resources	under the jurisdiction of the Railroad Commission of Texas	as required by the Railroad Commission of Texas	<a href="#">Railroad Commission of Texas</a> 
Industrial solid waste or other substances	into water	100 lbs	<a href="#">30 TAC 327</a> 
From petroleum storage tanks, underground or aboveground	into water	enough to create a sheen on water	<a href="#">30 TAC 334.75-81</a> 
From petroleum storage tanks, underground or aboveground	onto land	25 gallons or equal to the RQ under <a href="#">40 CFR 302</a> 	<a href="#">30 TAC 327</a> 
Other substances that may be useful or valuable and are not ordinarily considered to be waste, but will cause pollution if discharged into water in the state	into water	100 lbs	<a href="#">30 TAC 327</a> 

#### **1.4.16 Spill Prevention and Control**

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

##### ***Education***

- (1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.
- (2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- (3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- (4) Establish a continuing education program to indoctrinate new employees.
- (5) Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

##### ***General Measures***

- (1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- (2) Store hazardous materials and wastes in covered containers and protect from vandalism.
- (3) Place a stockpile of spill cleanup materials where it will be readily accessible.
- (4) Train employees in spill prevention and cleanup.
- (5) Designate responsible individuals to oversee and enforce control measures.
- (6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn’t compromise clean up activities.
- (7) Do not bury or wash spills with water.
- (8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- (9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
- (10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- (11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- (12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

##### ***Cleanup***

- (1) Clean up leaks and spills immediately.
- (2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- (3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

### **Minor Spills**

- (1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- (2) Use absorbent materials on small spills rather than hosing down or burying the spill.
- (3) Absorbent materials should be promptly removed and disposed of properly.
- (4) Follow the practice below for a minor spill:
- (5) Contain the spread of the spill.
- (6) Recover spilled materials.
- (7) Clean the contaminated area and properly dispose of contaminated materials.

### **Semi-Significant Spills**

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

- (1) Contain spread of the spill.
- (2) Notify the project foreman immediately
- (3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- (4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- (5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

### **Significant/Hazardous Spills**

For significant or hazardous spills that are in reportable quantities:

- (1) 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.
- (2) 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.
- (3) Notification should first be made by telephone and followed up with a written report.
- (4) 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.
- (5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at:  
<https://www.tceq.texas.gov/response/spills>

***Vehicle and Equipment Maintenance***

- (1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- (2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- (3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- (4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- (5) Place drip pans or absorbent materials under paving equipment when not in use.
- (6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- (7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- (8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- (9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

***Vehicle and Equipment Fueling***

- (1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- (2) Discourage "topping off" of fuel tanks.
- (3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.



*Temporary Stormwater Section*

**ATTACHMENT B**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Potential Sources of Contamination:**

Gasoline, Diesel, and Hydraulic Fluid from construction equipment,  
Asphalt products,  
Construction Materials,  
Trash and Debris,  
Paint,  
Concrete,  
Gypsum from sheet rock,  
Sediment.

All materials shall be hauled in a manner consistent with the manufacturer's recommendations. Disposal of waste material shall be in conformance with all state and local laws

*Temporary Stormwater Section*

**ATTACHMENT C**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Sequence of Major Activities:**

1. Install and maintain Erosion Control and Tree Protection per the Approved Plans and specifications prior to any clearing and grubbing, grading, excavating, etc... Notify Construction Inspection Division when installed.
2. Prior to beginning construction, the owner or his representative shall hold a Pre-Construction Conference between TCEQ, Williamson County, Contractor, and any other affected parties. Notify TCEQ at least 48 hours prior to the time of the conference and 48 hours prior to beginning construction. Prior to Pre-Construction Conference.
3. Hold Pre-Construction Conference with contractor, TCEQ, EV Inspector, Engineer, and owner or his representative.
4. Rough grade roadway.  
(Estimate of disturbed area = 4.92 ac)
5. Begin installation of storm sewer. Upon completion, restore as much disturbed areas as possible, particularly channels and large open areas. (Estimate of disturbed area = 0.00 ac)
6. Regrade streets to subgrade (Estimate of disturbed area = 4.92 ac)
7. Ensure that all underground utility crossings are completed. Lay first course base material on all streets. (4.92 ac)
8. Install curb and gutter. (Estimate of disturbed area = 0.58 ac)
9. Place concrete for common area 4' sidewalk. (Estimate of disturbed area = 1.16 ac)
10. Lay final base course on all streets. (4.92 ac)

11. Lot grading. (Estimate of disturbed area = 26.83 ac)
12. Lay asphalt. (4.34 ac)
13. Clean site and revegetate all disturbed area according to the plans and specifications.  
Stabilization measures should include seeding and/or mulching.
14. Complete permanent erosion control and restoration of site vegetation.
15. Project Engineer to provide a written concurrence letter, and scheduling final inspection with EV Inspector, prior to the removal of erosion controls.
16. Remove and dispose of temporary erosion/sedimentation control measures.
17. Complete any necessary final dress up of areas disturbed by Item 16.
18. Conduct a final inspection and complete all punch list items.

Clearing and grubbing under a development permit, solely for the purpose of surveying and soil exploration, shall be a hand-cutting or blade-up operation.

*Temporary Stormwater Section*

**ATTACHMENT D**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Temporary Best Management Practices and Measures:**

Install temporary erosion control measures, stabilized construction entrance, concrete washout area, inlet protection, and tree protection according to the plans and specifications prior to any clearing and grubbing, grading, excavating, etc. Upgradient stormwaters during construction crossing disturbed areas will be filtered utilizing standard Best Management Practices, such as erosion logs and silt fences, prior to leaving the site. The silt fences will be placed along down gradient areas of the site to prevent any sediment from entering storm sewers or surface streams.

Geological features on this site are located outside of the Limits of Construction and no stormwater from the disturbed areas will drain to the geological features.

*Temporary Stormwater Section*

**ATTACHMENT F**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Structural Practices:**

There are areas 10 acres or greater being disturbed at one time; therefore, a temporary sediment basin will be provided. Additional temporary erosion and sedimentation control will be done by silt fence and rock berms.

*Temporary Stormwater Section*

**ATTACHMENT G**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Drainage Area Map:**

An overall drainage area map is included within the plan set submitted with this application.

*Temporary Stormwater Section*

**ATTACHMENT I**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Inspection and Maintenance for Best Management Practices:**

The Best Management Practices installed during construction will be maintained in accordance with the requirements of the EPA's NPDES/TPDES storm water pollution prevention program (SWPPP). The following maintenance procedures shall be followed until permanent stabilization is complete.

**Silt Fence**

- a. Inspect weekly or after each rainfall event and repair or replacement shall be made promptly as needed.
- b. Silt Fence shall be removed when the site is completely stabilized so as to not block or impede storm flow or drainage.
- c. Accumulated silt shall be removed when it reaches a depth of 6 inches. The Silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.

**Fiber Rolls**

- a. Inspect prior to forecast rain, daily during extended rain events, after rain events, and weekly.
- b. Repair or replace split, torn, unraveling, or slumping fiber rolls.
- c. If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates behind the roll shall be periodically removed in order to maintain its effectiveness. Sediment shall be removed when the accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.

**Stabilized Construction Entrance**

- a. The entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto a public roadway. This may require periodic top dressing with additional stone as conditions demand, as well as repair and clean out of any devices used to trap sediment.
- b. Entrance must be properly graded to incorporate a drain swale or similar measure to prevent runoff from leaving the construction site.

#### Inlet Protection

- a. Inspection shall be made weekly or after each rainfall event and replacement or repair shall be made promptly as needed.
- b. Accumulated silt shall be removed when it reaches a depth of 6 inches. The Silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation
- c. The dyke shall be removed when the site is completely stabilized so as to not block or impede storm flow or drainage.

#### Temporary Sediment Basins

- a. Inspection shall be made weekly or after each rainfall event. Check the embankment spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed.
- b. Trash and other debris should be removed after each rainfall event to prevent clogging of the outlet structure.
- c. Accumulated silt should be removed and the basin should be regraded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its storage capacity.
- d. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

#### Concrete Washout

- a. Inspection shall be made daily or after each rainfall event to check for leaks, identify any plastic linings and sidewalls which have been damaged by construction activities.
- b. When the washout container is filled over 75 % of its capacity, the washwater should be vacuumed off or allowed to evaporate to avoid overflows. When the remaining cementitious solids have hardened, they should be removed and recycled.
- c. Damages to the container should be repaired promptly and as needed.
- d. Before heavy rains, the washout containers liquid level should be lowered or the container should be covered to avoid an overflow during the rain event.

The owner shall hire an E&S compliance company to inspect E&S measures and keep reports of onsite inspections with deficiencies and solutions.



*Temporary Stormwater Section*

**ATTACHMENT J**

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

**Schedule of Interim and Permanent Soil Stabilization Practices:**

Soil Stabilization for all disturbed areas shall be accomplished by hydraulic planting. Following is an outline to accomplish the required stabilization.

1. **Preparing Seed Bed.** After the designated areas have been rough graded to the lines, grades and typical sections indicated in the Drawings or as provided for in other items of this contract and for any other soil area disturbed by the construction, a suitable seedbed shall be prepared. The seedbed shall consist of a minimum of either 4 inches (100 millimeters) of approved topsoil or 4 inches (100 millimeters) of approved salvaged topsoil, cultivated and rolled sufficiently to enhance the soil to a state of good health, when the soil particles on the surface are small enough and lie closely enough together to prevent the seed from being covered too deeply for optimum germination. The optimum depth for seeding shall be 1 1/4 inch (6 millimeters). Water shall be gently applied as required to prepare the seedbed prior to the planting operation either by broadcast seeding or hydraulic planting. Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days. Seeding shall be performed in accordance with the requirements hereinafter described.
2. **Watering.** All watering shall comply with Chisholm Trail Subdivision Rules and Regulations. Broadcast seeded areas shall immediately be watered with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed and in the manner and quantity as directed by the Engineer or designated representative. Hydraulic seeded areas and native grass seeded areas shall be watered commencing after the tackifier has dried with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed to keep the seedbed in a wet condition favorable for the growth of grass. Watering applications shall constantly maintain the seedbed in a wet condition favorable for the growth of grass. Watering shall continue until the grass is uniformly 1 1/2 inches (40 mm) in height and accepted by the Engineer or designated representative. Watering can be postponed immediately after a 1/2 inch (12.5 mm) or greater rainfall on the site but shall be resumed before the soil dries out.
3. **Hydraulic Planting.** The seedbed shall be prepared as specified above and hydraulic planting equipment, which is capable of placing all materials in a single operation, shall be used.

March 1 to September 15

Hydraulic planting mixture and minimum rate of application pounds per 1000 square feet (kilograms per 100 square meters):

Planting Mixture			
Hulled Bermuda Seed (PLS=0.83)	Fiber Mulch		Soil Tackifier
	Cellulose	Wood	
1 lbs/1000 ft2 (0.5 kgs/100 m2)	45.9 Lbs/1000 ft2 (22.5 kgs/100m2)		1.4 lbs/1000 ft2 (0.7 kgs/100 m2)
		57.4 lbs/1000 ft2 (28.01 kgs/100 m2)	1.5 lbs/1000 ft2 (0.75 kgs/100 m2)

September 15 to March 1

Add 1.5 pounds per 1000 square feet (0.75 kgs/ 100 m@) of cool season cover crop (see table 1) to above mixture. The fertilizer shall conform to City of Austin Standard Specification Item No. 606S, "Fertilizer".

Table 1 : Cool Season Cover Crop			
Common Name	Botanical Name	Application rates	
		Lbs/1000 feet <sup>2</sup>	Kg/ 100 meter <sup>2</sup>
Wheat	Triticum aestivum	0.5	0.25
Oats	Avena sativa	0.5	0.25
Cereal Rye Grain	Secale cereal	0.5	0.25
Total Cool Season Cover Crop Seeding Rate		1.5	0.75
Total Cool Season Seeding Rate (Grass Wildflowers, & Cover Crop)		4.5	2.25

*Appendix A*

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

*BMP TSS Removal Worksheet*

*Saddleback Phase 1 Section 3*

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:

$L_M$  TOTAL PROJECT = Required TSS removal resulting from the proposed development = 80% of increased load

$A_N$  = Net increase in impervious area for the project

$P$  = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County = **Williamson**

\* The values entered in these fields should be for the total project area.

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3**

Total project area included in plan *	<b>37.02</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>18.59</b>	acres
Total post-development impervious cover fraction *	<b>0.50</b>	
$P$	<b>32</b>	inches
$L_M$ TOTAL PROJECT =	<b>16181</b>	lbs.

**EXISTING BATCH DETENTION POND S3**

**SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 1 (EXISTING)**

Total project area included in plan *	<b>25.97</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>10.29</b>	acres
Total post-development impervious cover fraction *	<b>0.40</b>	
$P$	<b>32</b>	inches
$L_M$ TOTAL PROJECT =	<b>8956</b>	lbs.

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 2**

Total project area included in plan *	<b>47.12</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>23.85</b>	acres
Total post-development impervious cover fraction *	<b>0.51</b>	
$P$	<b>32</b>	inches
$L_M$ TOTAL PROJECT =	<b>20759</b>	lbs.

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3**

Total project area included in plan *	<b>5.93</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>4.11</b>	acres
Total post-development impervious cover fraction *	<b>0.69</b>	
$P$	<b>32</b>	inches
$L_M$ TOTAL PROJECT =	<b>3577</b>	lbs.

**SADDLEBACK (FUTURE)**

Total project area included in plan *	<b>8.85</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>2.96</b>	acres
Total post-development impervious cover fraction *	<b>0.33</b>	
$P$	<b>32</b>	inches
$L_M$ TOTAL PROJECT =	<b>2576</b>	lbs.
$L_M$ TOTAL =	<b>35869</b>	lbs.

**PROPOSED BATCH DETENTION POND S4**

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 2**

Total project area included in plan *	<b>0.67</b>	acres
Predevelopment impervious area within the limits of the plan *	<b>0.00</b>	acres
Total post-development impervious area within the limits of the plan *	<b>0.33</b>	acres

Total post-development impervious cover fraction *	=	0.49	
P =		32	inches
L-M TOTAL PROJECT =		287	lbs.

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3**

Total project area included in plan *	=	29.96	acres
Predevelopment impervious area within the limits of the plan *	=	0.00	acres
Total post-development impervious area within the limits of the plan *	=	14.74	acres
Total post-development impervious cover fraction *	=	0.49	
P =		32	inches
L-M TOTAL PROJECT =		12830	lbs.

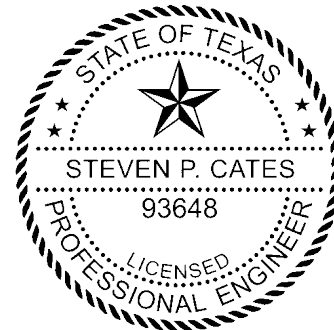
**SADDLEBACK AT SANTA RITA RANCH PHASE 2, SECTION 1**

Total project area included in plan *	=	6.08	acres
Predevelopment impervious area within the limits of the plan *	=	0.00	acres
Total post-development impervious area within the limits of the plan *	=	3.51	acres
Total post-development impervious cover fraction *	=	0.58	
P =		32	inches
L-M TOTAL PROJECT =		3055	lbs.

**SADDLEBACK AT SANTA RITA RANCH PHASE 2, SECTION 3**

Total project area included in plan *	=	1.67	acres
Predevelopment impervious area within the limits of the plan *	=	0.00	acres
Total post-development impervious area within the limits of the plan *	=	0.78	acres
Total post-development impervious cover fraction *	=	0.47	
P =		32	inches
L-M TOTAL PROJECT =		679	lbs.

L-M TOTAL = 16851 lbs.



CARLSON, BRIGANCE & DOERING, INC.  
ID# F3791

A handwritten signature in blue ink that reads "Steven P. Cates".

**12-1-2023**

*Appendix A*

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

*BMP TSS Removal Worksheet*

*Drainage Basins S3 & S4*

*(OVERALL)*

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Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:

 $L_M$  TOTAL PROJECT = Required TSS removal resulting from the proposed development = 80% of increased load $A_N$  = Net increase in impervious area for the project $P$  = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County = **Williamson**

Total project area included in plan = **87.87** acres

Predevelopment impervious area within the limits of the plan = **0.00** acres

Total post-development impervious area within the limits of the plan = **41.21** acres

Total post-development impervious cover fraction = **0.47**

$P$  = **32** inches

 $L_M$  TOTAL PROJECT = **35869** lbs.

\* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **1****2. Drainage Basin Parameters (This information should be provided for each basin):**Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area = **83.96** acres

Predevelopment impervious area within drainage basin/outfall area = **0.00** acres

Post-development impervious area within drainage basin/outfall area = **40.87** acres

Post-development impervious fraction within drainage basin/outfall area = **0.49**

$L_M$  THIS BASIN = **35573** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Batch Detention**

Removal efficiency = **91** percent

**SOURCE:**

"COMPLYING WITH THE EDWARDS AQUIFER RULES TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES RG-348 (REVISED JULY 2005)", ADDENDUM DATED JANUARY 20, 2017, SECTION 3.2.17 'BATCH

Aqualogic Cartridge Filter  
Batch Detention  
Bioretention  
Contech StormFilter  
Constructed Wetland  
Extended Detention  
Grassy Swale  
Retention / Irrigation  
Sand Filter  
Stormceptor  
Vegetated Filter Strips  
Vortechs  
Wet Basin  
Wet Vault

**4. Calculate Maximum TSS Load Removed ( $L_R$ ) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7:  $L_R = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

where:

 $A_C$  = Total On-Site drainage area in the BMP catchment area $A_i$  = Impervious area proposed in the BMP catchment area $A_p$  = Pervious area remaining in the BMP catchment area $L_R$  = TSS Load removed from this catchment area by the proposed BMP

$A_C$  = **83.96** acres

$A_i$  = **40.87** acres

$A_p$  = **43.09** acres

$L_R$  = **41856** lbs

**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**Desired  $L_M$  THIS BASIN = **35869** lbs. $F$  = **0.86****6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.**

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth = **1.38** inches

Post Development Runoff Coefficient = **0.35**

On-site Water Quality Volume = **147346** cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

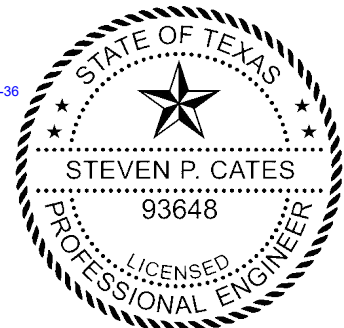
Off-site area draining to BMP = **0.00** acres

Off-site Impervious cover draining to BMP = **0.00** acres

Impervious fraction of off-site area = **0**

Off-site Runoff Coefficient = **0.00**

Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **29469**Total Capture Volume (required water quality volume(s) x 1.20) = **176815** cubic feet

CARLSON, BRIGANCE & DOERING, INC.  
ID# F3791

*Steven P. Cates*  
**12-1-2023**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.

Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:

 $L_M$  TOTAL PROJECT = Required TSS removal resulting from the proposed development = 80% of increased load $A_N$  = Net increase in impervious area for the project $P$  = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County = **Williamson**

Total project area included in plan = **38.38** acres

Predevelopment impervious area within the limits of the plan = **0.00** acres

Total post-development impervious area within the limits of the plan = **19.36** acres

Total post-development impervious cover fraction = **0.50**

$P$  = **32** inches

 $L_M$  TOTAL PROJECT = **16851** lbs.

\* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **1****2. Drainage Basin Parameters (This information should be provided for each basin):**Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area = **33.30** acres

Predevelopment impervious area within drainage basin/outfall area = **0.00** acres

Post-development impervious area within drainage basin/outfall area = **19.12** acres

Post-development impervious fraction within drainage basin/outfall area = **0.57**

$L_M$  THIS BASIN = **16642** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Batch Detention**

Removal efficiency = **91** percent

**SOURCE:**

"COMPLYING WITH THE EDWARDS AQUIFER RULES TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES RG-348 (REVISED JULY 2005)", ADDENDUM DATED JANUARY 20, 2017, SECTION 3.2.17 'BATCH

Aqualogic Cartridge Filter  
Batch Detention  
Bioretention  
Contech StormFilter  
Constructed Wetland  
Extended Detention  
Grassy Swale  
Retention / Irrigation  
Sand Filter  
Stormceptor  
Vegetated Filter Strips  
Vortechs  
Wet Basin  
Wet Vault

**4. Calculate Maximum TSS Load Removed ( $L_R$ ) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7:  $L_R = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

where:

 $A_C$  = Total On-Site drainage area in the BMP catchment area $A_i$  = Impervious area proposed in the BMP catchment area $A_p$  = Pervious area remaining in the BMP catchment area $L_R$  = TSS Load removed from this catchment area by the proposed BMP

$A_C$  = **33.30** acres

$A_i$  = **19.12** acres

$A_p$  = **14.18** acres

$L_R$  = **19487** lbs

**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**Desired  $L_M$  THIS BASIN = **16851** lbs. $F$  = **0.86****6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.**

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth = **1.38** inches

Post Development Runoff Coefficient = **0.40**

On-site Water Quality Volume = **67118** cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

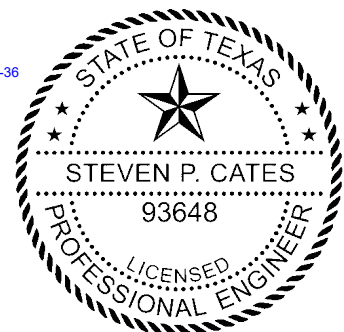
Off-site area draining to BMP = **0.00** acres

Off-site Impervious cover draining to BMP = **0.00** acres

Impervious fraction of off-site area = **0**

Off-site Runoff Coefficient = **0.00**

Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **13424**Total Capture Volume (required water quality volume(s) x 1.20) = **80541** cubic feetCARLSON, BRIGANCE & DOERING, INC.  
ID# F3791

**12-1-2023**



*Appendix B*

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

*Water Quality Calculation*

*Spreadsheet*

# SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3

Table 1 - Impervious Cover per Section

Contributing Sections	TCEQ Project Area Per Section						Onsite Drainage Basin to BMP Per Section						TSS Removal Required (lbs)
	Project Area (ac)	# Lots	Impervious Areas (ac)				Drainage Basin (ac)	# Lots	Impervious Areas (ac)				
			Lots	ROW	Misc.	Total			Lots	ROW	Misc.	Total	
EXISTING BATCH DETENTION POND S3													
SADDLEBACK 1-1	25.97	91	7.31	2.98	0.00	10.29	23.44	91	7.31	2.98	0.00	10.29	8,956
SADDLEBACK 1-2	47.12	191	15.60	8.25	0.00	23.85	45.74	191	15.60	8.25	0.00	23.85	20,759
SADDLEBACK 1-3	5.93	38	3.06	1.04	0.00	4.10	5.93	34	2.73	1.04	0.00	3.77	3,577
FUTURE SADDLEBACK	8.85	13	1.15	0.31	1.50	2.96	8.85	13	1.15	0.31	1.50	2.96	2,576
EXISTING BATCH DETENTION POND S4													
SADDLEBACK 1-2	0.67	4	0.33	0.00	0.00	0.33	0.67	4	0.33	0.00	0.00	0.33	287
SADDLEBACK 1-3	29.96	115	9.38	5.36	0.00	14.74	24.88	112	9.14	5.36	0.00	14.50	12,830
SADDLEBACK 2-1	6.08	28	2.25	1.26	0.00	3.51	6.08	28	2.25	1.26	0.00	3.51	3,055
FUTURE SADDLEBACK	1.67	7	0.57	0.21	0.00	0.78	1.67	7	0.57	0.21	0.00	0.78	679
SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3													
SADDLEBACK 1-3	37.02	154	12.51	6.08	0	18.59							16,181

Table 2 - BMP Treatment Requirements

Project Area			Drainage Basin						Batch Pond	
			Onsite		Offsite		Total		Capacity at WQV (cf)	
Total (ac)	Impv Area (ac)	Required TSS Removal (lbs)	Total (ac)	Impv Area (ac)	Total (ac)	Impv Area (ac)	Total (ac)	Impv Area (ac)	Required	Provided
<b>EXISTING BATCH DETENTION POND S3</b>										
87.87	41.20	35,869	83.96	40.87	3.91	0.33	87.87	41.20	176,815	179,000
<b>EXISTING BATCH DETENTION POND S4</b>										
38.38	19.36	16,851	33.30	19.12	5.08	0.24	38.38	19.36	80,541	80,800

Pond S3 Stage-Storage

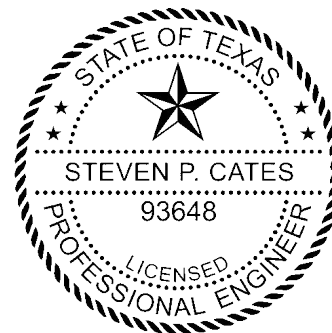
Stage	Area (sf)	Area (ac)	Incremental Storage (cf)	Cumulative Storage (cf)	Cumulative Storage (ac-ft)	
904.75	15	0.00	0	0	0.00	Pond Bottom
905.00	3,927	0.09	493	493	0.01	
906.00	32,354	0.74	18,141	18,633	0.43	
907.00	77,977	1.79	55,166	73,799	1.69	
908.00	122,835	2.82	100,406	174,205	4.00	WQV Provided
908.03				179,000		
909.00	160,219	3.68	141,527	315,732	7.25	
910.00	196,873	4.52	178,546	494,278	11.35	
911.00	217,119	4.98	206,996	701,274	16.10	Top of Berm
912.00	225,080	5.17	221,100	922,373	21.17	

\*Pond S3 Stage-Storage per Saddleback at Santa Rita Ranch Phase 1, Section 1 Construction Plans

Pond S4 Stage-Storage

Stage	Area (sf)	Area (ac)	Incremental Storage (cf)	Cumulative Storage (cf)	Cumulative Storage (ac-ft)	
918.60	36	0.00	0	0	0.00	Pond Bottom
919.00	14,881	0.34	2,983	2,983	0.07	
920.00	33,816	0.78	24,348	27,332	0.63	
921.00	40,105	0.92	36,961	64,292	1.48	
921.39				80,800		WQV Provided
922.00	43,735	1.00	41,920	106,212	2.44	
923.00	47,361	1.09	45,548	151,760	3.48	
924.00	51,052	1.17	49,206	200,967	4.61	
925.00	54,807	1.26	52,930	253,896	5.83	Top of Berm
926.00	58,627	1.35	56,717	310,613	7.13	

\*Pond S4 Stage-Storage per Saddleback at Santa Rita Ranch Phase 1, Section 3 Construction Plans



CARLSON, BRIGANCE & DOERING, INC.  
ID# F3791

*Steven P. Cates*

12-1-2023

*Appendix C*

**TCEQ CZP APPLICATION**

**Saddleback at Santa Rita Ranch Phase 1 Section 3**

**Williamson County, Texas**

*CZP Approval Letter*

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*

August 13, 2021

Mr. James Edward Horne  
Santa Rita KC, LLC  
1700 Cross Creek Lane, Suite 100  
Liberty Hill, Texas 78642

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Saddleback at Santa Rita Ranch Phase 1 Section 1; Located Southwest of Ronald Reagan Blvd. and Tower Rd.; Liberty Hill (ETJ), Texas

TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID No. 11002565; Regulated Entity No. RN111283701

Dear Mr. Horne:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP application for the above-referenced project submitted to the Austin Regional Office by Carlson, Brigrance & Doering, Inc. on behalf of Santa Rita KC, LLC on June 18, 2021. Final review was completed after additional material was received on August 12, 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 proposed single-family residential project will have an area of approximately 79.21 acres. It will include the development of 222 single-family residential lots, roads and drives, utilities, and three water quality basins (Ponds S1, S2, and S3). The impervious cover will be 30.63 acres (38.7 percent). The wastewater generated by this project will be conveyed to the existing Liberty Hill Wastewater Treatment Plant.

#### PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, three batch detentions (Ponds S1, S2, and S3), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 26,664 pounds of TSS generated from the 30.63 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The proposed water quality basins are sized for future development. Pond S1 is designed to have a capacity of 62,314 cubic feet (cf), to remove 9,732 pounds of TSS to treat stormwater runoff from a maximum of 11.18 acres of impervious cover. Pond S2 is designed to have a capacity of 208,303 cf, to remove 28,915 pounds of TSS to treat stormwater runoff from a maximum of 33.22 acres of impervious cover. Pond S3 is designed to have a capacity of 174,205 cf, to remove 26,181 pounds of TSS to treat stormwater runoff from a maximum of 30.08 acres of impervious cover.

#### SPECIAL CONDITIONS

- I. All permanent pollution abatement measures shall be operational prior to occupancy of the houses.
- II. All sediment and/or media removed from the water quality basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

#### 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. 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 CZP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP 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.
6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin 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.

7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP), 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.

During Construction:

8. 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.
9. 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 significantly reduced. 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).
10. 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.
11. 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.
12. 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.
13. 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. 5, above.

After Completion of Construction:

14. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. 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 Austin Regional Office within 30 days of site completion.
15. 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

Mr. James Edward Horne

Page 4

August 13, 2021

the property is transferred to the entity. Such 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 the Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone 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.
17. A Contributing Zone 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 Contributing Zone Plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
18. 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 Ms. Mihaela (Miki) Chilarescu, P.E. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,



Lillian Butler, Section Manager  
Edwards Aquifer Protection Program  
Texas Commission on Environmental Quality

LIB/mec

Enclosure: Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

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

I Stephen Ashlock,  
Print Name  
Vice President of Land Development,  
Title - Owner/President/Other  
of Pulte Homes of Texas, LP,  
Corporation/Partnership/Entity Name  
have authorized Steven P. Cates, P.E.,  
Print Name of Agent/Engineer  
of Carlson, Brigance & Doering, 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:

[Signature]  
Applicant's Signature

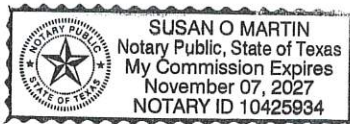
11/28/2023  
Date

THE STATE OF TEXAS §

County of DALLAS §

BEFORE ME, the undersigned authority, on this day personally appeared STEPHEN ASHLOCK 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 28<sup>th</sup> day of NOVEMBER 2023.



[Signature]  
NOTARY PUBLIC

SUSAN O. MARTIN  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/07/2027

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Saddleback at Santa Rita Ranch Phase 1 Section 3

Regulated Entity Location: South of Donovan Drive, West of Grovelad Drive

Name of Customer: Pulte Homes of Texas, LP

Contact Person: Stephen Ashlock

Phone: (512)532-3355

Customer Reference Number (if issued):CN 603410499

Regulated Entity Reference Number (if issued):RN \_\_\_\_\_

### 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):

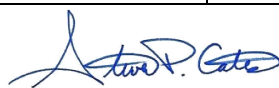
☐ Recharge Zone

☒ 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	37.02 Acres	\$ 4,000.00
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	Each	\$
Extension of Time	Each	\$

Signature: \_\_\_\_\_



Date: 10/01/2023

## 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***

<b><i>Project</i></b>	<b><i>Project Area in Acres</i></b>	<b><i>Fee</i></b>
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***

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

#### ***Underground and Aboveground Storage Tank System Facility Plans and Modifications***

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

#### ***Exception Requests***

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

***Extension of Time Requests***

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



# TCEQ Core Data Form

TCEQ Use Only

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)	Follow this link to search for CN or RN numbers in <a href="#">Central Registry**</a>	3. Regulated Entity Reference Number (if issued)
CN 603410499		RN

## SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	12/01/2023	
<input checked="" type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership			
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)			
<b>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).</b>			
6. Customer Legal Name (If an individual, print last name first: e.g.: Doe, John)		If new Customer, enter previous Customer below:	
Pulte Homes of Texas, LP			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0010034910	17527201275	752720127	
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 checked="" type="checkbox"/> Other: Limited Partnership	
12. Number of Employees		13. Independently Owned and Operated?	
<input checked="" 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 type="checkbox"/> Yes <input checked="" 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:	9401 Amberglen Blvd.		
	Bldg. I, Suite 150		
	City	State	ZIP
	Austin	TX	78729
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		Stephen.Ashlock@PulteGroup.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
( 512 ) 532 - 3355		( ) -	

## 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 checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<b>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).</b>	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
Saddleback at Santa Rita Ranch Phase 1 Section 3	

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

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:							
26. Nearest City					State		Nearest ZIP Code
Liberty Hill					TX		78642
27. Latitude (N) In Decimal:		30.670536		28. Longitude (W) In Decimal:		-97.851442	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
30	40	13.93	97	51	5.19		
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)	
1521							
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
34. Mailing Address:	Pulte Group						
	9401 Amberglen Blvd. Bldg. I, Suite 150						
	City	Liberty Hill	State	TX	ZIP	78729	ZIP + 4
35. E-Mail Address:		Stephen.Ashlock@PulteGroup.com					
36. Telephone Number			37. Extension or Code		38. Fax Number (if applicable)		
( 512 ) 532 - 3355					( ) -		

**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.

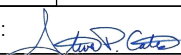
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
		EAPP # 11002565		
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input checked="" 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: Steven P. Cates, P.E.		41. Title: Senior Project Manager	
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
( 512 ) 280 - 5160		( 512 ) 280 - 5165	steve@cbdeng.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:	Carlson, Brigrance and Doering, Inc.	Job Title:	Senior Project Manager
Name(In Print):	Steven P. Cates	Phone:	( 512 ) 280 - 5160
Signature:		Date:	12-18-2023



WILLIAMSON COUNTY, TEXAS  
CONSTRUCTION PLANS

THESE WATER SYSTEM PLANS WERE PREPARED, SEALED,  
SIGNED AND DATED BY A TEXAS LICENSED PROFESSIONAL  
ENGINEER. THEREFORE BASED ON THE ENGINEER'S  
CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION  
PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT  
ARE HEREBY APPROVED SUBJECT TO STANDARD  
CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL  
AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL  
REQUIREMENTS AND CODES.

STEVEN P. CATES, P.E.  
REGISTERED PROFESSIONAL ENGINEER No. 93648

REV. NO.	SHT. NO.	DESCRIPTION OF REVISION	ACCEPTED	DATE	ACCEPTED	DATE	ACCEPTED	DATE	ACCEPTED	DATE
			WILLIAMSON COUNTY		CITY OF GEORGETOWN		CITY OF LIBERTY HILL		W.C. M.U.D. #19	



DESIGNED BY:	SPC	DRAWN BY:	CEL
DATE			
REVISION			


**Carlson, Brigrance & Doering, Inc.**

Civil Engineering ♦ Surveying

FIRM ID #F3791

Main Office: North Office  
5501 West McCombs Dr. 12129 McCombs Dr.  
Austin, Texas 78749 Austin, Texas 78750

Phone No. (512) 280-5160 Fax No. (512) 280-5165




**COVER SHEET**

**JOB NAME: SADDLEBACK AT SANTA RITA RANCH**

**PHASE: 1 SECTION 3**

**PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS**



CARLSON, BRIGRANCE & DOERING, INC.  
ID# F3791

*Steven P. Cates*

**12-1-2023**

DATE	OCT 2023
JOB NUMBER	5413
SHEET	1
OF	73
SHEET NO.	1



FILE PATH: J:\ACSD\5413\dwg\5413-COVER.dwg - Nov 28, 2023 - 1:24pm

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2 - SHEET INDEX

3 - GENERAL NOTES (1 OF 2)

4 - GENERAL NOTES (2 OF 2)

5 - FINAL PLAT

6 - FINAL PLAT

7 - FINAL PLAT

8 - EROSION CONTROL PLAN (1 OF 2)

9 - EROSION CONTROL PLAN (2 OF 2)

10 - EROSION CONTROL NOTES & DETAILS

11 - EXISTING HYDROLOGY MAP

12 - DEVELOPED HYDROLOGY MAP

13 - DRAINAGE AREA PLAN (1 OF 2)

14 - DRAINAGE AREA PLAN (2 OF 2)

15 - DRAINAGE AREA CALCS

16 - TCEQ PROJECT AND DRAINAGE AREA MAP

17 - GRADING PLAN (1 OF 2)

18 - GRADING PLAN (2 OF 2)

19 - TRAFFIC CONTROL PLAN (1 OF 2)

20 - TRAFFIC CONTROL PLAN (2 OF 2)

21 - BOWIE BEND (0+00 TO 4+00)

22 - BOWIE BEND (4+00 TO 8+00)

23 - BOWIE BEND (8+00 TO 11+00)

24 - BOWIE BEND (11+00 TO 14+50)

25 - BOWIE BEND (14+50 TO 17+50)

26 - BOWIE BEND (17+50 TO END)

27 - BRISTLECONE BEND (0+00 TO 3+00)

28 - BRISTLECONE BEND (3+00 TO END)

29 - HODGE LANE (0+00 TO 4+00)

30 - HODGE LANE (4+00 TO END)

31 - ARCHWAY LANE (0+00 TO 3+50)

32 - ARCHWAY LANE (3+50 TO END)

33 - LILLY WAY (0+00 TO 2+50)

34 - LILLY WAY (2+50 TO 5+00)

35 - LILLY WAY (5+00 TO END)

36 - MATERA PASS (0+00 TO END)

37 - BARNETT PASS (0+00 TO 4+00)

38 - BARNETT PASS (4+00 TO 7+50)

39 - BARNETT PASS (7+50 TO END)

40 - POND PLAN

41 - POND DETAILS

42 - OVERALL STORMSEWER PLAN (1 OF 2)

43 - OVERALL STORMSEWER PLAN (2 OF 2)

44 - STORMSEWER LINE A (0+00 TO 6+00)

45 - STORMSEWER LINE A (6+00 TO 14+00)

46 - STORMSEWER LINE A (14+00 TO END)

47 - STORMSEWER LINE B (0+00 TO END)

48 - STORMSEWER LINE C & D (0+00 TO END)

49 - STORMSEWER LINE E (0+00 TO END)

50 - STORMSEWER LINE F & G (0+00 TO END)

51 - STORMSEWER LINE H (0+00 TO END)

52 - STORMSEWER LATERALS (1 OF 2)

53 - STORMSEWER LATERALS (2 OF 2)

54 - OVERALL WATER PLAN (1 OF 2)

55 - OVERALL WATER PLAN ( 2 OF 2)

56 - OVERALL WASTEWATER PLAN (1 OF 2)

57 - OVERALL WASTEWATER PLAN (2 OF 2)

58 - WASTEWATER LINE A (0+00 TO 8+50)

59 - WASTEWATER LINE A (8+50 TO 17+00)

60 - WASTEWATER LINE A (17+00 TO END)

61 - WASTEWATER LINE B (0+00 TO END)
- 62 - WASTEWATER LINE C (0+00 TO END)

63 - WASTEWATER LINE D AND E (0+00 TO END)

64 - WASTEWATER LINE F (0+00 TO END)

65 - WASTEWATER LINE G (0+00 TO END)

66 - WASTEWATER LINE H (0+00 TO END)

67 - WASTEWATER LINE J (0+00 TO END)

68 - WASTEWATER LINE K (0+00 TO END)

69 - CONSTRUCTION DETAILS (1 OF 3)

70 - CONSTRUCTION DETAILS (2 OF 3)

71 - CONSTRUCTION DETAILS (3 OF 3)

72 - WATER DETAILS

73 - WASTEWATER DETAILS

DESIGNED BY: SPC		DRAFTED BY: CFH		
DATE				
REVISION				
<div><div><div>CBD</div><div>Carlson, Brigrance &amp; Doering, Inc. Civil Engineering ♦ Surveying</div></div><div><div>FIRM ID #E3791</div><div>Mail: OFF - Santa Rita Ranch, TX 5501 West Williams Canyon Dr. 12120 RR (23) N. Ste. 600 Austin, Texas 78750</div></div><div><div>Phone No. (512) 280-5160</div><div>Fax No. (512) 280-5165</div></div></div>		<div><div>SHEET NAME: SHEET INDEX</div><div>JOB NAME: SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3</div><div>PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS</div></div>		<div><div><div><div>STATE OF TEXAS</div><div>STEVEN P. GATES</div><div>93648</div><div>PROFESSIONAL ENGINEER</div></div><div><div>CARLSON, BRIGRANCE &amp; DOERING, INC.</div><div>ID# F3791</div><div><i>Steven P. Gates</i></div><div>12-1-2023</div></div></div></div> <div>DATE OCT 2023</div> <div>JOB NUMBER 5413</div> <div>SHEET 2 OF 73</div> <div>SHEET NO. 2</div>



CONSTRUCTION SEQUENCING

- GENERAL CONTRACTOR TO INSTALL AND MAINTAIN EROSION CONTROLS AND TREE PROTECTION PER APPROVED PLANS.
- HOLD PRE-CONSTRUCTION CONFERENCE. PROVIDE 72 HOUR NOTIFICATION TO THE OWNER, THE DESIGN ENGINEER, THE CONTRACTOR AND SUBCONTRACTORS, THE M.U.D. ENGINEER (512) 836-4817, THE CITY OF LIBERTY HILL (512) 778-5449, (WAYNE BONNET, DIRECTOR OF PUBLIC WORKS), WILLIAMSON COUNTY INSPECTIONS SUPERVISOR, GEORGE WAYFIELD (512) 943-3324, AND THE CITY OF GEORGETOWN UTILITY SYSTEM (512)930-3640. SEE WILLIAMSON COUNTY SUBDIVISION REGULATIONS CONSTRUCTION-GENERAL NOTE #1 ON THIS SHEET.
- ROUGH CUT ALL REQUIRED OR NECESSARY PONDS. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING. CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A LOW-LEVEL OUTLET AND AN EMERGENCY OVERFLOW. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL FINAL RESTORATION IS ACHIEVED.
- ROUGH GRADE STREETS, NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME. ONCE STREETS ARE ROUGH CUT, THE GEOTECHNICAL ENGINEER IS TO FIELD VERIFY PAVEMENT DESIGN IS APPROPRIATE, AND MODIFY RECOMMENDATIONS ACCORDINGLY.
- INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
- BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS MUCH AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
- RESHADE STREETS TO SUBGRADE.
- INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
- INSTALL CURB AND GUTTER.
- LAY FINAL BASE COURSE ON ALL STREETS.
- LAY ASPHALT.
- COMPLETE ALL UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.
- COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.
- THE PROJECT ENGINEER INSPECTS JOB AND WRITES CONCURRENCE LETTER TO THE CITY. FINAL INSPECTION IS SCHEDULED UPON RECEIPT OF LETTER. FINAL INSPECTION WITH THE M.U.D. ENGINEER, EV INSPECTOR, THE CITY OF LIBERTY HILL, WILLIAMSON COUNTY, AND THE CITY OF GEORGETOWN PRIOR TO THE REMOVAL OF EROSION CONTROLS.
- REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS. TREE PROTECTION SHALL BE REQUIRED TO BE MAINTAINED AND REMAIN IN PLACE FOR EACH RESIDENTIAL LOT THROUGH RECEIPT OF THE CONCURRENCE LETTER TO THE RESIDENTIAL CERTIFICATE OF OCCUPANCY.
- COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 15.

GEORGETOWN UTILITY SYSTEMS GENERAL NOTES:

- THESE CONSTRUCTION PLANS WERE PREPARED, SEALED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
- THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT OF THE CITY.
- THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED SITE PLAN.
- PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2 HOURS.
- PRIVATE WATER SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE BUILDING SPRINKLER SYSTEM, AND 200 PSI C900 PVC FOR ALL OTHERS.
- PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 PVC AND TESTED BY THE CONTRACTOR AT 150 PSI FOR 4 HOURS.
- ALL BENDS AND CHANGES IN DIRECTION ON WATER MAINS SHALL BE RESTRAINED AND THURST BLOCKED.
- LONG FIRE HYDRANT LEADS SHALL BE RESTRAINED.
- ALL WATER LINES ARE TO BE BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO THE CITY STANDARDS AND SPECIFICATIONS.
- WATER AND SEWER MAIN CROSSINGS SHALL MEET ALL REQUIREMENTS OF THE TCEO AND THE CITY.
- A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEARS IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
- RECORD DRAWINGS OF THE PUBLIC IMPROVMENTS SHALL BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT. THESE DRAWINGS SHALL BE SUBMITTED AS A PDF (300P DPI) ON A FLASH DRIVE, OR BY A CLOUD SOURCE.

STREET AND DRAINAGE NOTES:

- ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT "WILLIAMSON COUNTY SUBDIVISION REGULATIONS," AS APPLICABLE.
- ALL MATERIALS SHALL BE SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER. THE OWNER SHALL PAY FOR ALL TESTING SERVICES AND SHALL FURNISH THE COUNTY ENGINEER WITH CERTIFIED COPIES OF THESE TEST RESULTS. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. THE COUNTY ENGINEER MUST APPROVE THE TEST RESULTS PRIOR TO CONSTRUCTING THE NEXT COURSE OF THE ROADWAY STRUCTURE. ANY MATERIAL WHICH DOES NOT MEET THE MINIMUM REQUIRED TEST SPECIFICATIONS SHALL BE REMOVED AND RECOMPACTED OR REPLACED UNLESS ALTERNATIVE REMEDIAL ACTION IS APPROVED IN WRITING FROM THE COUNTY ENGINEER.
- BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 3" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 3" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
- DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TV, WATER SERVICES, ETC., SHALL BE A MINIMUM OF 30" BELOW SUBGRADE.
- STREET RIGHTS-OF-WAY SHALL BE GRADED AT A SLOPE OF 1/4" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED. HOWEVER, IN NO CASE SHALL THE WIDTH OF RIGHT-OF-WAY AT 1/4" PER FOOT SLOPE BE LESS THAN 10 FEET UNLESS A SPECIFIC REQUEST FOR AN ALTERNATE GRADING SCHEME IS MADE TO AND ACCEPTED BY THE COUNTY ENGINEER. BARRICADES BUILT TO WILLIAMSON COUNTY STANDARDS SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB AND PUBLIC SAFETY.
- ALL R.C.P. SHALL BE MINIMUM CLASS III, UNLESS OTHERWISE NOTED.
- THE PREPARATION OF SUBGRADE SHALL FOLLOW GOOD ENGINEERING PRACTICES AS DIRECTED BY THE COUNTY ENGINEER AND IN CONJUNCTION WITH THE OUTLINED IN THE GEOTECHNICAL REPORT BY MIA LABS, INC., DATED. THE PAVING SECTIONS ARE TO BE CONSTRUCTED AS FOLLOWS:

RECOMMENDATIONS PAVEMENT THICKNESS SECTIONS

Street Classification	Subgrade Material	Hot Mix Asphaltic Concrete, in	Crushed Limestone Base, in	Lime Stabilized Subgrade, in
Neighborhood Collectors	Subgrade PI > 20	3.0	13	8
Local Streets	Subgrade PI > 20	2.0	8	8
Residential Collectors	Subgrade PI > 20	2.0	12	8

Notes:

- Where the subgrade is comprised of limestone or low PI clay (PI < 20), lime stabilization may be omitted.
- The surface clay must first be tested for sulfate reaction and a mix design should be completed to determine the proper lime content, lime bype, mixing procedure and curing conditions required.
- The subgrade improvement should be extended 3 feet beyond the back of the curb line.
- These pavement thickness designs are intended to transfer the load from the anticipated traffic conditions.
- The responsibility of assigning street classification to the streets in this project is left to the civil engineer.
- If pavement designs other than those listed above are desired, please contact EITL ENGINEERS & CONSULTANTS

THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOLS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISION OF THE CONSTRUCTION PLANS.

- WHERE PIS ARE OVER 20, SUBGRADES MUST BE STABILIZED UTILIZING A METHOD ACCEPTABLE TO THE COUNTY ENGINEER. THE GEOTECHNICAL ENGINEER SHALL RECOMMEND AN APPROPRIATE SUBGRADE STABILIZATION IF SULFATES ARE DETERMINED TO BE PRESENT. SEE THE GEOTECHNICAL REPORT FOR DESIGN GUIDES FOR DIFFERENT PI VALUES.
- CONTRACTOR IS TO AVOID INSTALLATION OF IRRIGATION, PLANTINGS, SILT FENCE, ETC. IN THE SUBGRADE IMPROVEMENT EXTENDED BEHIND THE CURB.

PER THE WILLIAMSON COUNTY ENGINEER, THERE MUST BE A TxDOT HMAc WEARING SURFACE 340 TYPE D, WITHOUT RAP OR RAZ. WILLIAMSON COUNTY REQUIRES THE 2 INCH WEARING SURFACE TO BE "VIRGIN MIX"

GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WILLIAMSON COUNTY, CITY OF ROUND ROCK (WASTEWATER), AND GEORGETOWN UTILITY SYSTEMS (WATER) SPECIFICATIONS.
- DESIGN PROCEDURES ARE IN COMPLETE COMPLIANCE WITH THE CITY OF AUSTIN DRAINAGE CRITERIA MANUAL AND ALL VARIANCES TO THE MANUAL ARE NOTED. VARIANCES REQUESTED: (NONE)
- ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT PLANNED FOR DESTRUCTION OR REMOVAL THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED AT HIS EXPENSE.
- THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER WHO SHALL BE RESPONSIBLE FOR REVISING THE PLANS ARE APPROPRIATE.
- MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL PAVING CONSTRUCTION.
- THE CONTRACTOR SHALL GIVE THE CITY OF LIBERTY HILL 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION. TELEPHONE 512-778-5449 (PLANNING & DEVELOPMENT DEPARTMENT)
- ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION.
- THE CONTRACTOR AND THE ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LIBERTY HILL ACCURATE "AS-BUILT" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "AS-BUILT" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE PLANNING & DEVELOPMENT DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
- THE LIBERTY HILL CITY COUNCIL SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
- WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE COUNTY ENGINEER.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
- AVAILABLE BENCHMARKS THAT MAY BE UTILIZED FOR THE CONSTRUCTION OF THIS PROJECT ARE DESCRIBED AS FOLLOWS:

BENCHMARKS:

DESCRIPTION	ELEVATION	NORTHING	EASTING
MAG NAIL @ TOP OF CURB ON THE NORTH WEST SIDE OF THE INTERSECTION OF INSPIRATION DRIVE AND KRUPP AVENUE	1,034.95	10,215,305.2832	3,082,177.5880
MAG NAIL VW SHINER ON HEADWALL ON NORTH SIDE OF MAGDALENE WAY/KRUPP AVENUE KNUCKLE	1,025.14	10,216,145.1382	3,083,291.4400
MAG NAIL W/ SHINER IN THE EASTERN ROW OF RONALD REAGAN BLVD APPROXIMATELY 600' SOUTH OF THE BRIDGE OVER SOWES BRANCH	908.25	10,218,449.9552	3,080,132.8670

TRENCH SAFETY NOTES:

- IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDED BY THE CONTRACTOR.
- IN ACCORDANCE WITH THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4-FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- IF TRENCH SAFETY SYSTEM DETAILS WERE NOT PROVIDED IN THE PLANS BECAUSE TRENCHES WERE ANTICIPATED TO BE LESS THAN 5 FEET IN DEPTH AND DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE. THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF LIBERTY HILL.

TRAFFIC MARKING NOTES:

- ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
- ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.

EROSION AND SEDIMENTATION CONTROL NOTES:

- EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF LIBERTY HILL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
- ALL SLOPES SHALL BE SOODED OR SEEDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED.
- SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CITY OF LIBERTY HILL FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY ENGINEER, THEY ARE WARRANTED.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY THE ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY THE ENGINEER.
- ALL MUD, DIRT, ROCKS, DEBRIS, ETC., SPILLED, TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES AND AREAS USED BY THE PUBLIC SHALL BE CLEANED UP IMMEDIATELY.

WILLIAMSON COUNTY SUBDIVISION REGULATIONS

APPENDIX B

ADOPTED AND EFFECTIVE AS OF JANUARY 18, 2018

CONSTRUCTION - GENERAL

- A PRECONSTRUCTION MEETING SHALL BE SCHEDULED PRIOR TO THE START OF CONSTRUCTION. THE DESIGN ENGINEER, M.U.D. ENGINEER, OWNER, CONTRACTOR, SUBCONTRACTORS, AND COUNTY ENGINEER SHALL ATTEND THIS MEETING. ALL ROADS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AS APPROVED BY THE COUNTY ENGINEER AND IN ACCORDANCE WITH THE SPECIFICATIONS FOUND IN THE CURRENT VERSION OF THE "TEXAS DEPARTMENT OF TRANSPORTATION MANUAL STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES" UNLESS OTHERWISE STATED ON THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER.
- ALL MATERIALS SHALL BE SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE COUNTY ENGINEER. THE OWNER SHALL PAY FOR ALL TESTING SERVICES AND SHALL FURNISH THE COUNTY ENGINEER WITH CERTIFIED COPIES OF THESE TEST RESULTS. THE COUNTY ENGINEER MUST APPROVE THE TEST RESULTS PRIOR TO CONSTRUCTING THE NEXT COURSE OF THE ROADWAY STRUCTURE. ANY MATERIAL WHICH DOES NOT MEET THE MINIMUM REQUIRED TEST SPECIFICATIONS SHALL BE REMOVED AND RECOMPACTED OR REPLACED UNLESS ALTERNATIVE REMEDIAL ACTION IS APPROVED IN WRITING FROM THE COUNTY ENGINEER.
- EXCEPT FOR ELECTRICAL LINES, ALL UNDERGROUND NONFERROUS UTILITIES WITHIN A RIGHT-OF-WAY OR EASEMENT MUST BE ACCOMPANIED BY FERROUS METAL LINES TO AID IN TRACING THE LOCATION OF SAID UTILITIES THROUGH THE USE OF A METAL DETECTOR.
- ALL PAVEMENTS ARE TO BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. THE DESIGN SHALL BE BASED ON A 20-YEAR DESIGN LIFE AND IN CONJUNCTION WITH RECOMMENDATIONS BASED UPON A SOILS REPORT OF SAMPLES TAKEN ALONG THE PROPOSED ROADWAYS. TEST BORINGS SHALL BE PLACED AT A MAXIMUM SPACING OF 500 FEET OR OTHER SAMPLING FREQUENCY APPROVED BY THE COUNTY ENGINEER BASED ON RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER. THE SOILS REPORT AND PAVEMENT DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR REVIEW. THE PAVEMENT DESIGN MUST BE APPROVED BY THE COUNTY ENGINEER PRIOR TO OR CONCURRENTLY WITH THE REVIEW AND APPROVAL OF THE CONSTRUCTION PLANS. IN ADDITION TO THE BASIS OF THE PAVEMENT DESIGN, THE SOILS REPORT SHALL CONTAIN THE RESULTS OF SAMPLED AND TESTED SUBGRADE FOR PLASTICITY INDEX, PH, SULFATE CONTENT, AND MAXIMUM DENSITY.

SUBGRADE:

- THE PREPARATION OF THE SUBGRADE SHALL FOLLOW GOOD ENGINEERING PRACTICES AS DIRECTED BY THE COUNTY ENGINEER IN CONJUNCTION WITH RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT. WHEN THE PLASTICITY INDEX (PI) IS GREATER THAN 20, A SUFFICIENT AMOUNT OF LIME SHALL BE ADDED AS DESCRIBED IN ITEM 260 OF THE CURRENT EDITION OF THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNTIL THE PI IS LESS THAN 20. IF THE ADDITION OF LIME AS DESCRIBED IN ITEM 260 IS NOT FEASIBLE, AN ALTERNATE STABILIZING DESIGN SHALL BE PROPOSED AND SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL. THE SUBGRADE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A DRY DENSITY PER TxDOT ITEM 132. IN ADDITION, PROOF ROLLING MAY BE REQUIRED BY THE COUNTY ENGINEER.

- THE SUBGRADE SHALL BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF ALL INSPECTION REPORTS FURNISHED TO THE COUNTY ENGINEER, WHO MUST APPROVE THE REPORT PRIOR TO APPLICATION OF THE BASE MATERIAL. ALL DENSITY TEST REPORTS SHALL INCLUDE A COPY OF THE WORK SHEET SHOWING THE PERCENTAGE OF THE MAXIMUM DRY (PROCTOR) DENSITY. THE NUMBER AND LOCATION OF ALL SUBGRADE TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER.

BASE MATERIAL:

- BASE MATERIAL SHALL CONFORM TO ITEM 247 OF THE CURRENT EDITION OF THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, "FLEXIBLE BASE". THE BASE MATERIAL SHALL BE TYPE A GRADE 1, TYPE A GRADE 2, OR AS APPROVED BY THE COUNTY ENGINEER.
- EACH LAYER OF BASE COURSE SHALL BE TESTED FOR IN-PLACE DRY DENSITY AND MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL BASE TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.

- THE BASE SHALL BE PREPARED AND COMPACTED TO ACHIEVE A MINIMUM OF 98% OF THE MAXIMUM (PROCTOR) DRY DENSITY OR AS APPROVED BY THE COUNTY ENGINEER UPON RECOMMENDATION BY THE TESTING LABORATORY. THE MAXIMUM LIFT SHALL NOT EXCEED SIX INCHES. THE BASE MUST BE INSPECTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY AND A CERTIFIED COPY OF THE TEST RESULTS FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL. PRIOR TO THE PLACEMENT OF THE FIRST LIFT OF BASE, THE STOCKPILE SHALL BE TESTED FOR THE SPECIFICATIONS FOUND IN ITEM 247 TABLE 1 AND THE RESULT FURNISHED TO THE COUNTY ENGINEER FOR APPROVAL.

BITUMINOUS PAVEMENT:

- URBAN ROADS REQUIRE A MINIMUM 2 INCH WEARING SURFACE OF HMAc TxDOT TYPE D. THE MIX SHALL BE FROM A TxDOT CERTIFIED PLANT. THE MIX DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL. CONTRACTOR'S QUALITY CONTROL (CQC) TEST REPORTS SHALL BE SUBMITTED TO THE COUNTY ENGINEER ON A DAILY BASIS. AS A MINIMUM, DAILY CQC TESTING ON THE PRODUCED MIX SHALL INCLUDE: SIEVE ANALYSIS TEX-200-F, ASPHALT CONTENT TEX-210-F, HVEEM STABILITY TEX-208-F, LABORATORY COMPACTED DENSITY TEX-207-F, AND MAXIMUM SPECIFIC GRAVITY TEX-227-F. THE NUMBER AND LOCATION OF ALL HMAc TESTS SHALL BE DETERMINED BY THE COUNTY ENGINEER WITH A MINIMUM OF THREE, 6-INCH DIAMETER FIELD CORES SECURED AND TESTED BY THE CONTRACTOR FROM EACH DAY'S PAVING. EACH HMAc COURSE SHALL BE TESTED FOR IN-PLACE DENSITY, BITUMINOUS CONTENT AND AGGREGATE GRADATION, AND SHALL BE MEASURED FOR COMPACTED THICKNESS. THE NUMBER AND LOCATION OF ALL HMAc TEST SAMPLES SHALL BE DETERMINED BY THE COUNTY ENGINEER.
- RURAL ROADS MAY USE EITHER THE SPECIFICATIONS FOUND IN SECTION 87.1 OR A TWO-COURSE SURFACE IN ACCORDANCE WITH ITEM 316, TREATMENT WEARING SURFACE, OF THE CURRENT EDITION OF THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE TYPE AND RATE OF ASPHALT AND AGGREGATE SHALL BE INDICATED ON THE PLANS AS A BASIS OF ESTIMATE AND SHALL BE DETERMINED AT THE PRECONSTRUCTION CONFERENCE. AGGREGATE USED IN THE MIX SHALL BE ON THE TxDOT QUALITY MONITORING SCHEDULE. AGGREGATE SHALL BE TYPE B GRADE 4. GRADATION TESTS SHALL BE REQUIRED FOR EACH 300 CUBIC YARDS OF MATERIAL PLACED WITH A MINIMUM OF TWO TESTS PER EACH GRADE PER EACH PROJECT. TEST RESULTS SHALL BE REVIEWED BY THE COUNTY ENGINEER PRIOR TO APPLICATION OF THE MATERIAL.

CONCRETE PAVEMENT:

IN LIEU OF BITUMINOUS PAVEMENT, PORTLAND CEMENT CONCRETE PAVEMENT MAY BE USED. IN SUCH CASES, THE PAVEMENT THICKNESS SHALL BE A MINIMUM OF 9 INCHES OF CONCRETE, AND SHALL BE JOINED AND REINFORCED IN ACCORDANCE WITH THE DETAIL INCLUDED IN APPENDIX J. THE MIX SHALL BE FROM A TxDOT CERTIFIED PLANT. THE MIX DESIGN SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL.

CONCRETE GENERAL:

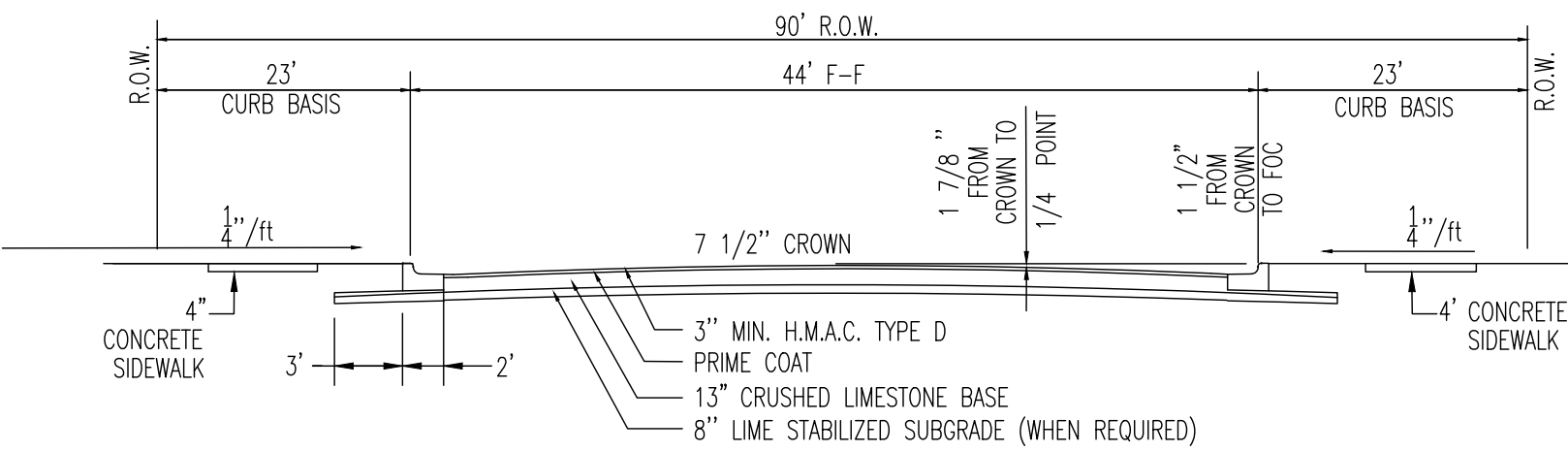
- UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE IN ACCORDANCE WITH ITEM 421 OF THE CURRENT EDITION OF THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND BE PLACED IN ACCORDANCE WITH THE APPLICABLE ITEM.
- ALL CONCRETE SHALL BE TESTED FOR COMPRESSIVE STRENGTH. ONE SET OF THREE CONCRETE TEST CYLINDERS SHALL BE MOLDED FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED FOR EACH CLASS OF CONCRETE PER DAY, OR AT ANY OTHER INTERVAL AS DETERMINED BY THE COUNTY ENGINEER. A SLUMP TEST SHALL BE REQUIRED WITH EACH SET OF TEST CYLINDERS. ONE CYLINDER SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT AN AGE OF SEVEN DAYS AND THE REMAINING TWO CYLINDERS SHALL BE TESTED AT 28 DAYS OF AGE.

ROAD NAMES, SIGNS AND MARKERS:

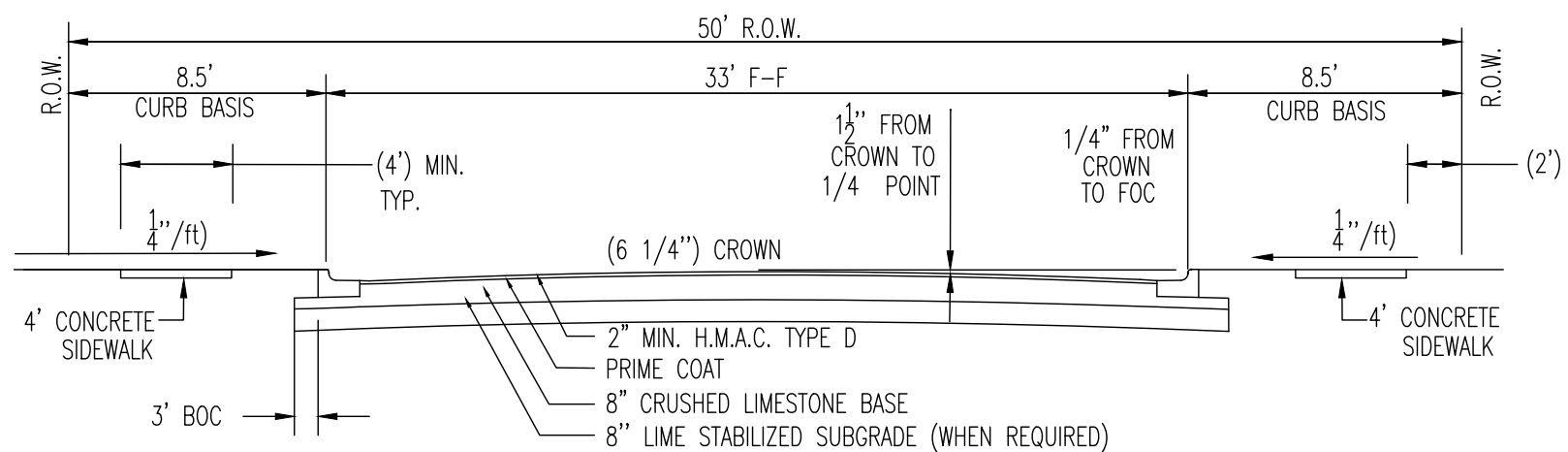
- ALL ROADS SHALL BE NAMED, WITH PRIOR APPROVAL FOR SAID NAME FROM THE WILLIAMSON COUNTY 911 ADDRESSING COORDINATOR. ROADS MUST BE NAMED IN A MANNER TO AVOID CONFUSION IN IDENTIFICATION. ROADS THAT ARE EXTENSIONS OF EXISTING ROADS MUST CARRY THE NAMES OF THOSE IN EXISTENCE. ROADS THAT ARE NOT CONTINUOUS, OR WHICH HAVE 90 DEGREE TURNS, SHALL HAVE DIFFERENT NAMES. THE OWNER SHALL PROVIDE THE COORDINATOR WITH TWO DIGITAL FILES OF THE PLAT. ONE FILE SHALL BE IN AN ADOBE .PDF FORMAT, AND THE OTHER FILE SHALL BE IN AN AUTOCAD .DWG FORMAT GEOREFERENCED TO AND 1983 STATE PLANE GRID COORDINATE SYSTEM, TEXAS CENTRAL ZONE (4203), WITH DRAWING UNITS OF US FEET. THE ROAD NAMES SHALL BE DISPLAYED ON STANDARD INTERSECTION ROAD MARKER SIGNS ERECTED BY THE OWNER IN COMPLIANCE WITH THE TxDOT "STREET NAME SIGNS" AND AT THE LOCATIONS AS INDICATED ON THE CONSTRUCTION PLANS.
- TRAFFIC CONTROL SIGNS (SUCH AS STOP, YIELD, AND SPEED LIMIT SIGNS) SHALL BE INSTALLED BY THE OWNER OF SAID SUBDIVISION IN COMPLIANCE WITH THE TxDOT AND AT THE LOCATIONS AS INDICATED ON THE APPROVED CONSTRUCTION PLANS. OTHER TRAFFIC CONTROL SIGNS, AS SHOWN ON THE CONSTRUCTION PLANS, SHALL BE INSTALLED TO INDICATE ANY UNUSUAL TRAFFIC OR ROAD HAZARD OR CONDITIONS THAT MAY EXIST. ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED IN COMPLIANCE WITH THE TxDOT AND THE CONSTRUCTION COST SHALL BE BORNE BY THE OWNER.
- A SPEED LIMIT OF 25 MPH FOR LOCAL ROADS, 30 MPH FOR COLLECTOR ROADS AND 40 MPH FOR ARTERIAL ROADS WITHIN ALL PLATTED SUBDIVISIONS IS HEREBY ADOPTED. THIS LIMIT MAY BE CHANGED ONLY BY COMMISSIONER'S COURT UPON THE BASIS OF AN ENGINEERING AND TRAFFIC INVESTIGATION SHOWING THAT THE PRIMA FACIE MAXIMUM REASONABLE AND PRUDENT SPEED FOR A PARTICULAR ROAD (OR PART OF A ROAD) SHOULD BE DIFFERENT. THE PLACEMENT OF A STOP SIGN OR A YIELD SIGN ON THE MINOR ROAD AT INTERSECTIONS SHALL BE EVALUATED ON A CASE-BY-CASE BASIS IN ACCORDANCE WITH THE TxDOT.
- FOR ANY ROAD THAT IS PROPOSED TO BE EXTENDED AT SOME TIME IN THE FUTURE, A MINIMUM OF FIVE METAL CHANNEL POSTS, EQUALLY SPACED, SHALL BE PLACED AT THE END OF THE ROAD. EACH POST SHALL HAVE AN 18"X18" RED DIAMOND OBJECT MARKER SIGN (TYPE OM-4 PER TxDOT) PLACED FOUR FEET ABOVE THE EXISTING GROUND.
- A FUTURE ROAD EXTENSION SIGN SHALL BE PLACED AT THE END OF ALL LOCALS AND TEMPORARY CUL-DE-SACS THAT ARE PROPOSED TO BE EXTENDED AT SOME TIME IN THE FUTURE. THE SIGN SHALL STATE THE FOLLOWING: FUTURE EXTENSION OF <NAME OF ROAD>.
- SIGNAGE THAT DIFFERS FROM THE STANDARD SIGNAGE THAT IS MAINTAINED BY THE COUNTY SHALL BE MAINTAINED BY THE OWNER. THE SIGNAGE SHALL BE MAINTAINED IN SUCH A FASHION TO COMPLY WITH THE TxDOT REQUIREMENTS.

DRAINAGE AND FLOOD CONTROL:

- STORM WATER MANAGEMENT CONTROLS, WHEN NEEDED, SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED TO RESTRICT THE RATE OF DRAINAGE FROM THE PLATTED AREA TO THE RATE OF DRAINAGE OF THE LAND IN ITS NATURAL STATE. WHEN A DEVELOPMENT SHALL HAVE SEVERAL SECTIONS, STORM WATER MANAGEMENT CONTROLS FOR THE ULTIMATE DEVELOPED AREA SHALL BE CONSTRUCTED IF NOT LOCATED IN THE FIRST PLATTED SECTION. STORM WATER MANAGEMENT CONTROLS ARE TO BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER USING A BASIS OF A 2, 10, AND 100-YEAR STORM. EXCEPTIONS MAY BE ALLOWED WHEN THE OWNER CAN DEMONSTRATE THAT DOWNSTREAM PROPERTY SHALL NOT BE ADVERSELY AFFECTED.
- DRAINAGE CALCULATIONS SHALL BE MADE USING THE EDITION OF THE CITY OF AUSTIN'S DRAINAGE CRITERIA MANUAL IN EFFECT AS OF THE DATE OF THESE REGULATIONS OR OTHER METHODS SATISFACTORY TO THE COUNTY ENGINEER. ALL DATA AND CALCULATIONS MUST BE PRESENTED TO THE COUNTY ENGINEER AS PART OF THE CONSTRUCTION PLANS. THE FOLLOWING REQUIREMENTS SHALL BE INCORPORATED INTO THE DESIGN:
  - BRIDGES AND CROSS DRAINAGE STRUCTURES FOR ARTERIAL AND COLLECTOR ROADS SHALL BE DESIGNED TO CONVEY THE 25-YEAR STORM WITHOUT OVERTOPPING THE FACILITY.
  - BRIDGES AND CROSS DRAINAGE STRUCTURES FOR LOCAL ROADS SHALL BE DESIGNED TO CONVEY THE 10-YEAR STORM WITHOUT OVERTOPPING THE FACILITY.
  - ALL LONGITUDINAL DRAINAGE STRUCTURES SHALL BE DESIGNED TO CONVEY THE 10-YEAR STORM.
  - ON CURB AND GUTTER ROADWAYS, THE ROADWAY SHALL BE DESIGNED SO THAT NO MORE THAN ONE HALF OF ONE TRAVEL LANE SHALL BE INUNDATED BY THE 10 YEAR STORM.
- ALL DRAINAGE STRUCTURES AND APPURTENANCES SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. A PROFILE SHALL BE SHOWN IN THE CONSTRUCTION PLANS FOR ALL DRAINAGE STRUCTURES. EACH PROFILE SHALL SHOW THE DESIGN FLOW, VELOCITY, INVERT ELEVATIONS, AND THE HYDRAULIC GRADE LINE.
- DRIVEWAY CULVERTS SHALL HAVE A MINIMUM INTERIOR DIAMETER OF 18" OR EQUAL AND A MINIMUM LENGTH OF 22 FEET, AND SHALL INCLUDE A CONCRETE APRON SAFETY TREATMENT IN ACCORDANCE WITH CITY OF AUSTIN STANDARD DETAIL 5085-20, "STORMDRAIN OUTFALL PROTECTION CULVERT UNDER ROADWAY/RAILINE". LARGER OR LONGER CULVERTS SHALL BE INSTALLED IF NECESSARY TO ACCOMMODATE DRAINAGE BASED UPON A 10-YEAR FLOW FREQUENCY. ALL DRIVEWAY CULVERTS SHALL HAVE SAFETY END TREATMENTS WITH CONCRETE APRONS.
- AT SOME POINT WITHIN THE FIRST TEN FEET FROM THE EDGE OF THE ROADWAY GUTTER, THE ENTIRE WIDTH OF A DRIVEWAY SHALL HAVE THE SAME OR GREATER ELEVATION AS THE TOP OF THE CURB AT THE EDGE OF THE ROADWAY.
- MAINTENANCE RESPONSIBILITY FOR DRAINAGE WILL NOT TO BE ACCEPTED BY THE COUNTY OTHER THAN THAT ACCEPTED IN CONNECTION WITH DRAINING OR PROTECTING THE ROAD SYSTEM. MAINTENANCE RESPONSIBILITY FOR STORM WATER MANAGEMENT CONTROLS WILL REMAIN WITH THE OWNER.
- EASEMENTS SHALL BE PROVIDED, WHERE NECESSARY, FOR ALL DRAINAGE COURSES IN AND ACROSS PROPERTY TO BE PLATTED. THE LOCATION AND WIDTH SHALL BE SHOWN ON THE PLAT AND MARKED "DRAINAGE EASEMENT" OR "DRAINAGE AND UNDERGROUND UTILITIES EASEMENT". IN GENERAL, A "DRAINAGE EASEMENT" SHALL BE A MINIMUM OF 20 FEET IN WIDTH AND A "DRAINAGE AND UNDERGROUND UTILITIES EASEMENT" SHALL BE A MINIMUM OF 30 FEET IN WIDTH.
- ALL ROADSIDE DITCHES SHALL HAVE A MINIMUM DEPTH, AS MEASURED FROM THE EDGE OF THE ROAD PAVEMENT, EQUAL TO THE DIAMETER OF THE DRIVEWAY CULVERT PIPE(S) PLUS NINE INCHES, AND A BOTTOM WIDTH EQUAL TO THE DIAMETER OF THE DRIVEWAY CULVERT PIPE(S). THE SIDE SLOPES OF THE DITCHES ARE TO BE 3:1 OR FLATTER.
- ROADSIDE DITCHES MAY BE ELIMINATED WITHIN A RURAL SUBDIVISION PROVIDED THAT THE ROAD HAS 18-INCH RIBBON CURBS, THE ROADWAY SURFACE HAS AN ADEQUATE CROSS SLOPE, AND THE OVERALL DRAINAGE PATTERNS THROUGHOUT THE SUBDIVISION REMAIN AS IN AN UNDEVELOPED STATE.



E. SANTA RITA BOULEVARD  
(+38.03 TO END)  
N.T.S.



ALL OTHER LOCAL STREETS  
(0+00 TO END)  
N.T.S.

DESIGNED BY:  
SPC

DRAFTED BY:  
GFL

DATE

REVISION

Carlson, Brigrance & Doering, Inc.  
Civil Engineering ♦ Surveying  
FIRM ID #1E3791  
Main Office: 5501 West Williams Canyon Dr., Austin, Texas 78750  
North Office: 12129 RR 630 N. Suite 400, Austin, Texas 78750  
Fax No. (512) 280-5160

GENERAL NOTES (1 of 2)

JOB NAME: SADDLEBACK AT SANTA RITA RANCH  
PHASE 1 SECTION 3

SHEET NAME:  
PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS

STATE OF TEXAS  
STEVEN P. CATES  
93648  
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGRANCE & DOERING, INC.  
ID# F3791  
12-1-2023

DATE: OCT 2023

JOB NUMBER: 5413

SHEET: 3 OF 73

SHEET NO.: 3

FILE PATH: J:\ACD\0413\0413-GENERAL NOTES.dwg - Dec 01, 2023 - 1:10pm



**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

**WATER POLLUTION ABATEMENT PLAN**

**GENERAL CONSTRUCTION NOTES**

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**EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER**

THE FOLLOWING LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE, DAILY AND DO NOT CONSTITUTE AN APPROVAL, OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 40, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDED FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTWITHSTANDING THE FOLLOWING LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE REGULATIONS, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONVICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATIONS ARE SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.11 RELYING TO ENFORCEMENT. SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND SANCTIONS. THE FOLLOWING LISTED "CONSTRUCTION NOTES" DO NOT IN ANY MANNER REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 40, TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. 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.
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 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.
3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CHAQUE, 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 REGIONAL OFFICE HAS 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 (EAS) 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 WHEN IT OCCUPIES 50% OF THE BASINS DESIGN CAPACITY.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER EROSION CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER ON-SITE OR OFF-SITE LOCATION, THE APPLICANT MUST OBTAIN APPROVAL 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 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.
11. 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.
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 DIVERSIONARY 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.

AUSTIN REGIONAL OFFICE

12100 PARK 35 CIRCLE, BUILDING A

AUSTIN, TEXAS 78755-1008

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SAN ANTONIO REGIONAL OFFICE

14250 JURISON ROAD

SAN ANTONIO, TEXAS 78233-4480

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**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**  
**ORGANIZED SEWAGE COLLECTION SYSTEM**  
**GENERAL CONSTRUCTION NOTES**

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**EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER**

THE FOLLOWING LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR. NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWING DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE, CHAPTERS 213 AND 217 AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, THINGS CONTAINED IN THE FOLLOWING TCEQ REGULATIONS RESTRICT THE POWERS OF THE EXECUTIVE DIRECTOR, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR ORTHAL ACTIVITIES THAT RELAY ON THE BEST AVAILABLE TECHNOLOGY OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING CONSTRUCTION NOTES IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TEXAS ADMINISTRATIVE CODE, CHAPTERS 213 AND 217 ON ANY OTHER APPLICABLE TCEQ REGULATION AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE EXECUTIVE DIRECTORS APPROVAL, WHETHER OR NOT IN CONNECTION OF ANY "CONSTRUCTION NOTES" IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDINANCES, AND PENALTIES AS PROVIDED UNDER TITLE 30, TEXAS ADMINISTRATIVE CODE § 213.013 IN RELATION TO ENFORCEMENT. SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND PROSECUTION. THE FOLLOWING LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE EXECUTIVE DIRECTOR TO ANY PART OF TITLE 30, TEXAS ADMINISTRATIVE CODE, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.03, THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.
3. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING 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.
4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTER OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
5. 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 MANUFACTURERS SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE, OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM MINUTION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.
8. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND REDON.
9. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSIONS RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET 58 - 68 OF 73.

IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

10. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (11'), WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53 (PPE DESIGN) AND 30 TAC §290.44(c) (WATER DISTRIBUTION).
11. WHERE SEWERS LINES DEVIAE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER. THERE SHALL BE NO CURVATURE OF SANITARY SEWER LINE PIPES.

IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: THERE SHALL BE NO FLEXURE OF SANITARY SEWER LINE PIPES.

SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES. IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET OF 73 (FOR POTENTIAL FUTURE LATERALS) (NOT APPLICABLE).

THE PRIVATE SEWAGE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET 73 OF 73, AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET 73 OF 73.

- 13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARD SPECIFICATION OF TEXAS HIGHWAY DEPARTMENT. THE BEDDING MUST COMPLY WITH THE STANDARD SPECIFICATION OF TEXAS HIGHWAY DEPARTMENT.

(C) SINCE A MAXIMUM OF 10% LOSS OF PRESSURE DURING THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

PIPE DIAMETER (INCHES)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.8550
8	454	298	1.5200
10	567	239	2.3740
12	680	199	3.4190
15	850	159	5.3420
18	1020	133	7.6930
21	1190	114	10.4710
24	1360	100	13.6760
30	1700	80	21.3690
33	1870	72	25.8560

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME. IF ANY PRESSURE LOSS OR LEAKS HAVE OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.

(E) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTALLED FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.

(F) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST:

(A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 20 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.

(B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.

(C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.

(D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.

(E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED, AN OWNER SHALL REPEAT A TEST FOR A PIPE FOLLOWING A REMEDIATION ACTION.

(F) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

- (1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDEREL.
- (A) MANDEREL SIZING:
  - (i) A RIGID MANDEREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTM, AMERICAN WATER WORKS ASSOCIATION, UN-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
  - (ii) IF A MANDEREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDEREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF THE PIPE. IN THIS CASE, THE ID OF THE PIPE FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDEREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
  - (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
- (B) MANDEREL DESIGN:
  - (i) A RIGID MANDEREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL, THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
  - (ii) A MANDEREL MUST HAVE NINE OR MORE OD NUMBER OF RUNNERS OR LEGS.
  - (iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 15% OF THE INSIDE DIAMETER OF A PIPE.
  - (iv) EACH SIZE MANDEREL MUST HAVE A SEPARATE PROVING RIG.
- (C) METHOD OPTIONS:
  - (i) AN ADJUSTABLE OR FLEXIBLE MANDEREL IS PROHIBITED.
  - (ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
  - (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDEREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
- (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
  - (i) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
  - (ii) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
  - (iii) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).
  - (iv) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

1. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

(A) ALL MANHOLES MUST BE PLACED IN A SEQUENCE TO TEST A LEAKAGE TEST.

(B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.

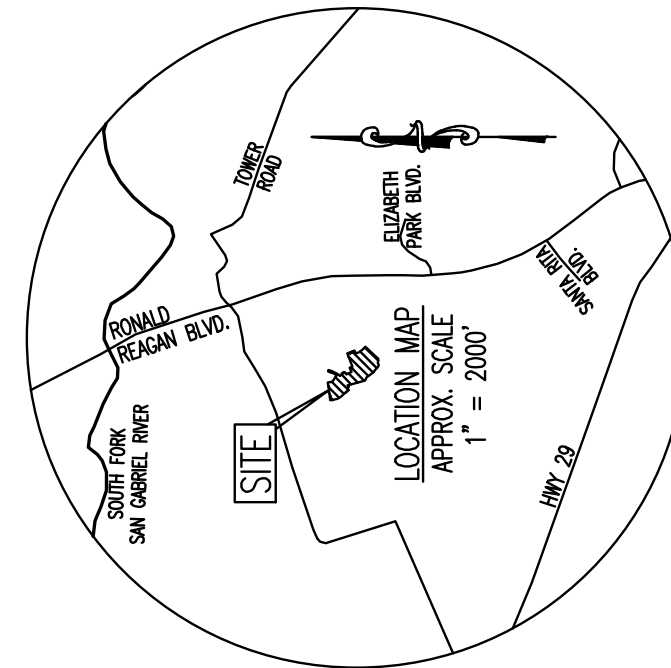
- (1) HYDROSTATIC TESTING:
  - (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHOD IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
  - (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
  - (C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
- (2) VACUUM TESTING:
  - (A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
  - (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
  - (C) STUB-OUTS, MANHOLE BOOT, AND PIPE INCHES MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
  - (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LBS TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
  - (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
  - (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
  - (G) A TEST SHOULD NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
  - (H) A MANHOLE PASSES THE TEST IF AFTER 20 MINUTES TO 2 HOURS WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

2. ALL PRIVATE SEWER LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(ii), AFTER INSTALLATION OF AND, PRO

[illegible]



**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3  
FINAL PLAT**



TOTAL ACREAGE: 37.018 ACRES  
SURVEY: B. MANLOVE SURVEY,  
ABSTRACT NO. 417

DATE: OCTOBER 24, 2023  
OWNER AND DEVELOPER:  
PULTE HOMES OF TEXAS, L.P.  
9401 AMBERGLEN BLVD.,  
BLDG. I, SUITE 150  
AUSTIN, TEXAS 78729  
PHONE: (512) 532-3300

ENGINEER & SURVEYOR:  
CARLSON, BRIGANCE & DOERING, INC.  
5501 WEST WILLIAM CANNON DRIVE  
AUSTIN, TEXAS 78749  
(512) 280-5160 PHONE

TOTAL BLOCKS	10
<hr/>	
TOTAL LOTS	158
NO. OF SINGLE FAMILY LOTS:	154
NO. OF P.U.E. & L.S.E. LOTS:	3
NO. OF D.E., P.U.E. & L.S.E. LOTS:	1

BASIS OF BEARINGS - TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE (4203)  
ELEVATION DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)

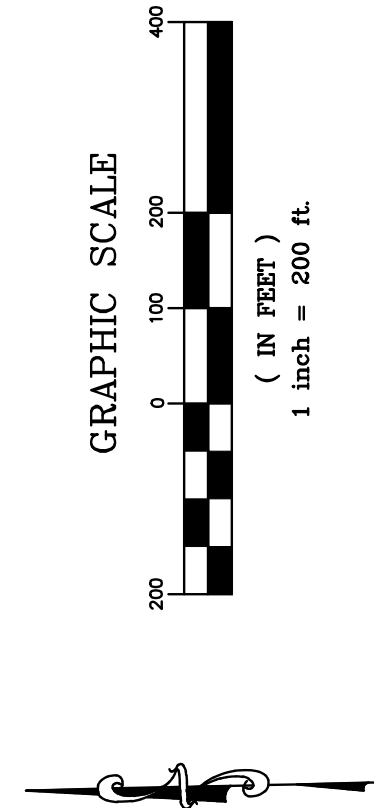
F.E.M.A. MAP NO. 48491C0275E  
WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS.  
DATED: SEPTEMBER 26, 2008

**BENCHMARK:**

TBM-1:  
MAG NAIL SET WITH SHINER, NORTHEAST EDGE OF ASPHALT  
OF RONALD REAGAN BOULEVARD.  
N: 10219364.89  
E: 307988.766  
ELEV: 900.80' (NAVD88)

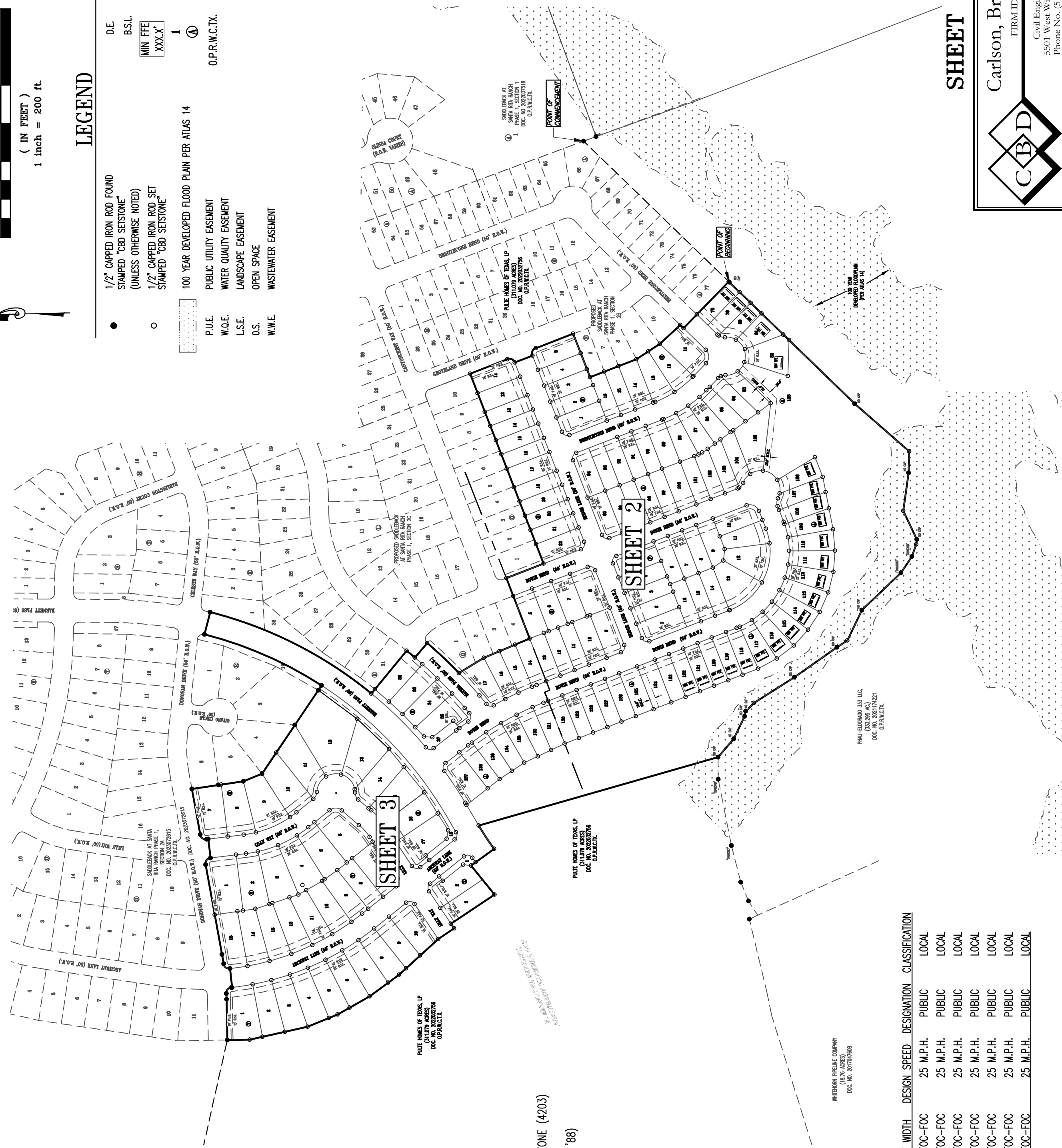
TBM-2:  
MAC NAIL SET WITH SHINER, NORTHEAST EDGE OF ASPHALT  
OF RONALD REAGAN BOULEVARD.  
N: 10219838.47  
E: 3079718.46  
ELEV: 902.78' (NAVOD88)

ROAD TABLE				DESIGN SPEED		DESIGNATION		CLASSIFICATION	
STREET NAMES	LINEAR FOOTAGE	R.O.W. WIDTH	PAVEMENT WIDTH						
BOWNE BEND	2,003'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
BARNETT PASS	978'	60' R.O.W.	40' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
LILLY WAY	844'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
ARCHWAY LANE	746'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
HOODE LANE	834'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
BRISTOLCANE BEND	643'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
MATERA PASS	253'	50' R.O.W.	33' FOC-FOC	25 M.P.H.		PUBLIC		LOCAL	
TOTAL	6,301'								



## LEGEND

- |   |                                                     |                                 |                                                       |
|---|-----------------------------------------------------|---------------------------------|-------------------------------------------------------|
| ● | 1/2" CARPED ROW ROD FOUND<br>STAMPED "380 SESTIONE" | D.E.                            | DRAINAGE EASEMENT                                     |
|   |                                                     | B.S.L.                          | BUILDING SETBACK LINE                                 |
| ○ | 1/2" CARPED ROW ROD SET<br>STAMPED "380 SESTIONE"   | MIN FLOOR<br>ELEVATION (TWO 18) | MINIMUM FINISHED FLOOR<br>ELEVATION (TWO 18)          |
|   |                                                     | LOT NUMBER                      | BLOCK DESIGNATION                                     |
|   |                                                     | 1                               |                                                       |
|   |                                                     | Ⓐ                               |                                                       |
|   |                                                     | O.P.W.C.T.Y.                    | OFFICIAL PUBLIC RECORDS OF<br>WILLAMSON COUNTY, TEXAS |



SHEET NO. 1 OF 6

**Carlson, Brigrance & Doering, Inc.**  
FIRM ID #E3791 ♦ REG. # 10024900  
Civil Engineering ♦ Surveying  
5501 West William Cannon ♦ Austin, Texas 78749  
Phone No. (512) 280-5160 ♦ Fax No. (512) 280-5165

J:\AC3D\5413\Survey\PLAT - SADDLEBACK SRR 1-3

**SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3  
FINAL PLAT**



## LEGEND

- |   | 1/0" CAPED IRON ROD FOUND<br>STAMPED "CB STONE" | DE<br>W.W.E. | FRANCE EASEMENT                           |
|---|-------------------------------------------------|--------------|-------------------------------------------|
| ● |                                                 | B.S.L.       | WINTER EASEMENT                           |
| ○ | 1/0" CAPED IRON ROD SET<br>STAMPED "CB STONE"   | MINT F.F.L.  | SETBACK LINE                              |
| □ | 100 YARDS DEVELOPED FLOOD PLAIN PER ATLAS 14    | XXXXX        | MINIMUM FINISHED ROAD ELEVATION (MAD 198) |
| ■ |                                                 | 1            | LOT NUMBER                                |
| ▲ |                                                 | ①            | BLOCK DESIGNATION                         |
| ▲ | PUBLIC UTILITY EASEMENT                         |              |                                           |
| ▲ | WATER UTILITY EASEMENT                          |              |                                           |
| ▲ | LANDSCAPE EASEMENT                              |              |                                           |
| ▲ | OPEN SPACE                                      |              |                                           |
- OFFICIAL PUBLIC RECORDS OF  
WILLIAMSON COUNTY, TEXAS



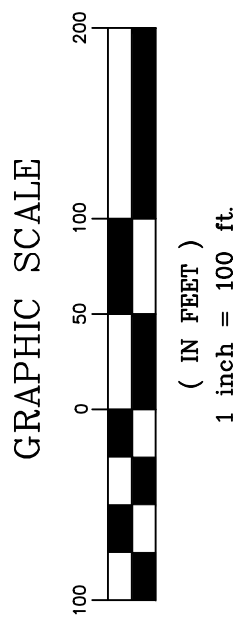
SHEET NO. 2 OF 6

**Carlson, Brigrance & Doering, Inc.**  
FIRM ID #F3791 ♦ REG. # 10024900  
Civil Engineering ♦ Surveying  
5501 West William Cannon ♦ Austin, Texas 78749  
Phone No. (512) 280-5160 ♦ Fax No. (512) 280-5165

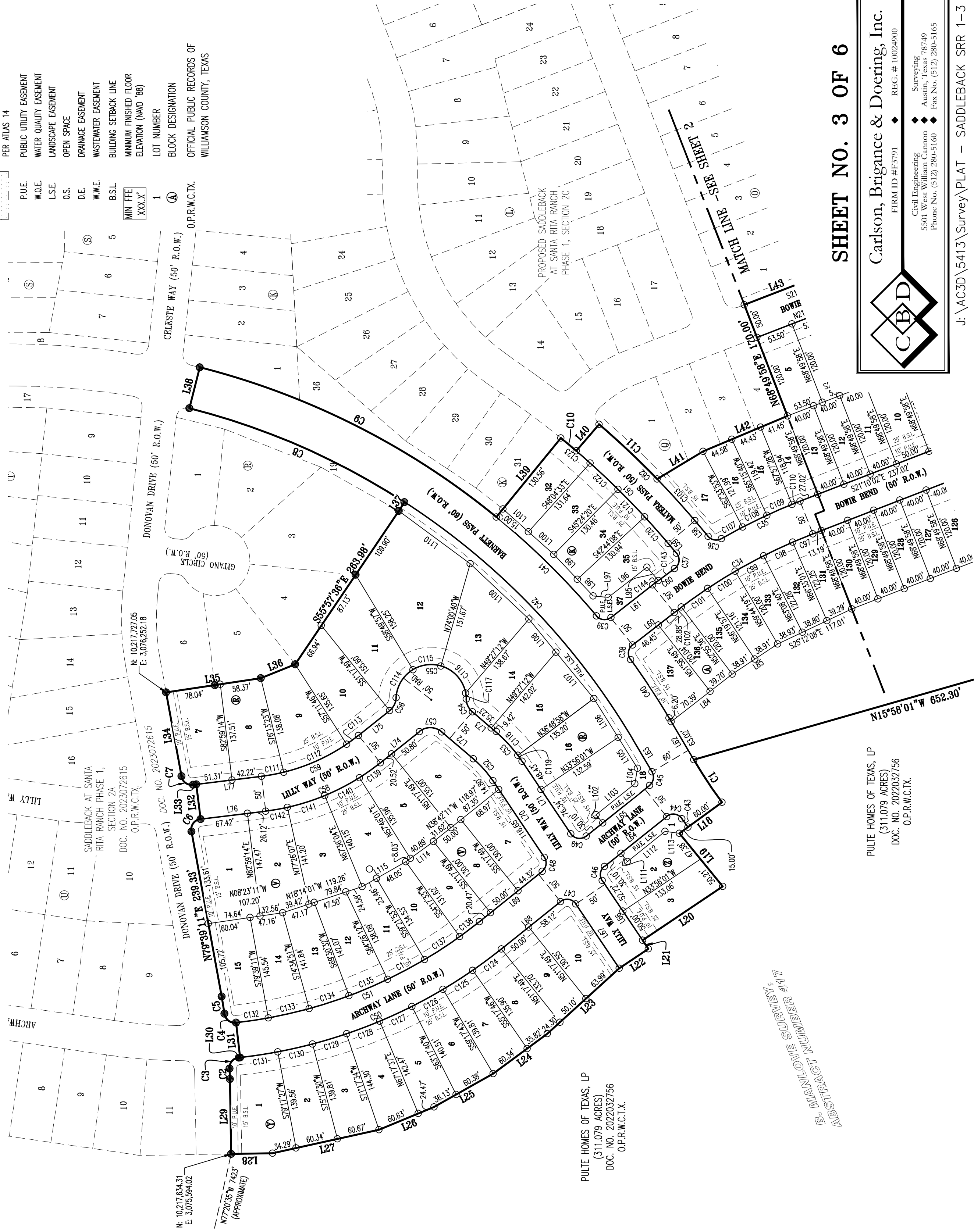
J:\AC3D\5413\Survey\PLAT - SADDLEBACK SRR 1-3



SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3  
FINAL PLAT



- LEGEND**
- 1/2" CAPPED ROW ROW FOUND STAMPED "200 SETBACK" (UNLESS OTHERWISE NOTED)
  - 1/2" CAPPED ROW ROW SET STAMPED "200 SETBACK"
  - 100 YEAR DEVELOPED FLOOD PLAN FEE ATLAS 14
  - P.U.E. PUBLIC UTILITY EASEMENT
  - W.Q.E. WATER QUALITY EASEMENT
  - L.S.E. LANDSCAPE EASEMENT
  - O.S. OPEN SPACE
  - D.E. DRAINAGE EASEMENT
  - W.W.E. WASTEWATER EASEMENT
  - B.S.L. BUILDING SETBACK LINE
  - M.U.F. MINIMUM FINISHED FLOOR ELEVATION (NAVD 88)
  - MIN FEE XXX.X'
  - LOT NUMBER
  - BLOCK DESIGNATION
  - OFFICIAL PUBLIC RECORDS OF WILLAMSON COUNTY, TEXAS



SHEET NO. 3 OF 6

**Carlson, Brigrance & Doering, Inc.**  
FIRM ID #FF391 REG. # 1002400  
Civil Engineering  
5501 West William Cannon  
Austin, Texas 78749  
Phone No. (512) 280-5160 Fax No. (512) 280-5165

J:\AC3D\5413\Survey\PLAT - SADDLEBACK SRR 1-3

SADDLEBACK AT SANTA RITA RANCH PHASE 1, SECTION 3  
FINAL PLAT

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C1	72.90	770.00	S85°55'05"W	72.87
C2	15.14	725.00	N88°24'32"E	15.13
C3	22.49	15.00	S89°40'42"E	20.44
C4	23.04	15.00	N37°58'22"E	20.84
C5	24.80	725.00	N80°27'56"E	24.80
C6	24.43	15.00	S35°49'48"E	21.82
C7	22.65	15.00	N87°19'17"E	21.58
C8	336.04	100.00	N23°55'01"E	334.56
C9	472.35	1060.00	S28°47'47"W	473.54
C10	28.51	1175.00	S39°55'57"W	28.50
C11	113.94	1225.00	S47°16'31"W	113.90
C12	23.56	15.00	S27°49'58"W	21.21
C13	23.56	15.00	S66°10'22"E	21.21
C14	21.03	25.00	S20°05'59"W	20.41
C15	162.65	50.00	S89°06'41"W	99.85
C16	21.56	15.00	N31°47'38"W	20.41
C17	39.27	25.00	S89°06'41"W	35.36
C18	146.23	325.00	N33°17'40"W	139.14
C19	118.65	275.00	N33°17'40"W	117.74
C20	23.56	15.00	N86°10'02"W	21.21
C21	23.56	15.00	S27°49'58"W	21.21
C22	23.56	15.00	S27°49'58"W	21.21
C23	23.56	15.00	S66°10'22"E	21.21
C24	23.56	15.00	S66°10'22"E	21.21
C25	23.56	15.00	S66°10'22"E	21.21

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C26	21.03	25.00	S45°15'43"E	20.41
C27	162.65	50.00	S27°49'58"W	99.85
C28	21.03	25.00	N87°04'20"W	20.41
C29	39.27	25.00	S27°49'58"W	35.36
C30	337.72	215.00	N66°10'02"W	334.06
C31	258.18	165.00	N66°10'02"W	233.35
C32	23.56	15.00	N23°55'01"E	21.21
C33	23.56	15.00	S66°10'22"E	21.21
C34	227.96	775.00	N28°55'37"W	227.13
C35	124.38	825.00	S25°29'10"E	124.26
C36	20.82	15.00	S89°06'41"W	19.19
C37	24.86	15.00	S66°10'22"E	22.11
C38	23.02	15.00	N87°36'58"W	20.83
C39	23.02	15.00	S89°06'41"W	20.83
C40	99.73	1060.00	S56°40'37"W	99.70
C41	200.96	1060.00	S43°37'56"W	200.67
C42	433.75	1030.00	N67°13'11"E	469.58
C43	14.73	830.00	N67°22'02"E	14.73
C44	24.50	15.00	N89°05'36"E	21.87
C45	21.47	15.00	S79°42'11"E	19.86
C46	22.31	15.00	N89°06'41"W	20.31
C47	24.81	15.00	N89°06'41"W	22.08
C48	22.31	15.00	S87°19'06"E	20.31
C49	24.81	15.00	S87°19'06"E	22.08
C50	408.75	725.00	N23°33'05"W	403.36

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C51	380.56	675.00	S22°30'05"E	375.54
C52	41.98	155.00	N68°42'32"E	41.86
C53	55.53	250.00	S48°42'32"E	55.36
C54	21.03	25.00	S64°30'30"E	20.41
C55	153.27	50.00	S50°55'19"W	99.93
C56	21.03	25.00	S62°47'52"E	20.41
C57	34.58	25.00	S62°47'52"E	31.89
C58	179.76	325.00	N25°12'08"W	177.47
C59	152.01	275.00	S22°47'28"E	150.17
C60	36.96	625.00	S36°00'17"E	36.96
C61	186.03	1175.00	N45°10'47"E	185.64
C62	193.85	1225.00	S47°10'47"W	193.75
C63	56.75	275.00	S79°44'31"E	56.65
C64	61.91	275.00	S38°28'22"E	61.78
C65	3.71	325.00	N27°49'41"W	3.71
C66	36.96	325.00	N25°12'08"W	36.88
C67	37.16	325.00	N31°50'10"W	37.14
C68	37.16	325.00	N38°09'16"W	37.14
C69	25.29	325.00	N43°59'34"W	25.28
C70	6.67	25.00	N55°72'31"W	6.62
C71	12.36	25.00	N15°14'42"W	12.23
C72	34.62	50.00	N17°22'03"W	33.93
C73	30.41	50.00	N64°47'35"W	29.94
C74	33.63	50.00	S68°54'54"W	33.00
C75	33.63	50.00	S49°58'38"W	33.00

Line Table		
Line #	Length	Direction
L1	2.14	S44°05'54"W
L2	188.82	S41°05'34"W
L3	56.67	N68°53'40"W
L4	106.68	N82°07'43"W
L5	82.79	S44°42'43"W
L6	13.21	N62°56'30"E
L7	33.73	N69°40'33"W
L8	51.09	N67°27'14"W
L9	141.67	N43°43'20"W
L10	86.32	N64°10'44"W
L11	33.04	S27°06'33"W
L12	136.30	N72°17'25"W
L13	125.80	N32°29'26"W
L14	30.26	N44°11'59"W
L15	14.73	N67°56'22"W
L16	65.25	N64°03'32"W
L17	63.48	N67°27'38"W
L18	75.00	N67°10'38"W
L19	91.59	S50°51'37"W
L20	137.62	N33°56'01"W
L21	14.62	S60°05'59"W
L22	122.15	S68°49'58"W
L23	138.39	N47°12'08"W
L24	96.16	S60°05'59"W
L25	96.51	N59°22'09"W

Line Table		
Line #	Length	Direction
L26	85.10	N22°25'32"W
L27	155.30	N12°28'09"W
L28	58.36	N07°59'59"W
L29	106.68	N65°53'19"W
L30	152	S06°20'32"E
L31	50.00	N82°56'01"E
L32	50.00	N82°59'14"E
L33	4.66	N07°01'49"W
L34	121.54	N72°59'11"E
L35	136.41	S06°30'46"E
L36	52.80	S27°06'32"E
L37	15.00	S73°03'22"E
L38	80.00	S75°44'58"E
L39	145.56	S50°44'40"E
L40	50.00	S49°21'31"E
L41	76.38	S31°14'45"E
L42	130.46	S27°46'52"E
L43	105.00	S21°10'02"E
L44	105.00	S21°10'02"E
L45	50.00	S21°10'02"E
L46	105.00	S21°10'02"E
L47	122.15	S68°49'58"W
L48	130.36	S21°10'02"E
L49	73.73	S22°28'02"E
L50	72.63	S42°38'16"E

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C76	30.36	50.00	S18°18'54"W	29.89
C77	16.69	25.00	S10°03'02"W	16.38
C78	4.33	25.00	S39°06'44"W	4.33
C79	4.42	25.00	S09°14'13"E	4.42
C80	16.60	25.00	S50°19'54"E	16.30
C81	30.45	50.00	S51°54'39"E	29.98
C82	35.61	50.00	S10°03'43"E	34.86
C83	45.68	50.00	S27°45'17"W	44.29
C84	37.05	50.00	S80°06'44"W	36.21
C85	6.18	215.00	S66°59'22"W	6.18
C86	35.67	215.00	S75°15'34"W	35.63
C87	35.67	215.00	S84°19'12"W	35.63
C88	35.67	215.00	N83°37'11"W	35.63
C89	35.67	215.00	N83°37'11"W	35.63
C90	35.67	215.00	N83°37'11"W	35.63
C91	35.67	215.00	N83°37'11"W	35.63
C92	35.67	215.00	N83°37'11"W	35.63
C93	35.67	215.00	N83°37'11"W	35.63
C94	35.67	215.00	N83°37'11"W	35.63
C95	35.67	215.00	N83°37'11"W	35.63
C96	35.67	215.00	N83°37'11"W	35.63
C97	35.67	215.00	N83°37'11"W	35.63
C98	46.07	775.00	N20°09'10"W	46.06
C99	46.07	775.00	N20°09'10"W	46.06
C100	46.07	775.00	N20°09'10"W	46.06

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C101	46.07	775.00	N82°21'37"W	46.06
C102	12.80	775.00	N73°32'46"W	12.80
C103	80.01	1225.00	N47°50'40"E	80.00
C104	113.02	165.00	S49°42'30"E	110.82
C105	108.61	165.00	S79°55'18"E	104.76
C106	39.56	165.00	N79°42'03"E	39.46
C107	34.13	625.00	S83°17'13"E	34.12
C108	36.83	625.00	S82°05'13"E	36.82
C109	36.83	625.00	S82°05'13"E	36.82
C110	12.60	625.00	S71°36'17"E	12.60
C111	32.47	275.00	S102°41'41"E	32.45
C112	96.57	275.00	S49°42'42"E	96.04
C113	21.07	275.00	S83°07'29"E	21.07
C114	46.63	50.00	S90°01'48"E	46.24
C115	41.15	50.00	S07°52'21"E	40.00
C116	55.04	50.00	S27°12'37"W	52.30
C117	8.45	50.00	S83°53'46"W	8.44
C118	46.22	265.00	S45°15'55"W	45.12
C119	10.31	205.00	S87°17'38"E	10.31
C120	50.26	1175.00	N46°29'24"E	50.26
C121	54.76	1175.00	N46°29'24"E	54.75
C122	54.76	1175.00	N46°29'24"E	54.75
C123	54.76	1175.00	N46°29'24"E	54.75
C124	50.60	725.00	N84°42'12"W	50.59
C125	50.60	725.00	N24°41'15"W	50.59

Curve Table				
Curve #	Length	Radius	Chord Direction	DELTA
C126	50.60	725.00	N68°42'19"W	50.59
C127	50.60	725.00	N24°42'22"W	50.59
C128	50.60	725.00	N04°42'25"W	50.59
C129	50.60	725.00	N16°42'28"W	50.59
C130	50.60	725.00	N12°42'31"W	50.59
C131	54.53	725.00	N68°31'16"W	54.52
C132	46.50	675.00	S08°22'24"E	46.49
C133	59.75	675.00	S12°55'59"E	59.73
C134	59.75	675.00	S17°55'18"E	59.73
C135	59.75	675.00	S23°01'38"E	59.73
C136	59.75	675.00	S28°05'36"E	59.73
C137	59.75	675.00	S33°10'17"E	59.73
C138	35.28	675.00	S37°17'19"E	35.29
C139	36.70	325.00	N25°05'05"W	36.68
C140	55.78	325.00	N27°16'58"W	55.71
C141	55.78	325.00	N17°28'55"W	55.71
C142	31.48	325.00	N09°42'07"W	31.48
C143	28.77	825.00	N61°16'48"W	28.77
C144	10.78	767.62	N37°46'17"W	10.79

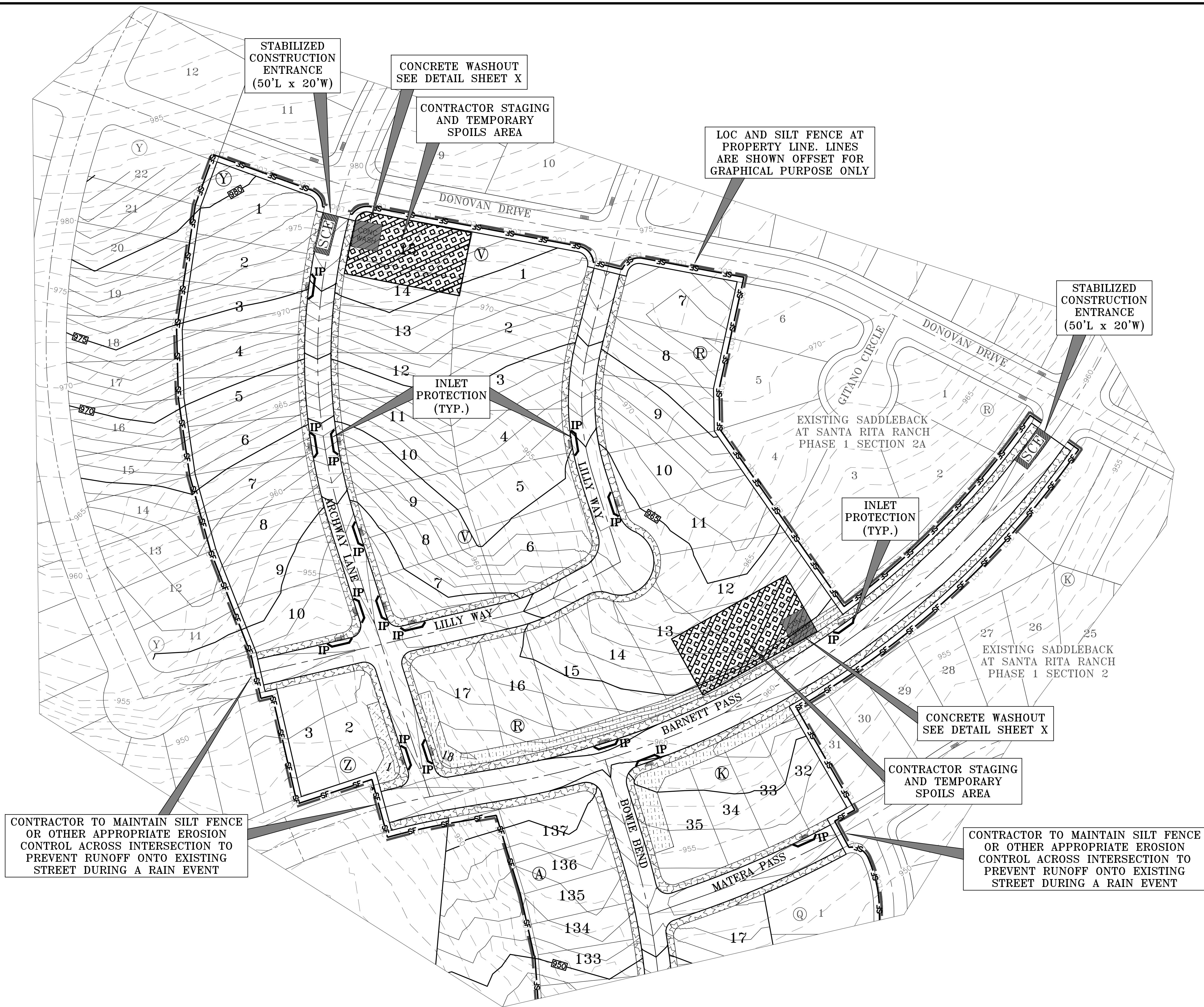
Line Table		
Line #	Length	Direction
L1004	22.41	S087°14'E
L1005	51.75	N07°58.41"E
L1006	65.58	N07°59.41"E
L1007	85.19	N65°43.42"E
L1008	60.96	N65°43.42"E
L1009	115.09	N43°20.59"E
L1010	128.68	N037°11"E
L1011	65.61	N0177.49"E
L1012	68.61	N38.62°17"W
L1013	20.63	N0759.22"E
L1014	48.92	N055.62°22"W
L1015	71.51	S39.41°15"E
L1016	96.46	N4553.19°W
L1017	119.73	N4553.19°W
L1018	120.11	N4553.19°W







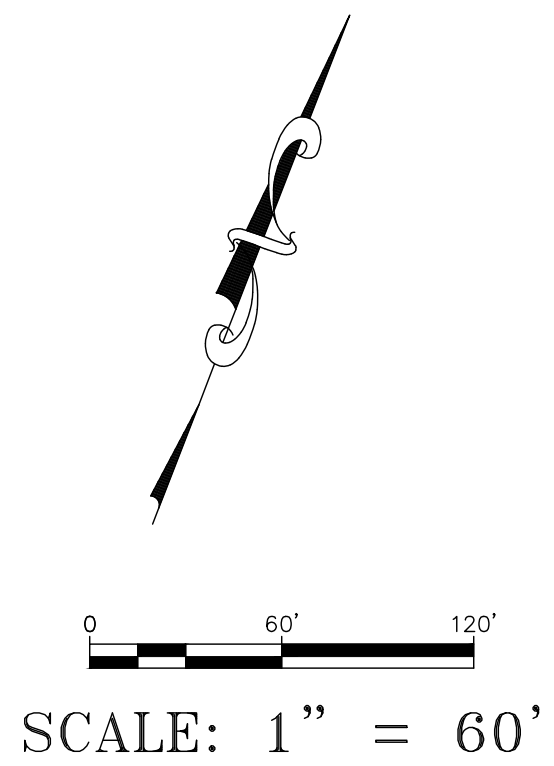
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**LEGEND**

- SF SILT FENCE
- JH SILT FENCE J-HOOK
- LOC LIMITS OF CONSTRUCTION
- IP INLET PROTECTION
- RB ROCK BERM
- SCE STABILIZED CONSTRUCTION ENTRANCE
- DB DIVERSION BERM
- ERM ROLLED EROSION CONTROL MATTING, SEEDING & TOPSOIL (PERMANENT)
- SEEDING & TOPSOIL (PERMANENT) FOR EASEMENTS, OPEN SPACE LOTS, AND VEGETATIVE FILTER STRIPS ON ALL SLOPES FLATTER THAN 5:1

\*ALL AREAS DISTURBED OUTSIDE OF THE SINGLE FAMILY LOTS ARE REQUIRED TO BE REVEGETATED BY THE CONTRACTOR



DESIGNED BY: SPC	DRAFTED BY: CFH
DATE	
REVISION	
<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering & Surveying FIRM ID #E3791 Main Office: 12129 RR (330) N. Ste. 600 5501 West Williams Canyon Dr. Austin, Texas 78750 Phone No. (512) 280-5160 Fax No. (512) 280-5165	
<b>CD</b>	
SHEET NAME: EROSION CONTROL PLAN (1 OF 2)	
JOB NAME: SADDLEBACK AT SANTA RITA RANCH	
PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS	
PHASE 1 SECTION 3	
DATE: OCT 2023	
JOB NUMBER: 5413	
SHEET: 8 OF 73	
SHEET NO.: 8	



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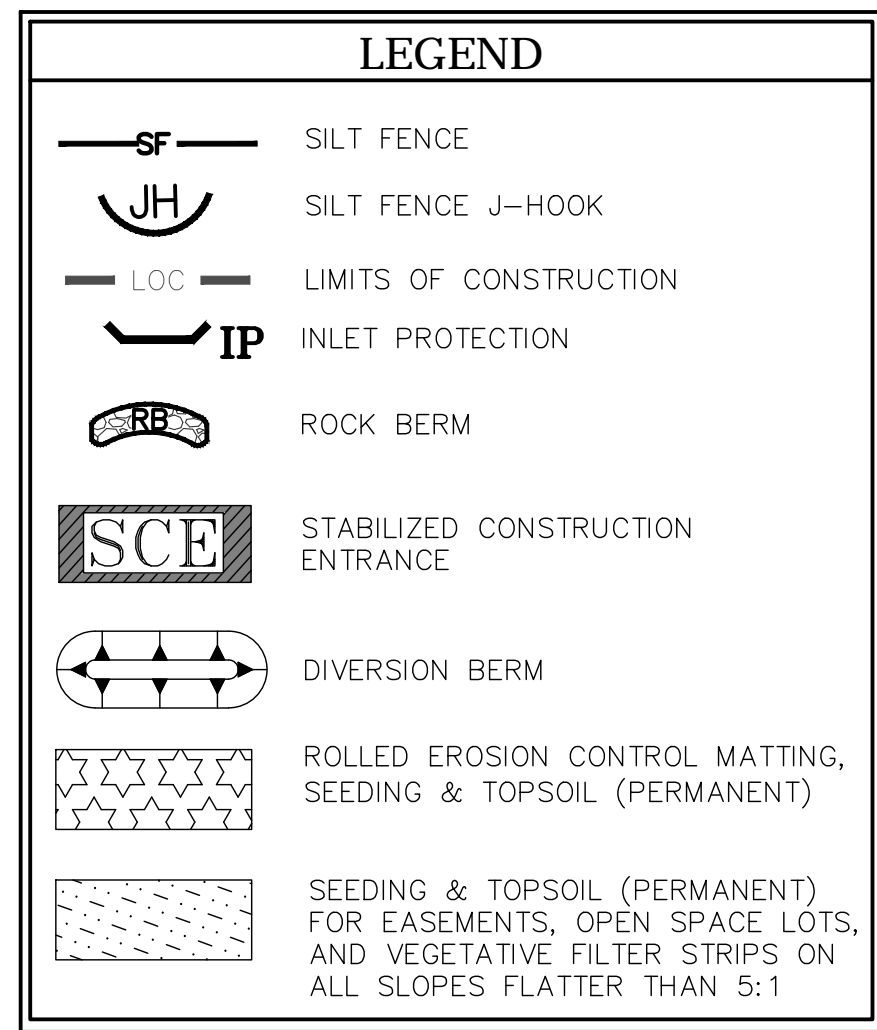
LOC AND SILT FENCE AT  
PROPERTY LINE. LINES  
ARE SHOWN OFFSET FOR  
GRAPHICAL PURPOSE ONLY

CONTRACTOR TO MAINTAIN SILT FENCE  
OR OTHER APPROPRIATE EROSION  
CONTROL ACROSS INTERSECTION TO  
PREVENT RUNOFF ONTO EXISTING  
STREET DURING A RAIN EVENT

LOC AND SILT FENCE AT  
PROPERTY LINE. LINES  
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\*ALL AREAS DISTURBED OUTSIDE OF  
THE SINGLE FAMILY LOTS ARE  
REQUIRED TO BE REVEGETATED BY  
THE CONTRACTOR

0 60' 120'  
SCALE: 1" = 60'

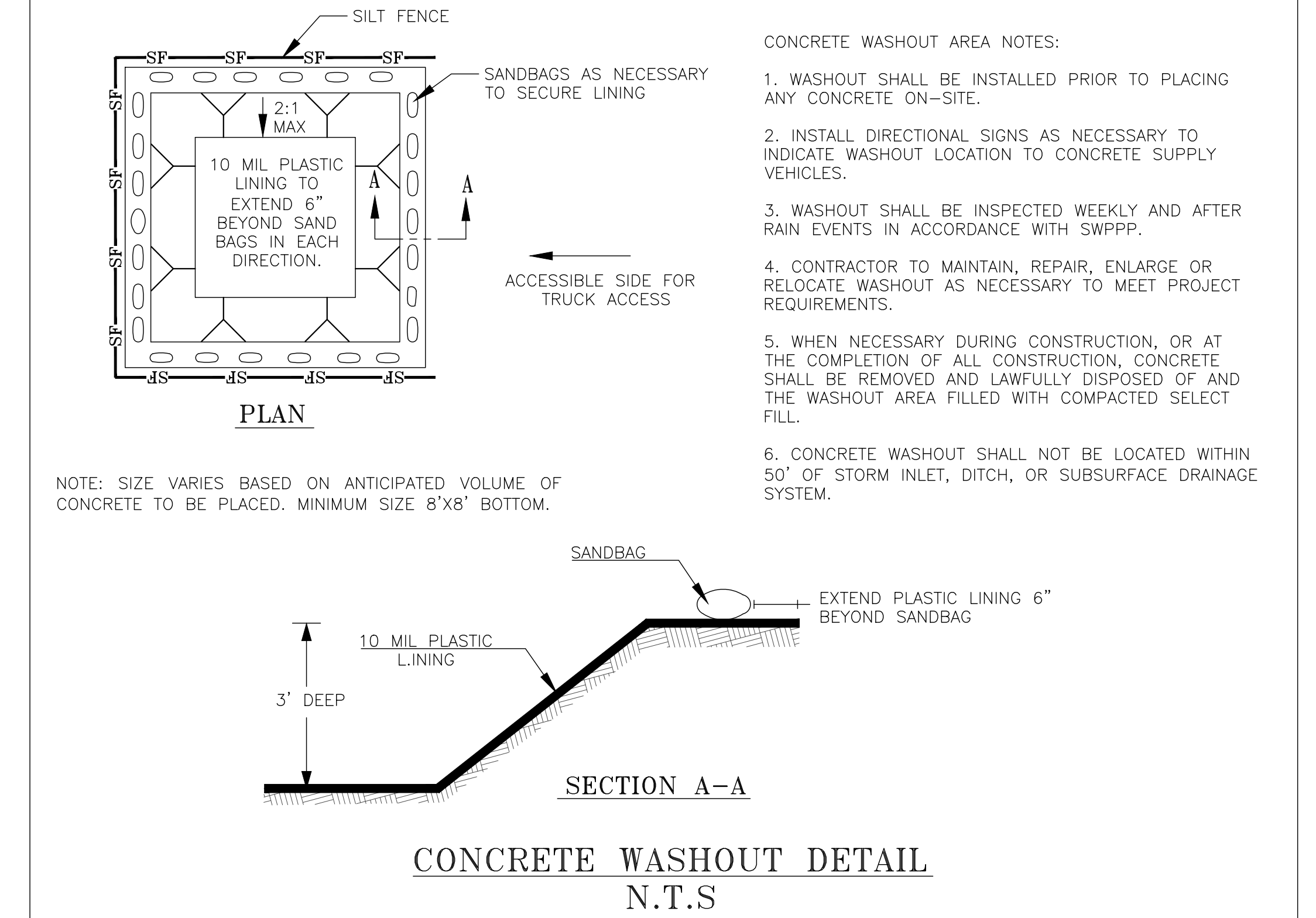
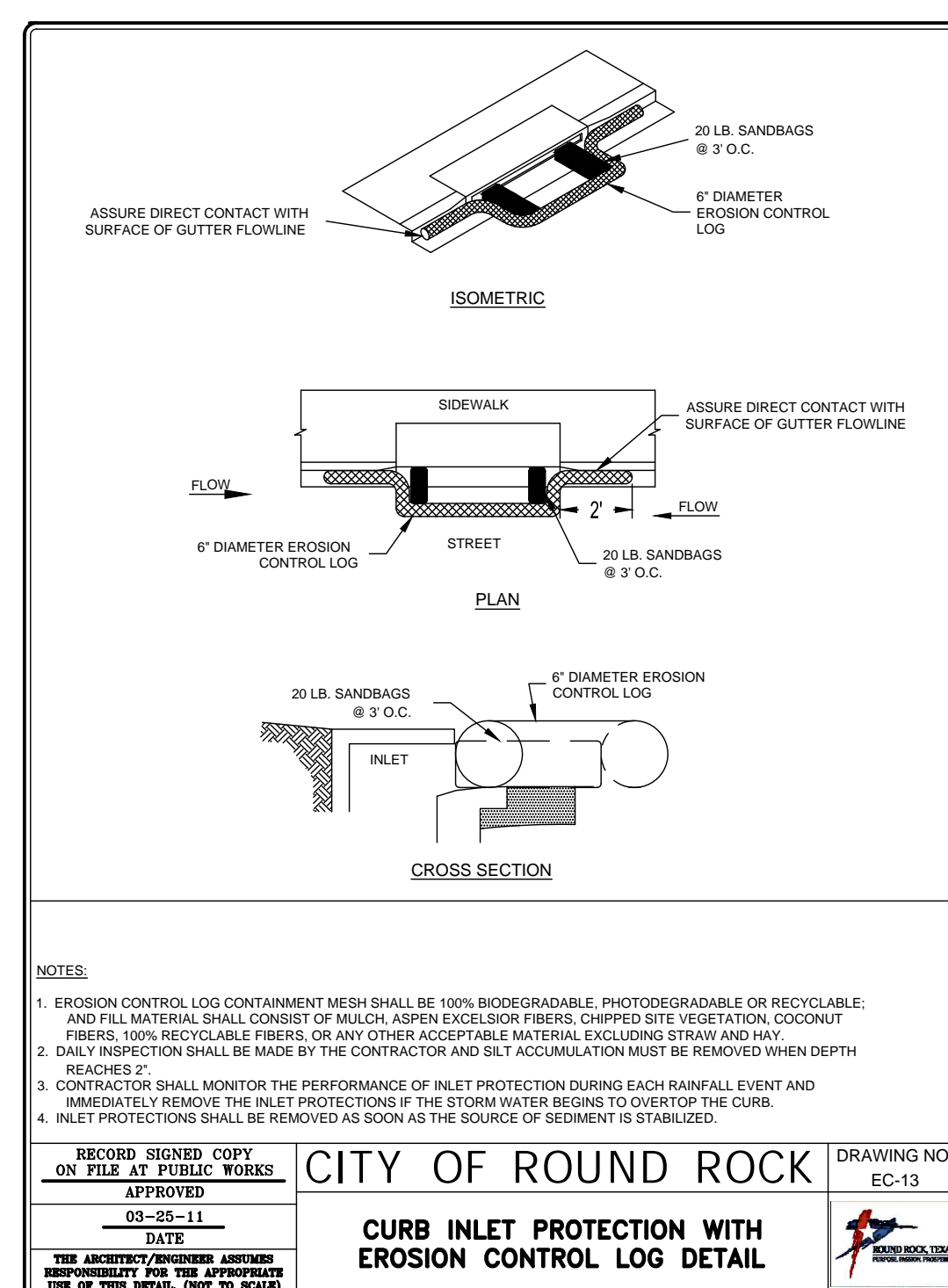
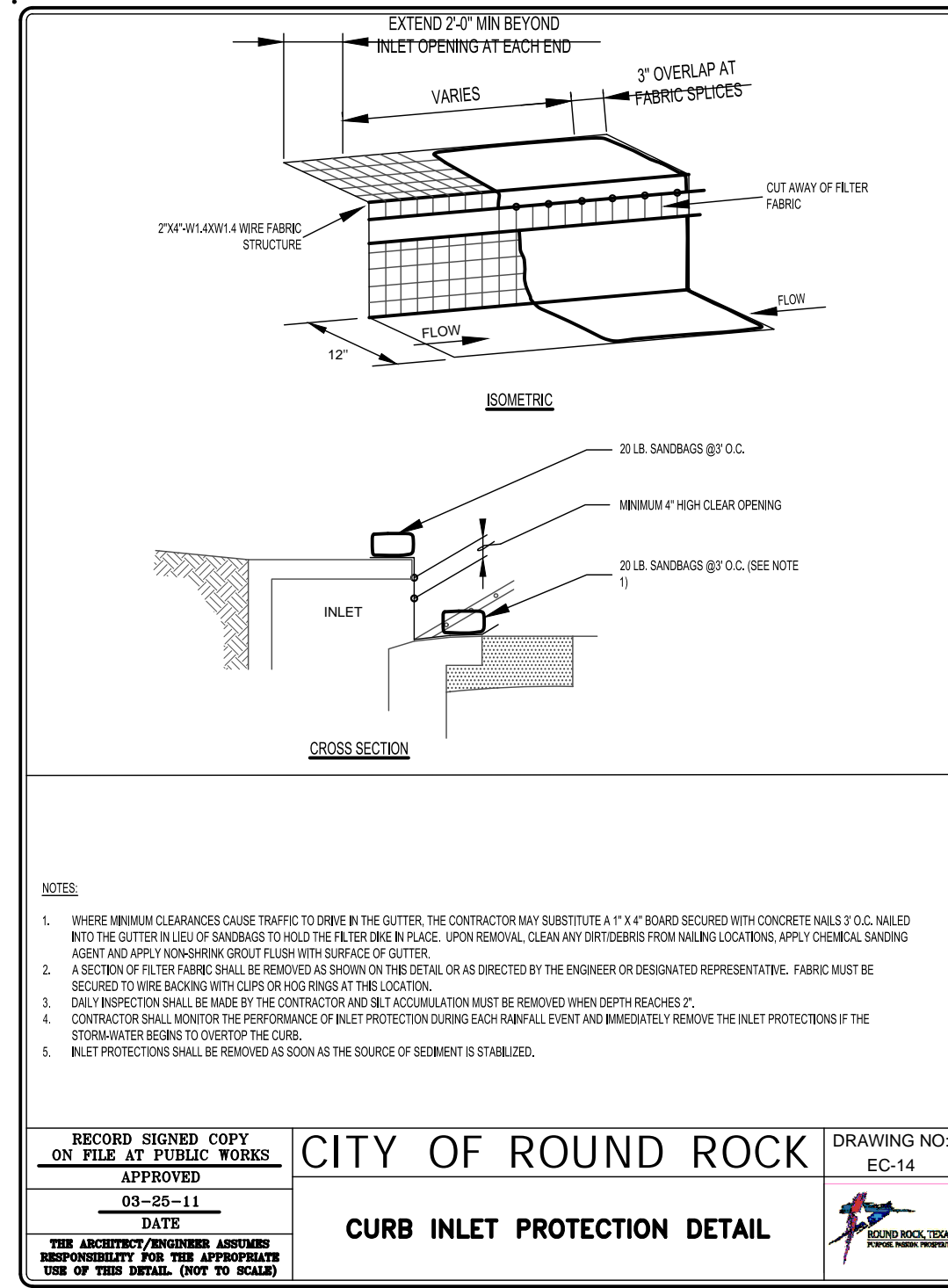
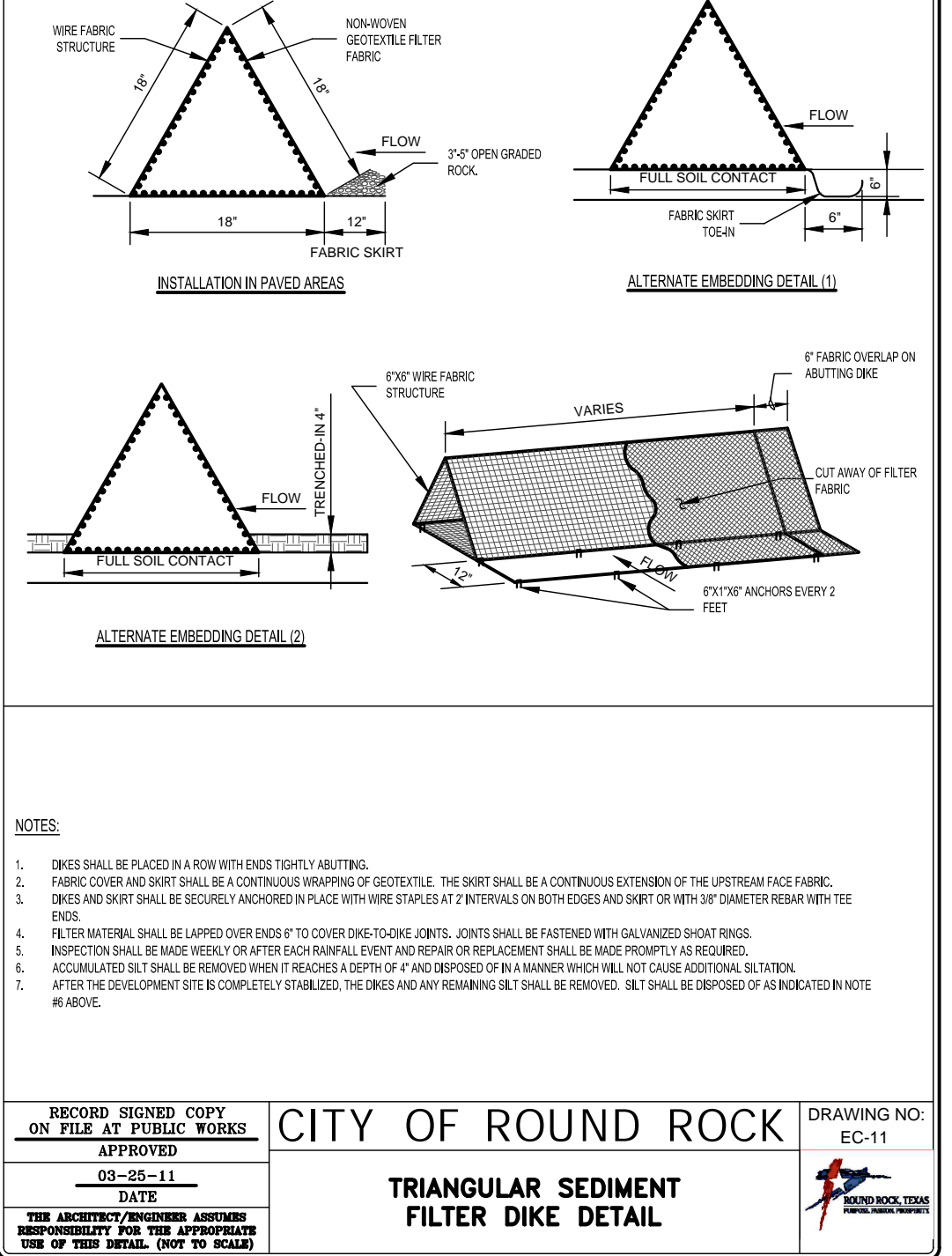
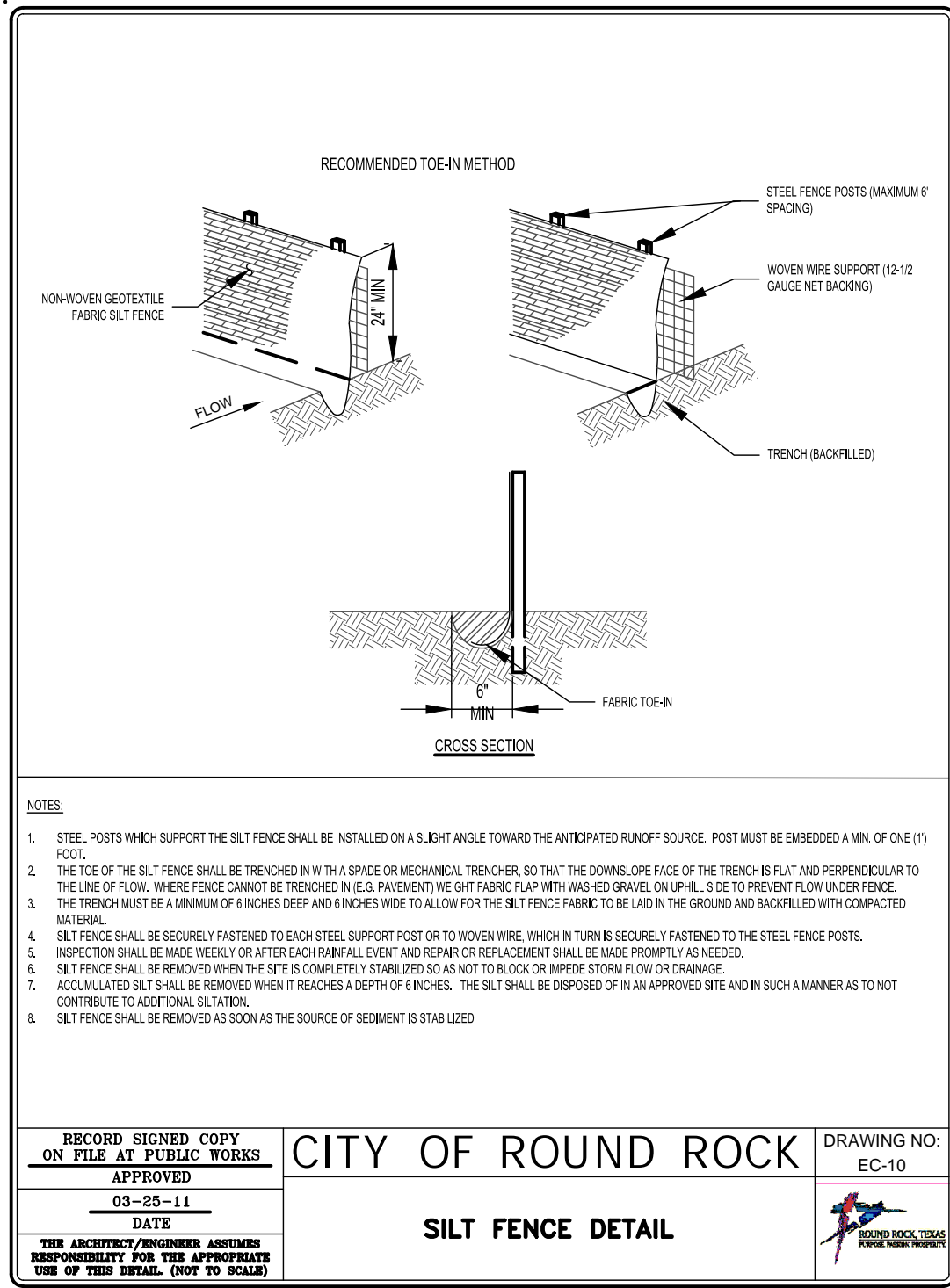
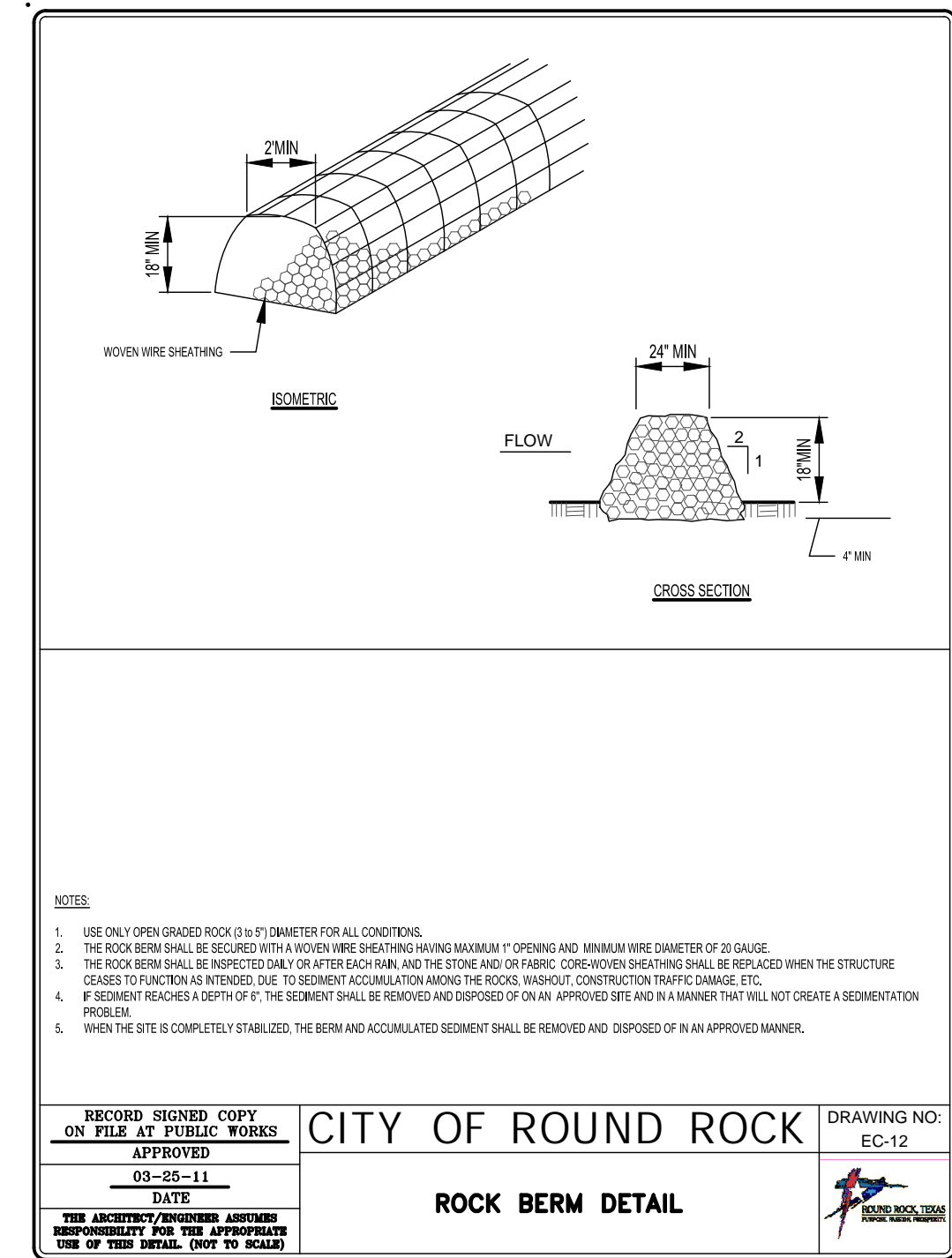
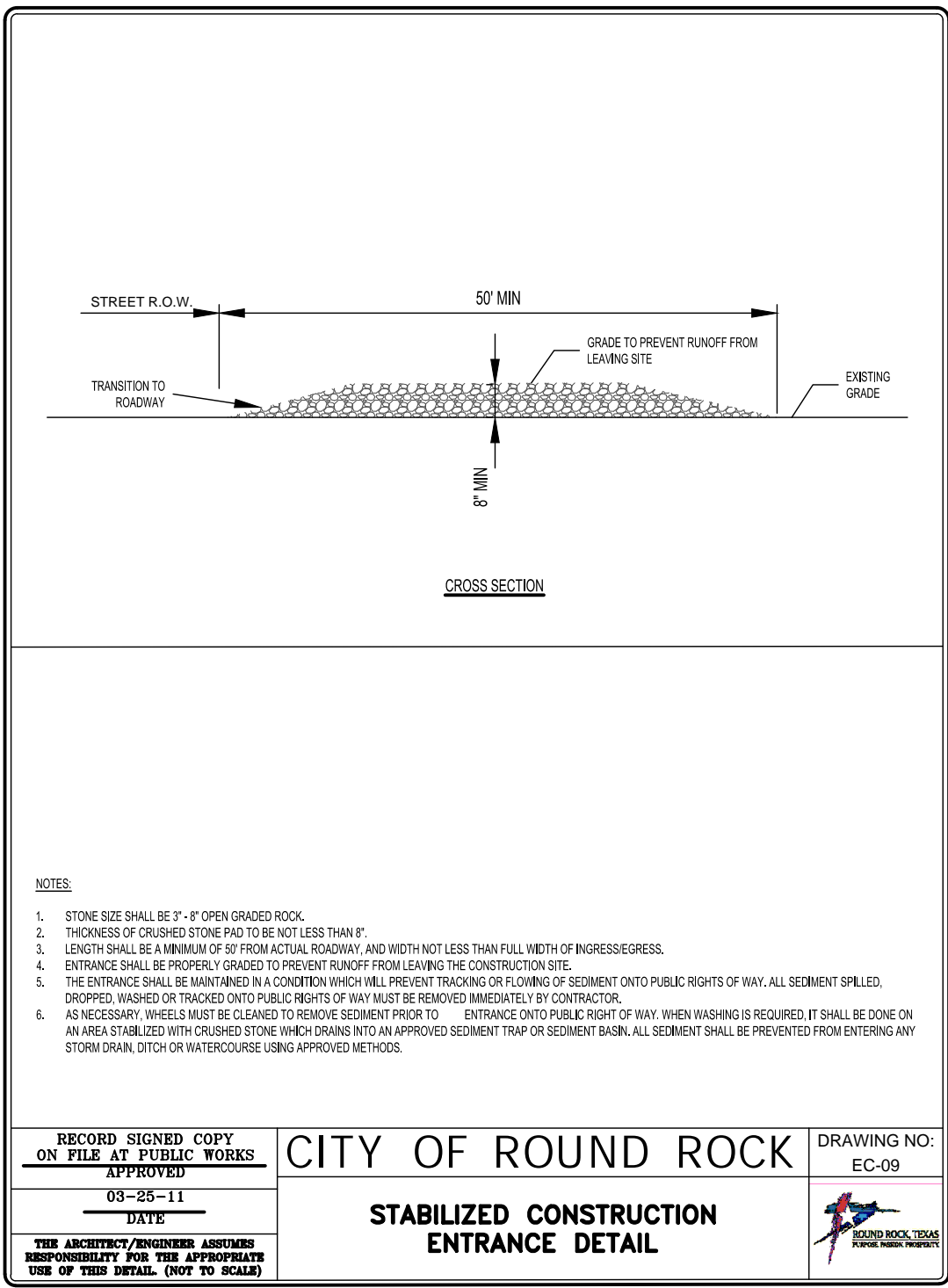
DESIGNED BY: SPC	DRAFTED BY: CFH
DATE	
REVISION	
<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering & Surveying FIRM ID #E3791 Main Office: 12129 RR (330) N. Ste. 600 5501 West Williams Canyon Dr. Austin, Texas 78750 Phone No. (512) 280-5160 Fax No. (512) 280-5165	
<b>CB&amp;D</b>	
SHEET NAME: EROSION CONTROL PLAN (2 OF 2)	
JOB NAME: SADDLEBACK AT SANTA RITA RANCH	
PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS	
DATE: OCT 2023	
JOB NUMBER: 5413	
SHEET: 9 OF 73	
SHEET NO. 9	

STATE OF TEXAS  
STEVEN P. GATES  
93648  
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGRANCE & DOERING, INC.  
ID# F3791

12-1-2023





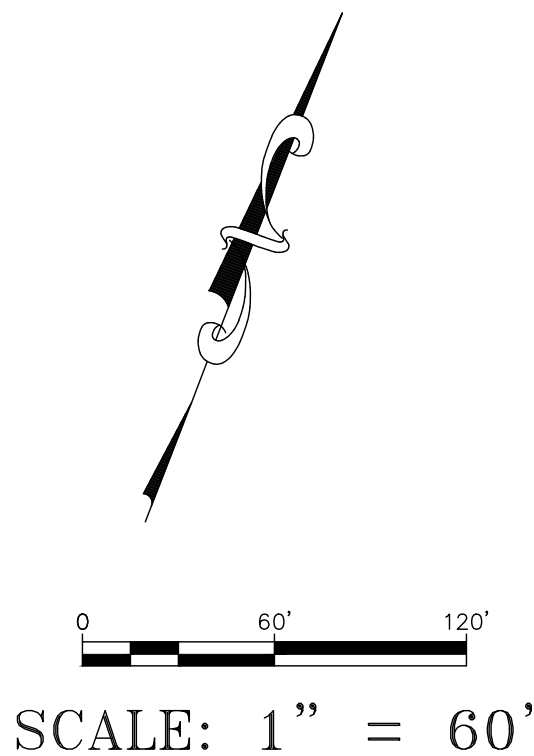


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**LEGEND**

- PROPERTY BOUNDARY
- - - DRAINAGE BOUNDARY LINE
- - - FUTURE DRAINAGE BOUNDARY
- (A1) DRAINAGE AREA LABEL
- - - 940 - - EXISTING CONTOUR MAJOR
- - - EXISTING CONTOUR MINOR
- ➔ FLOW ARROW
- HP/LP HIGH POINT/LOW POINT



DESIGNED BY: SPC	DRAFTED BY: CFH
DATE	
REVISION	

<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering & Surveying  FIRM ID #E3791 Main Office: 5501 West Williams Canyon Dr., Austin, Texas 78750 North Office: 12129 RR 630 N, Suite 600, Austin, Texas 78750 Phone No. (512) 280-5160 Fax No. (512) 280-5165	SHEET NAME: DRAINAGE AREA PLAN (1 OF 2) JOB NAME: SADDLEBACK AT SANTA RITA RANCH PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS
	 STEVEN P. CATES 93648 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS 12-1-2023
	DATE: OCT 2023
	JOB NUMBER: 5413

SHEET	13 OF 73
SHEET NO.	13

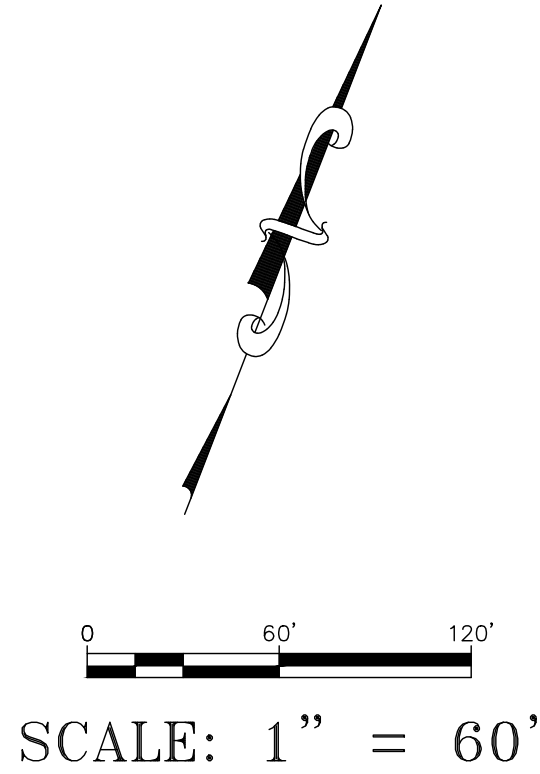


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**LEGEND**

- PROPERTY BOUNDARY
- DRAINAGE BOUNDARY LINE
- FUTURE DRAINAGE BOUNDARY
- DRAINAGE AREA LABEL
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- FLOW ARROW
- HP/LP
- HIGH POINT/LOW POINT



EXISTING SADDLEBACK  
AT SANTA RITA RANCH  
PHASE 1 SECTION 2

DESIGNED BY: SPC	DRAFTED BY: CFH
DATE	
REVISION	
<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering FIRM ID #E3791 Main Office: 12120 RR (3) N, Ste. 600 Austin, Texas 78750 Phone No. (512) 280-5160 Fax No. (512) 280-5165	
<b>SHEET NAME: DRAINAGE AREA PLAN (2 OF 2)</b>	
<b>JOB NAME: SADDLEBACK AT SANTA RITA RANCH</b>	
<b>PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS</b>	
DATE: OCT 2023	
JOB NUMBER: 5413	
SHEET: 14 OF 73	
SHEET NO. 14	



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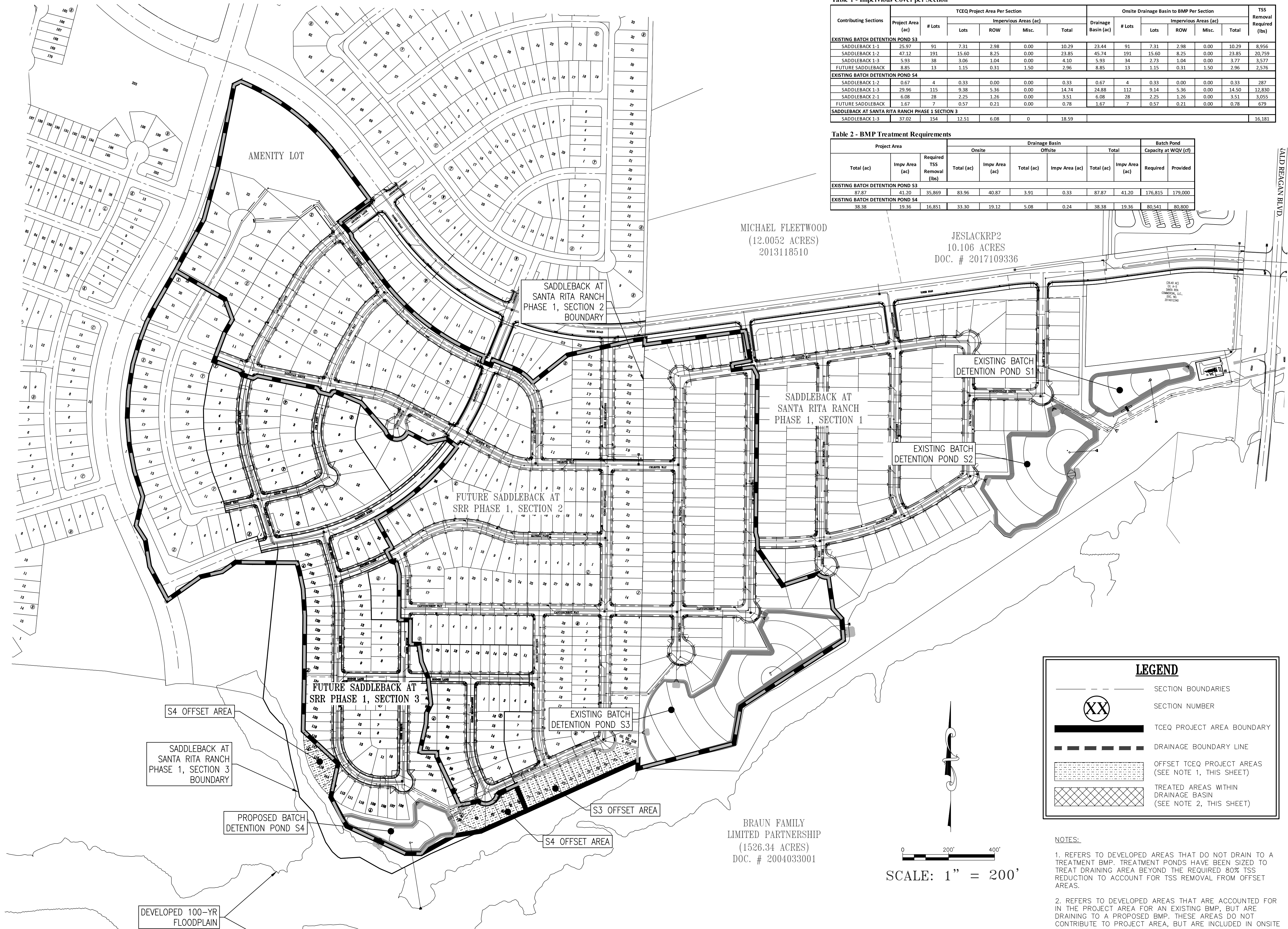
Area	Area	T <sub>c</sub>	Perv.	Imperv.	C	C	C	I <sub>10</sub>	I <sub>25</sub>	I <sub>100</sub>	Q <sub>10</sub>	Q <sub>25</sub>	Q <sub>100</sub>
No.	(Acre)	(Min.)	(%)	(%)	10	25	100	In/Hr	In/Hr	In/Hr	CFS	CFS	CFS
A1	1.58	14	44	56	0.61	0.65	0.73	6.37	7.74	10.00	6.1	8.0	11.6
A2	0.39	11	45	55	0.60	0.65	0.73	7.01	8.49	10.89	1.6	2.1	3.1
A3	0.69	12	47	53	0.59	0.64	0.72	6.88	8.35	10.72	2.8	3.7	5.3
A4	0.70	17	40	60	0.59	0.63	0.72	5.81	7.09	9.21	2.4	3.1	4.6
A5	1.03	10	36	64	0.64	0.69	0.77	7.26	8.78	11.23	4.8	6.3	9.0
A6	0.68	13	44	56	0.61	0.65	0.73	6.58	8.00	10.30	2.7	3.6	5.2
A7	1.05	10	43	57	0.61	0.66	0.74	7.26	8.78	11.23	4.7	6.1	8.7
A8	1.87	11	48	52	0.59	0.63	0.71	7.10	8.60	11.02	7.8	10.2	14.7
A9	0.89	13	42	58	0.61	0.66	0.74	6.64	8.07	10.39	3.6	4.7	6.8
A10	0.17	10	16	84	0.72	0.77	0.85	7.26	8.78	11.23	0.9	1.1	1.6
A11	0.67	10	51	49	0.58	0.62	0.70	7.17	8.68	11.12	2.8	3.6	5.2
A12	1.13	10	51	49	0.57	0.62	0.70	7.26	8.78	11.23	4.7	6.1	8.9
A13	0.47	10	50	50	0.58	0.63	0.71	7.26	8.78	11.23	2.0	2.6	3.7
A14	0.81	12	48	52	0.54	0.59	0.67	6.77	8.21	10.56	3.0	3.9	5.7
A15	1.11	10	51	49	0.57	0.62	0.70	7.19	8.70	11.14	4.6	6.0	8.7
A16	0.66	11	52	48	0.57	0.62	0.70	7.10	8.60	11.02	2.7	3.5	5.1
B1	0.97	12	46	54	0.60	0.64	0.72	6.81	8.27	10.63	3.9	5.1	7.4
B2	0.62	10	44	56	0.61	0.65	0.73	7.22	8.74	11.18	2.7	3.5	5.1
B3	0.27	11	37	63	0.64	0.69	0.77	7.10	8.60	11.02	1.2	1.6	2.3
B4	1.03	12	51	49	0.57	0.62	0.70	6.83	8.28	10.65	4.0	5.3	7.6
C1	0.68	13	49	51	0.53	0.58	0.66	6.54	7.94	10.24	2.4	3.1	4.6
D1	0.46	10	25	75	0.67	0.72	0.80	7.23	8.75	11.20	2.2	2.9	4.1
D2	1.52	16	50	50	0.58	0.62	0.70	6.05	7.37	9.55	5.3	7.0	10.2
E1	0.90	11	44	56	0.61	0.65	0.73	7.02	8.51	10.91	3.8	5.0	7.2
E2	0.82	10	47	53	0.59	0.64	0.72	7.26	8.78	11.23	3.5	4.6	6.6
E3	0.76	11	49	51	0.58	0.63	0.71	6.96	8.43	10.82	3.1	4.1	5.9
F1	1.74	11	47	53	0.59	0.64	0.72	7.10	8.60	11.02	7.3	9.6	13.8
G1	0.60	10	21	79	0.71	0.76	0.85	7.26	8.78	11.23	3.1	4.0	5.7
G2	1.10	12	50	50	0.58	0.63	0.71	6.84	8.30	10.66	4.4	5.7	8.3
G3	1.00	10	49	51	0.58	0.63	0.71	7.26	8.78	11.23	4.2	5.5	8.0
G4	1.32	13	49	51	0.59	0.63	0.71	6.67	8.09	10.42	5.2	6.8	9.8
G5	0.23	10	18	82	0.73	0.78	0.86	7.26	8.78	11.23	1.2	1.6	2.2
G6	1.08	14	44	56	0.56	0.61	0.69	6.40	7.78	10.05	3.9	5.1	7.5
H1	0.36	10	21	79	0.71	0.76	0.85	7.26	8.78	11.23	1.9	2.4	3.5
H2	1.23	12	52	48	0.57	0.62	0.70	6.75	8.20	10.54	4.7	6.2	9.0
H3	0.51	13	41	59	0.58	0.62	0.71	6.57	7.98	10.28	1.9	2.5	3.7
H4	0.93	15	48	52	0.54	0.58	0.67	6.14	7.48	9.68	3.1	4.1	6.0
H5	1.17	16	51	49	0.52	0.57	0.65	6.01	7.32	9.49	3.7	4.9	7.2
H6	1.26	14	51	49	0.58	0.62	0.70	6.45	7.84	10.12	4.7	6.2	9.0
J	7.40	11	54	46	0.56	0.61	0.68	6.89	8.36	10.74	28.6	37.4	54.4

25 - YEAR INLET FLOW CALCULATION TABLE														
INLET NUMBER	DRAINAGE AREA NO.	Q (CFS)	Q PASS (CFS)	Q SPILL (CFS)	Q ADD (CFS)	Q TOTAL (QA) (CFS)	SLOPE (%)	a (FT)	Yo (FT)	PAVEMENT WIDTH	PONDED WIDTH (FT)	Qa/La	La (FT)	LENGTH (FT)
A1	A1	8.0	0.0	0.0	0.0	8.0	LP	0.42	0.32	33	-	-	-	15
A2	A2	2.1	0.0	0.0	0.0	2.1	0.50	0.42	0.16	33	2.88	0.62	3.44	10
A3	A3	3.7	0.0	0.0	0.0	3.7	1.30	0.42	0.16	33	2.94	0.62	5.86	10
A4	A4	3.1	0.0	0.0	0.0	3.1	1.40	0.42	0.15	33	2.75	0.61	5.10	10
A5	A5	6.3	0.0	0.0	0.0	6.3	1.10	0.42	0.20	33	3.69	0.66	9.50	10
A6	A6	3.6	0.0	0.0	0.0	3.6	0.90	0.42	0.17	33	3.11	0.63	5.64	10
A7	A7	6.1	0.0	0.0	0.0	6.1	3.40	0.42	0.16	33	2.97	0.63	9.69	10
A8	A8	10.2	0.0	0.0	0.1	10.3	LP	0.42	0.37	33	-	-	-	15
A9	A9	4.7	0.0	0.0	0.0	4.7	1.90	0.42	0.17	33	3.01	0.63	7.52	10
A10	A10	1.1	0.0	0.0	3.2	4.3	0.80	0.42	0.19	33	3.41	0.65	6.68	10
A11	A11	3.6	0.0	0.0	0.0	3.6	1.10	0.42	0.17	33	3.02	0.63	5.78	10
A12	A12	6.1	0.0	0.0	0.0	6.1	2.40	0.42	0.18	33	3.17	0.64	9.65	10
A13	A13	2.6	0.0	0.0	0.0	2.6	3.60	0.42	0.12	33	2.18	0.59	4.38	10
A14	A14	3.9	0.0	0.0	0.0	3.9	6.10	0.42	0.13	33	2.30	0.59	6.61	10
A15	A15	6.0	0.0	0.0	0.0	6.0	6.10	0.42	0.15	33	2.67	0.61	9.83	10
A16	A16	3.5	0.0	0.0	0.0	3.5	3.10	0.42	0.14	33	2.49	0.60	5.81	10
B1	B1	5.1	0.0	0.0	0.0	5.1	2.20	0.42	0.17	33	3.02	0.63	8.16	10
B2	B2	3.5	0.0	0.0	0.0	3.5	2.00	0.42	0.15	33	2.69	0.61	5.76	10
B3	B3	1.6	0.0	0.0	0.0	1.6	1.20	0.42	0.13	33	2.24	0.59	2.71	10
B4	B4	5.3	0.0	0.0	0.0	5.3	2.30	0.42	0.17	33	3.03	0.63	8.38	10
C1	C1	3.1	0.0	0.0	0.0	3.1	0.80	0.42	0.17	33	3.03	0.63	4.96	10
D1	D1	2.9	0.0	0.0	0.0	2.9	0.40	0.42	0.18	33	3.34	0.64	4.50	10
D2	D2	7.0	0.1	0.0	0.0	6.9	0.50	0.42	0.24	33	4.43	0.70	9.89	10
E1	E1	5.0	0.0	0.0	0.0	5.0	2.40	0.42	0.16	33	2.95	0.62	8.01	10
E2	E2	4.6	0.0	0.0	0.0	4.6	1.40	0.42	0.17	33	3.15	0.63	7.22	10
E3	E3	4.1	0.0	0.0	0.0	4.1	4.00	0.42	0.14	33	2.51	0.60	6.74	10
F1	F1	9.6	3.2	0.0	0.0	6.4	2.20	0.42	0.18	33	3.27	0.64	9.96	10
G1	G1	4.0	0.0	0.0	0.4	4.4	LP	0.42	0.21	33	-	-	-	15
G2	G2	5.7	0.0	0.0	0.0	5.7	1.60	0.42	0.18	33	3.32	0.64	8.87	10
G3	G3	5.5	0.0	0.0	0.0	5.5	1.50	0.42	0.18	33	3.33	0.64	8.60	10
G4	G4	6.8	0.4	0.0	0.0	6.4	1.89	0.42	0.18	33	3.36	0.64	9.89	10
G5	G5	1.6	0.0	0.0	0.0	1.6	2.00	0.42	0.11	33	2.05	0.58	2.72	10
G6	G6	5.1	0.0	0.0	0.0	5.1	1.90	0.42	0.17	33	3.10	0.63	8.10	10
H1	H1	2.4	0.0	0.0	0.0	2.4	2.10	0.42	0.13	33	2.35	0.59	4.10	10
H2	H2	6.2	0.0	0.0	0.0	6.2	3.40	0.42	0.17	33	3.00	0.63	9.92	10
H3	H3	2.5	0.0	0.0	0.0	2.5	2.53	0.42	0.13	33	2.31	0.59	4.29	10
H4	H4	4.1	0.0	0.0	0.0	4.1	1.53	0.42	0.17	33	2.97	0.63	6.51	10
H5	H5	4.9	0.0	0.0	0.0	4.9	1.30	0.42	0.18	33	3.26	0.64	7.64	10
H6	H6	6.2	0.0	0.0	0.0	6.2	1.00	0.42	0.20	33	3.72	0.66	9.29	10

AREAS	T <sub>C</sub>	C <sub>10</sub> *A	C <sub>25</sub> *A	C <sub>100</sub> *A	I <sub>10</sub>	I <sub>25</sub>	I <sub>100</sub>	Q <sub>10</sub>	Q <sub>25</sub>	Q <sub>100</sub>
COMBINED	(Min.)				ln/Hr	ln/Hr	ln/Hr	CFS	CFS	CFS
A15-A16	11	1.02	1.09	1.24	7.10	8.60	11.02	7.2	9.4	13.6
A14-A16	12	1.45	1.57	1.78	6.77	8.21	10.56	9.8	12.9	18.8
A13-A16	12	1.73	1.86	2.11	6.77	8.21	10.56	11.7	15.3	22.2
A12-A16	12	2.37	2.56	2.90	6.77	8.21	10.56	16.1	21.0	30.6
A11-A16	12	2.76	2.98	3.37	6.77	8.21	10.56	18.7	24.5	35.5
E2-E3	11	0.93	1.00	1.13	6.96	8.43	10.82	6.5	8.5	12.2
E1-E3	11	1.48	1.59	1.79	6.96	8.43	10.82	10.3	13.4	19.4
F	11	2.51	2.70	3.04	6.96	8.43	10.82	17.5	22.8	32.9
J4: A12-A17,E,F	12	6.75	7.27	8.20	6.77	8.21	10.56	45.7	59.7	86.6
A10-A16	12	6.87	7.40	8.34	6.77	8.21	10.56	46.5	60.8	88.1
A9-A16	13	7.42	7.99	9.00	6.64	8.07	10.39	49.3	64.4	93.5
A8-A16	13	8.52	9.17	10.34	6.64	8.07	10.39	56.6	74.0	107.4
D1-D2	16	1.19	1.28	1.44	6.05	7.37	9.55	7.2	9.4	13.7
J3:A8-A16,D	16	9.70	10.45	11.78	6.05	7.37	9.55	58.7	77.0	112.5
J2:A8-A16,C	16	10.07	10.84	12.22	6.05	7.37	9.55	60.9	79.9	116.8
A7-A16	16	10.71	11.53	13.00	6.05	7.37	9.55	64.8	85.0	124.2
A6-A16	16	11.12	11.98	13.50	6.05	7.37	9.55	67.3	88.3	129.0
A5-A16	16	11.79	12.69	14.30	6.05	7.37	9.55	71.3	93.6	136.6
A4-A16	17	12.20	13.14	14.80	5.81	7.09	9.21	70.9	93.1	136.3
A3-A16	17	12.61	13.57	15.29	5.81	7.09	9.21	73.3	96.3	140.9
A2-A16	17	12.84	13.82	15.57	5.81	7.09	9.21	74.6	98.0	143.5
B3-B4	12	0.76	0.82	0.93	6.83	8.28	10.65	5.2	6.8	9.9
B2-B4	12	1.14	1.22	1.38	6.83	8.28	10.65	7.8	10.1	14.7
B1-B4	12	1.71	1.84	2.08	6.81	8.27	10.63	11.7	15.2	22.1
J1: A2-A7, B	17	14.55	15.67	17.65	5.81	7.09	9.21	84.6	111.1	162.6
OUTFALL: A, B, C, D, E, F	17	15.51	16.70	18.81	5.81	7.09	9.21	90.2	118.4	173.3
G5-G6	14	0.78	0.84	0.94	6.40	7.78	10.05	5.0	6.5	9.5
G4-G6	14	1.55	1.67	1.89	6.40	7.78	10.05	9.9	13.0	19.0
G3-G6	14	2.14	2.30	2.60	6.40	7.78	10.05	13.7	17.9	26.1
H5-H6	16	1.34	1.45	1.65	6.01	7.32	9.49	8.1	10.6	15.6
H4-H6	16	1.85	2.00	2.27	6.01	7.32	9.49	11.1	14.6	21.5
H3-H6	16	2.14	2.32	2.63	6.01	7.32	9.49	12.9	17.0	24.9
H2-H6	16	2.84	3.07	3.48	6.01	7.32	9.49	17.1	22.5	33.1
H1-H6	16	3.10	3.35	3.79	6.01	7.32	9.49	18.6	24.5	36.0
J5: G3-G6, H	16	5.24	5.66	6.39	6.01	7.32	9.49	31.5	41.4	60.7
G2-G6	16	5.88	6.34	7.17	6.01	7.32	9.49	35.3	46.4	68.0
OUTFALL: G, H	16	6.31	6.80	7.67	6.01	7.32	9.49	37.9	49.8	72.8



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SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3

Table 1 - Impervious Cover per Section

Contributing Sections	TCEQ Project Area Per Section					Onsite Drainage Basin to BMP Per Section					TSS Removal Required (lbs)		
	Project Area (ac)	# Lots	Impervious Areas (ac)			Drainage Basin (ac)	# Lots	Impervious Areas (ac)					
			Lots	ROW	Misc.			Total	Lots	ROW		Misc.	Total
EXISTING BATCH DETENTION POND S3													
SADDLEBACK 1-1	25.97	91	7.31	2.98	0.00	10.29	23.44	91	7.31	2.98	0.00	10.29	8,956
SADDLEBACK 1-2	47.12	191	15.60	8.25	0.00	23.85	45.74	191	15.60	8.25	0.00	23.85	20,759
SADDLEBACK 1-3	5.93	38	3.06	1.04	0.00	4.10	5.93	34	2.73	1.04	0.00	3.77	3,577
FUTURE SADDLEBACK	8.85	13	1.15	0.31	1.50	2.96	8.85	13	1.15	0.31	1.50	2.96	2,576
EXISTING BATCH DETENTION POND S4													
SADDLEBACK 1-2	0.67	4	0.33	0.00	0.00	0.33	0.67	4	0.33	0.00	0.00	0.33	287
SADDLEBACK 1-3	29.96	115	9.38	5.36	0.00	14.74	24.88	112	9.14	5.36	0.00	14.50	12,830
SADDLEBACK 1-1	6.08	28	2.25	1.26	0.00	3.51	6.08	28	2.25	1.26	0.00	3.51	3,055
FUTURE SADDLEBACK	1.67	7	0.57	0.21	0.00	0.78	1.67	7	0.57	0.21	0.00	0.78	679
SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3													
SADDLEBACK 1-3	37.02	154	12.51	6.08	0	18.59							16,181

Table 2 - BMP Treatment Requirements

Project Area			Drainage Basin				Batch Pond			
			Onsite		Offsite		Total		Capacity at WQV (cf)	
Total (ac)	Impv Area (ac)	Required TSS Removal (lbs)	Total (ac)	Impv Area (ac)	Total (ac)	Impv Area (ac)	Total (ac)	Impv Area (ac)	Required	Provided
EXISTING BATCH DETENTION POND S3										
		41.20	35,869	83.96	40.87	3.91	0.33	87.87	41.20	176,815 179,000
EXISTING BATCH DETENTION POND S4										
		19.36	16,851	33.30	19.12	5.08	0.24	38.38	19.36	80,541 80,800

LEGEND

XX

SECTION NUMBER

TCEQ PROJECT AREA BOUNDARY

DRAINAGE BOUNDARY LINE

OFFSET TCEQ PROJECT AREAS (SEE NOTE 1, THIS SHEET)

TREATED AREAS WITHIN DRAINAGE BASIN (SEE NOTE 2, THIS SHEET)

SECTION BOUNDARIES

- NOTES:
1. REFERS TO DEVELOPED AREAS THAT DO NOT DRAIN TO A TREATMENT BMP. TREATMENT PONDS HAVE BEEN SIZED TO TREAT DRAINING AREA BEYOND THE REQUIRED 80% TSS REDUCTION TO ACCOUNT FOR TSS REMOVAL FROM OFFSET AREAS.
2. REFERS TO DEVELOPED AREAS THAT ARE ACCOUNTED FOR IN THE PROJECT AREA FOR AN EXISTING BMP, BUT ARE DRAINING TO A PROPOSED BMP. THESE AREAS DO NOT CONTRIBUTE TO PROJECT AREA, BUT ARE INCLUDED IN ONSITE DRAINAGE BASIN OF PROPOSED BMP.

DESIGNED BY: SPC

DRAFTED BY: CFI

DATE:

REVISION:

SHEET NAME: TCEQ PROJECT AND DRAINAGE AREA MAP

JOB NAME: SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3

PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS

CARD

Carlson, Brigrance & Doering, Inc.

Civil Engineering ♦ Surveying

FIRM ID #E3791

North Office: 5501 West Williams Canyon Dr. Austin, Texas 78749

South Office: 12129 RR 630 N. Suite 600 Austin, Texas 78750

Phone No. (512) 280-5160 Fax No. (512) 280-5165

STATE OF TEXAS

STEVEN P. CATES

93648

PROFESSIONAL ENGINEER

CARD

CARLSON, BRIGRANCE & DOERING, INC.

03# F3791

12-1-2023

DATE: OCT 2023

JOB NUMBER: 5413

SHEET: 16 OF 73

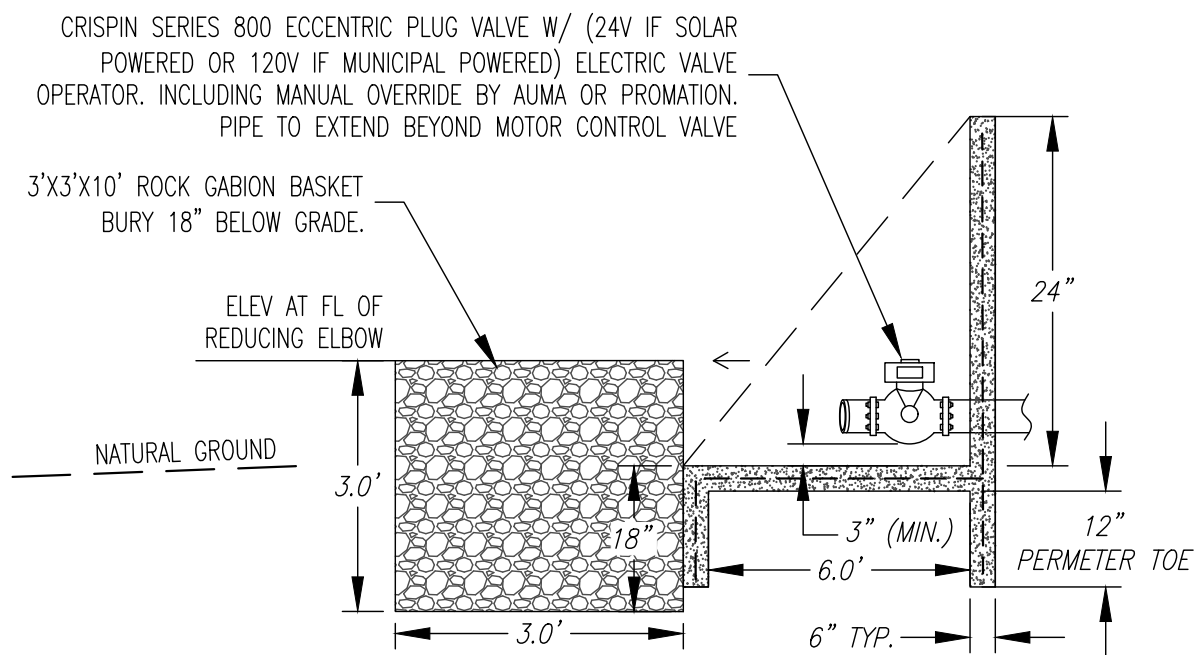
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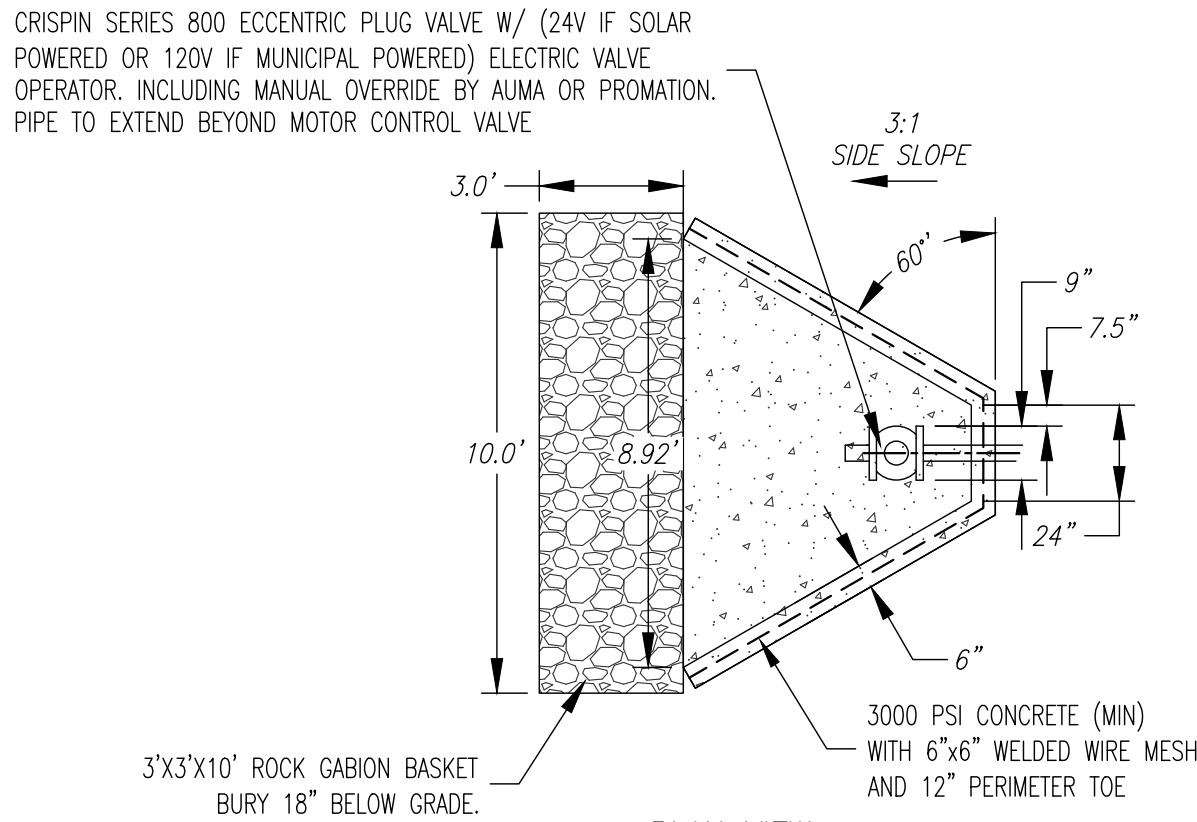




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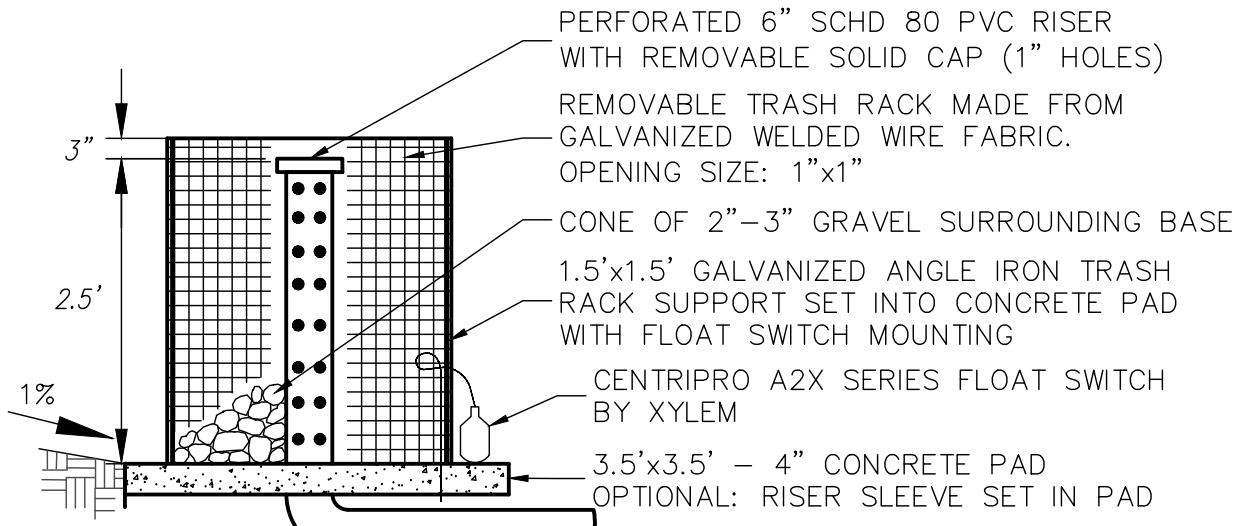
PROFILE VIEW



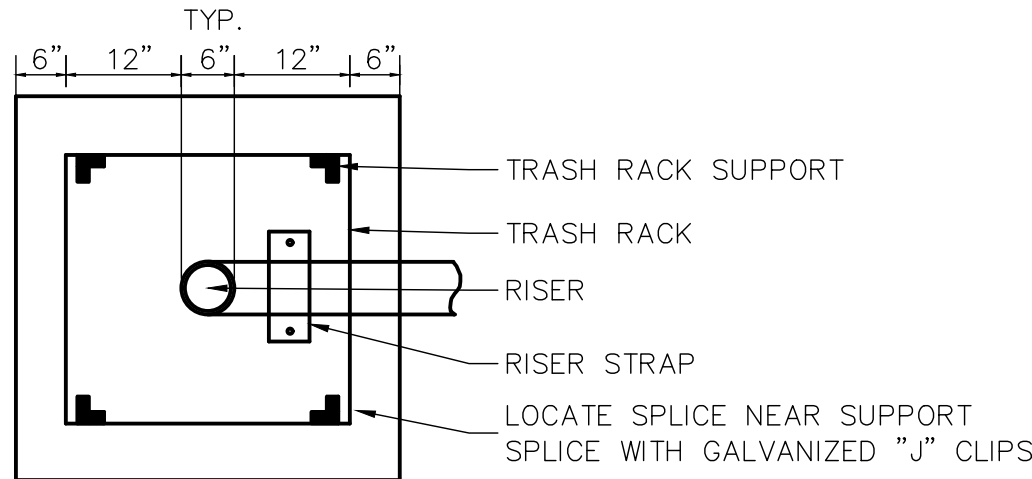
PLAN VIEW

### HEADWALL WITH PLUG VALVE DETAIL

N.T.S.



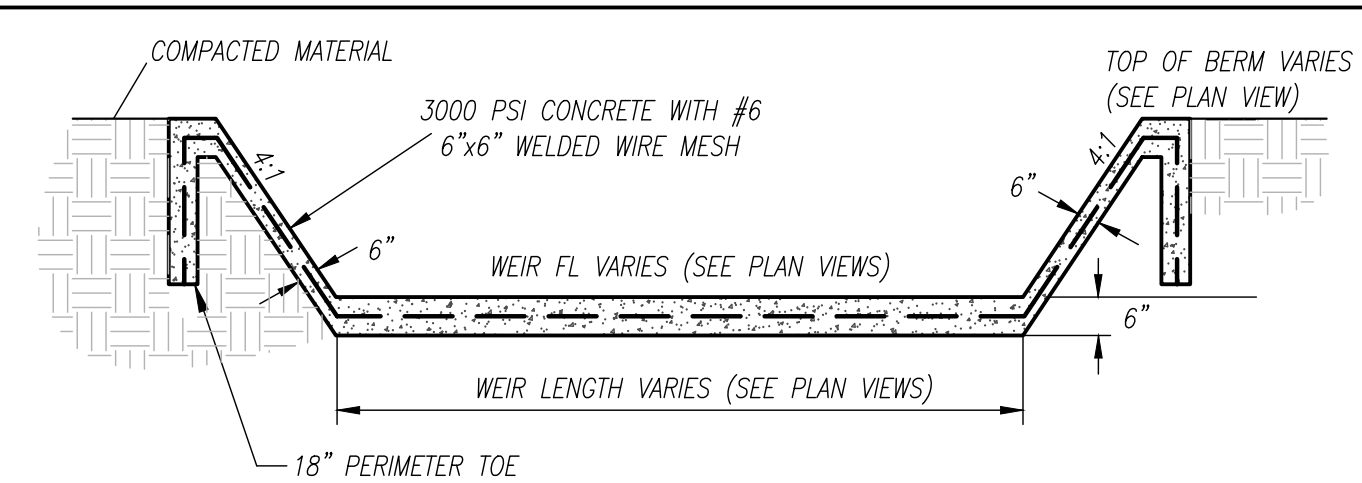
### SIDE VIEW OF RISER



TOP VIEW OF RISER (SQUARE DESIGN)  
TYPICAL RISER DESIGN FOR PONDS WITH EARTHEN BERMS

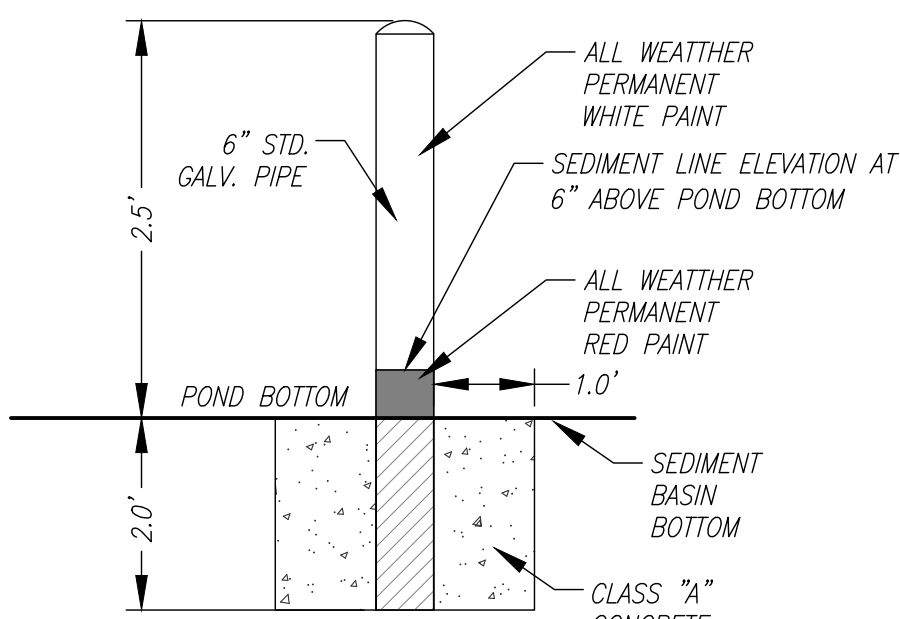
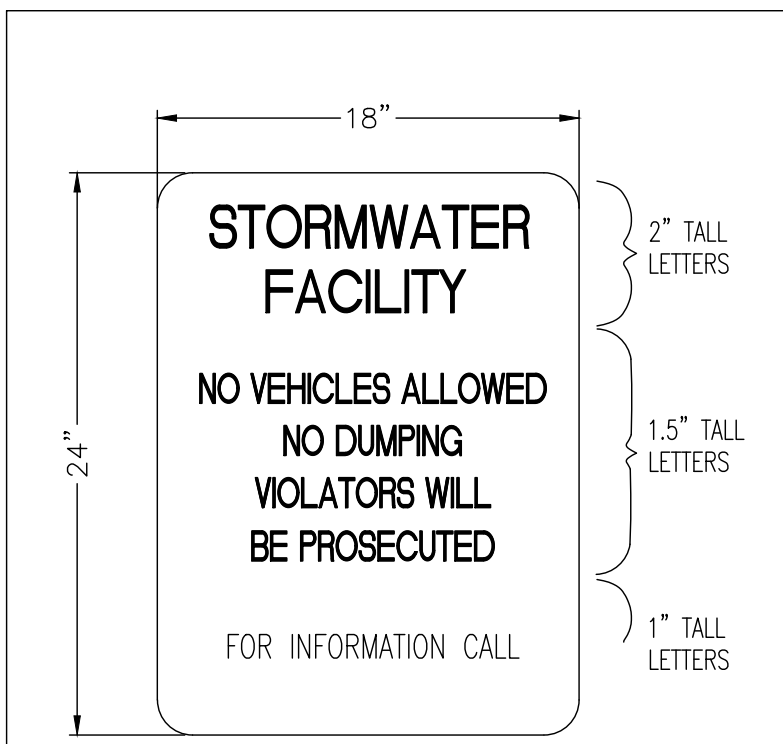
### OUTFLOW RISER DETAIL

N.T.S.



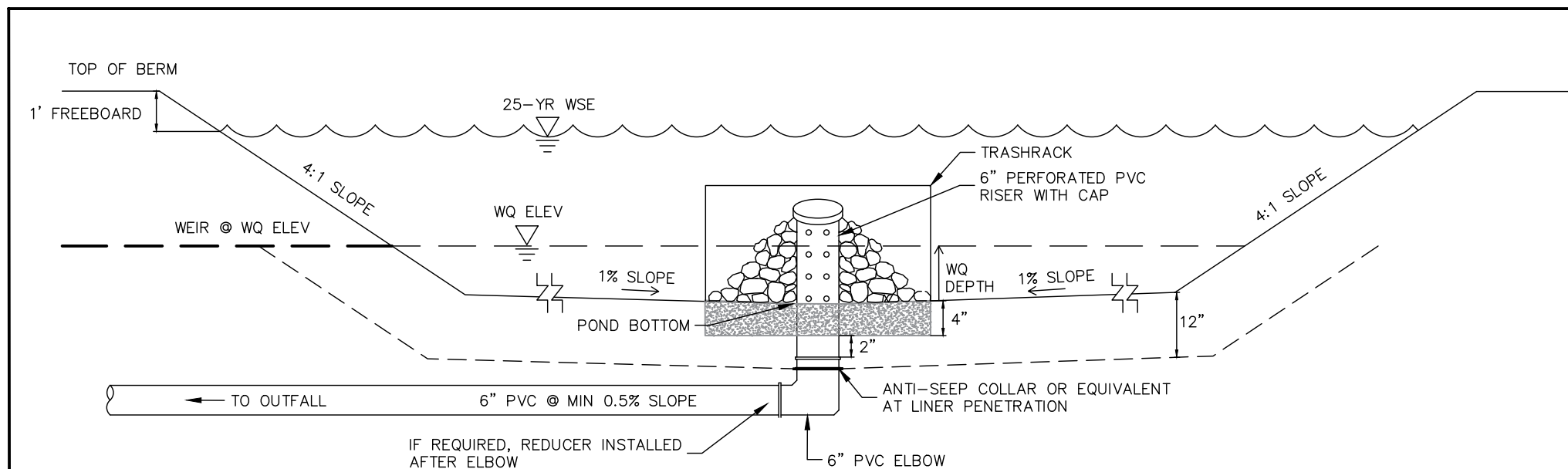
### WEIR DETAIL

N.T.S.



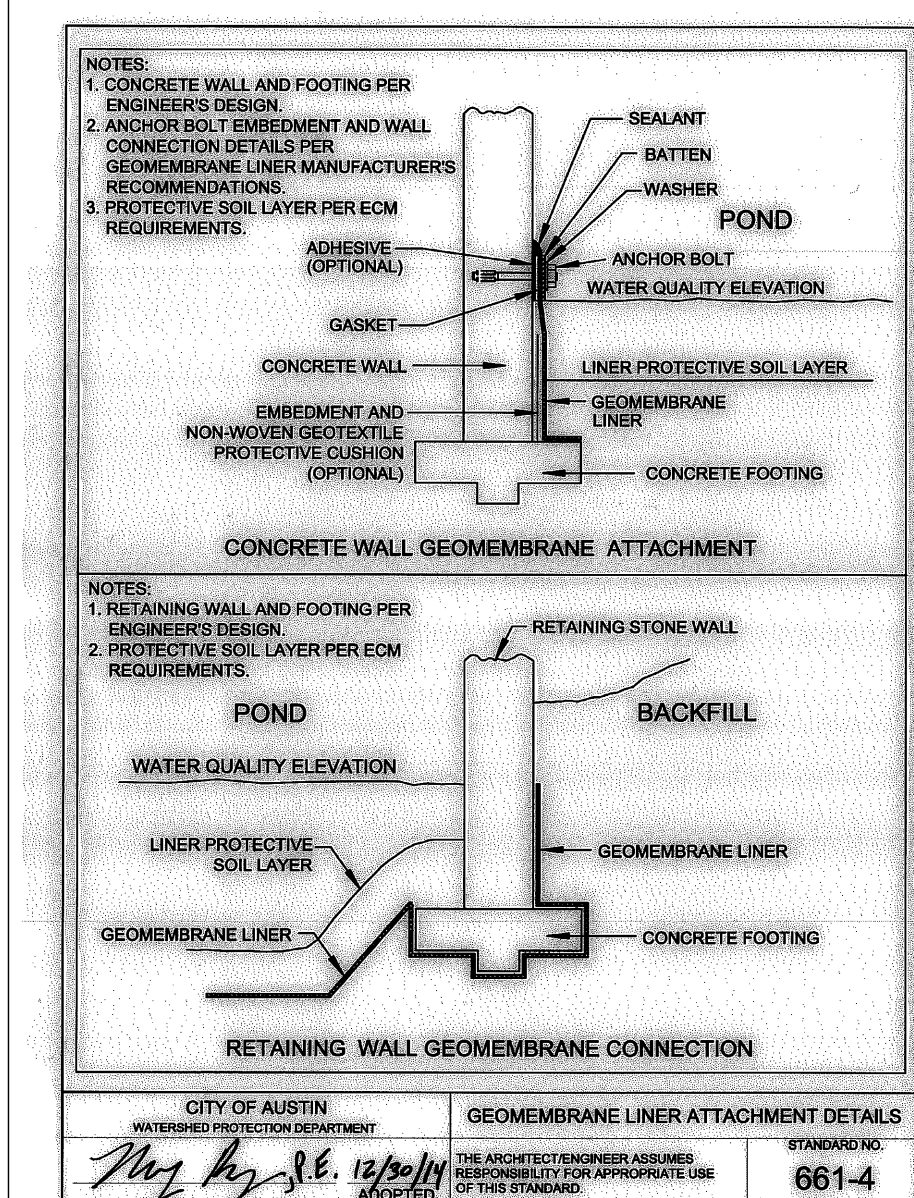
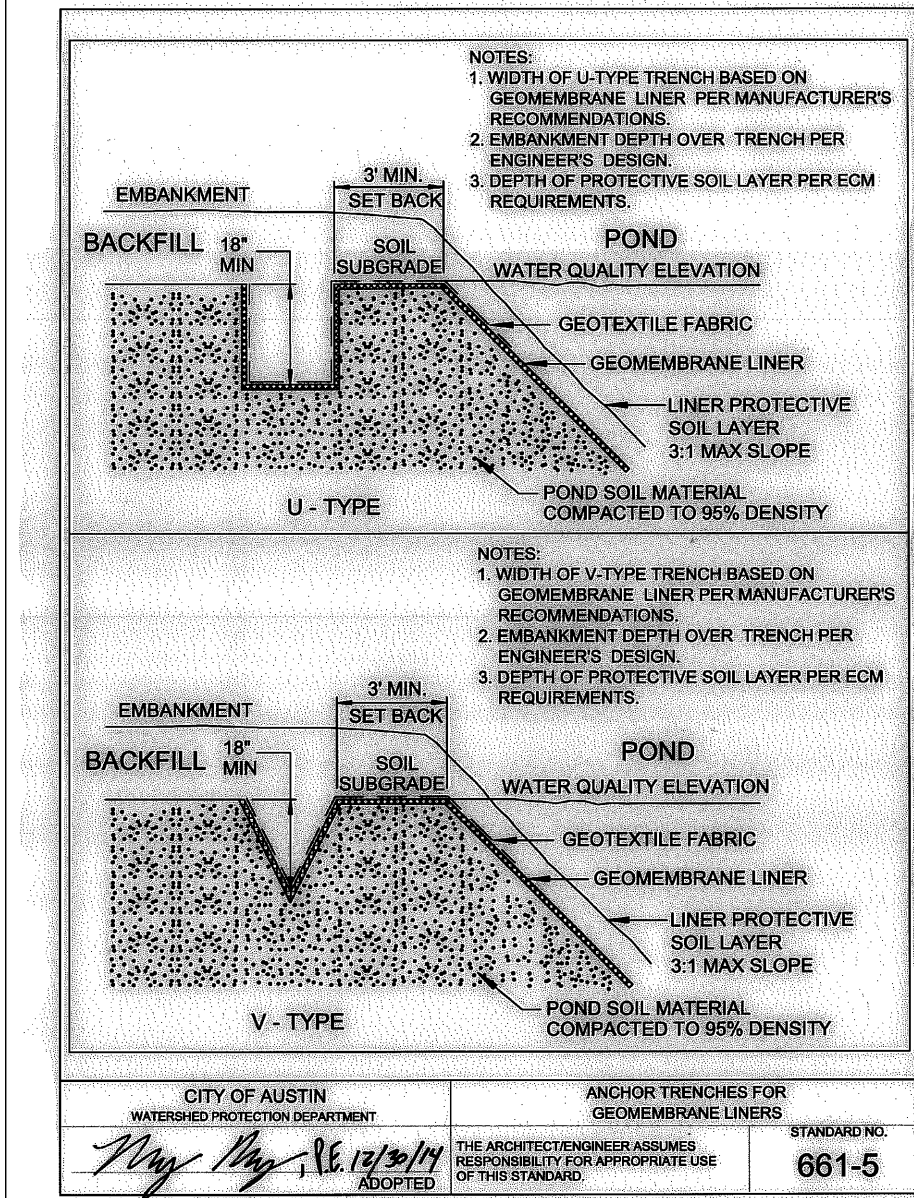
### CONCRETE FILLED FIXED SEDIMENT MARKER

N.T.S.



### BATCH DETENTION POND TYPICAL CROSS SECTION

N.T.S.



### INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN:

#### TEMPORARY BMP'S:

BEST MANAGEMENT PRACTICES (BMP'S) INSTALLED DURING CONSTRUCTION WILL BE MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EPA'S NPDES STORMWATER POLLUTION PREVENTION PROGRAM. THE CONSTRUCTION SUPERINTENDENT WILL INSPECT TEMPORARY EROSION CONTROLS ON A REGULAR BASIS AND ADJUST THE CONTROLS AND/OR REMOVE ANY SEDIMENT BUILDUP IN ACCORDANCE WITH THE EROSION/SEDIMENTATION CONTROL NOTES AND AS OTHERWISE DIRECTED BY THE OWNER OR HIS DESIGNATED REPRESENTATIVE. TEMPORARY EROSION CONTROLS SHOULD BE INSPECTED, MAINTAINED, AND REPAIRED, AT A MINIMUM, EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM OF 0.5 INCHES OR MORE RAINFALL DEPTH. SEDIMENT SHALL BE REMOVED FROM CONTROLS WHEN 50% OF THE DESIGN HEIGHT IS EXCEEDED. FOLLOWING INSPECTION OF THE BMP'S, DEFICIENCIES SHALL BE NOTED AND CORRECTED BY THE CONTRACTOR.

#### PERMANENT BMP:

##### BATCH DETENTION BASINS

INSPECTIONS. BASINS SHOULD BE INSPECTED AT LEAST TWICE A YEAR (ONCE DURING OR IMMEDIATELY FOLLOWING WET WEATHER) TO EVALUATE FACILITY OPERATION. WHEN POSSIBLE, INSPECTIONS SHOULD BE CONDUCTED DURING WET WEATHER TO DETERMINE IF THE POND IS MEETING THE TARGET DETENTION TIME OF 12 HOURS AND A DRAWDOWN OF NO MORE THAN 48 HOURS. IN PARTICULAR, THE DETENTION CONTROL DEVICE SHOULD BE REGULARLY INSPECTED FOR EVIDENCE OF CLOGGING, OR CONVERSELY, FOR TOO RAPID A RELEASE. IF THE DETENTION TIME IS LESS THAN 12 HOURS OR THE DRAWDOWN TIME IS EXCEEDED BY MORE THAN 24 HOURS, THEN REPAIRS SHOULD BE SCHEDULED IMMEDIATELY. DURING EACH INSPECTION, EROSION AREAS INSIDE AND DOWNSTREAM OF THE BMP SHOULD BE IDENTIFIED AND REPAIRED OR REVEGETATED IMMEDIATELY.

MOWING. THE BASIN, SIDE SLOPES, EMBANKMENT, AND EMERGENCY SPILLWAY OF A BATCH DETENTION BASIN MUST BE MOWED REGULARLY TO DISCOURAGE WOODY GROWTH AND CONTROL WEEDS. GRASS AREAS IN AND AROUND BASINS SHOULD BE MOWED AT LEAST TWICE ANNUALLY TO LIMIT VEGETATION HEIGHT TO 18 INCHES. MORE FREQUENT MOWING TO MAINTAIN AESTHETIC APPEARANCE MAY BE NECESSARY IN LANDSCAPED AREAS. WHEN MOWING OF GRASS IS PERFORMED, A MULCHING MOWER SHOULD BE USED, OR GRASS CLIPPINGS SHOULD BE CAUGHT AND REMOVED.

DEBRIS AND LITTER REMOVAL. DEBRIS AND LITTER WILL ACCUMULATE NEAR THE DETENTION CONTROL DEVICE AND SHOULD BE REMOVED DURING REGULAR MOWING OPERATIONS AND INSPECTIONS. PARTICULAR ATTENTION SHOULD BE PAID TO FLOATING DEBRIS THAT CAN EVENTUALLY CLOG THE CONTROL DEVICE OR RISER.

EROSION CONTROL. THE BASIN SIDE SLOPES, EMERGENCY SPILLWAY, AND EMBANKMENT ALL MAY PERIODICALLY SUFFER FROM SLUMPING AND EROSION, ALTHOUGH THIS SHOULD NOT OCCUR OFTEN IF THE SOILS ARE PROPERLY COMPACTED DURING CONSTRUCTION. REGRADING AND REVEGETATION MAY BE REQUIRED TO CORRECT THE PROBLEMS.

STRUCTURAL REPAIRS AND REPLACEMENT. WITH EACH INSPECTION, ANY DAMAGE TO THE STRUCTURAL ELEMENTS OF THE SYSTEM (PIPES, CONCRETE DRAINAGE STRUCTURES, RETAINING WALLS, ETC.) SHOULD BE IDENTIFIED AND REPAIRED IMMEDIATELY. THESE REPAIRS SHOULD INCLUDE PATCHING OF CRACKED CONCRETE, SEALING OF VOIDS, AND REMOVAL OF VEGETATION FROM CRACKS AND JOINTS. THE VARIOUS INLET/OUTLET AND RISER WORKS IN A BASIN WILL EVENTUALLY DETERIORATE AND MUST BE REPLACED. PUBLIC WORKS EXPERTS HAVE ESTIMATED THAT CORRUGATED METAL PIPE (CMP) HAS A USEFUL LIFE OF ABOUT 25 YR, WHEREAS REINFORCED CONCRETE BARRELS AND RISERS MAY LAST FROM 50 TO 75 YR.

SEDIMENT REMOVAL. WHEN PROPERLY DESIGNED, BATCH DETENTION BASINS WILL ACCUMULATE QUANTITIES OF SEDIMENT OVER TIME. SEDIMENT ACCUMULATION IS A SERIOUS MAINTENANCE CONCERN IN BATCH DETENTION PONDS FOR SEVERAL REASONS. FIRST, SEDIMENT ACCUMULATION CAN MAKE BATCH DETENTION BASINS VERY UNSIGHTLY. SECOND, THE SEDIMENT DEPOSITION GRADUALLY REDUCES AVAILABLE STORAGE CAPACITY RESERVED FOR POLLUTANT REMOVAL AND DETENTION WITHIN THE BASIN. THIRD, SEDIMENT TENDS TO ACCUMULATE AROUND THE OUTLET CONTROL DEVICE. THIS INCREASES THE RISK OF CLOGGING THE ORIFICE OR INTERFERING WITH THE LEVEL SENSOR, WHICH CAN IN TURN REDUCE THE TREATMENT EFFICACY OF THE FACILITY. SEDIMENT CAN BE RESUSPENDED IF ALLOWED TO ACCUMULATE OVER TIME AND ESCAPE THROUGH THE HYDRAULIC CONTROL TO DOWNSTREAM CHANNELS AND STREAMS. FOR THESE REASONS, ACCUMULATED SEDIMENT NEEDS TO BE REMOVED FROM THE BASIN WHEN SEDIMENT DEPTH EXCEEDS 6 INCHES, WHEN SEDIMENT INTERFERES WITH THE LEVEL SENSOR, WHEN THE BASIN DOES NOT DRAIN WITHIN 48 HOURS, OR AT LEAST EVERY 5 YEARS.

LOGIC CONTROLLER. THE LOGIC CONTROLLER SHOULD BE INSPECTED AS PART OF THE TWICE YEARLY INSPECTIONS. VERIFY THAT THE EXTERNAL INDICATORS (ACTIVE, CYCLE IN PROGRESS) ARE OPERATING PROPERLY BY TURNING THE CONTROLLER OFF AND ON, AND BY INITIATING A CYCLE BY TRIGGERING THE LEVEL SENSOR IN THE BASIN. THE VALVE SHOULD BE MANUALLY OPENED AND CLOSED USING THE OPEN/CLOSE SWITCH TO VERIFY VALVE OPERATION AND TO ASSIST IN INSPECTING THE VALVE FOR DEBRIS. THE SOLAR PANEL SHOULD BE INSPECTED AND ANY DUST OR DEBRIS ON THE PANEL SHOULD BE CAREFULLY REMOVED. THE CONTROLLER AND ALL OTHER CIRCUITRY AND WIRING SHOULD BE INSPECTED FOR SIGNS OF CORROSION, DAMAGE FROM INSECTS, WATER LEAKS, OR OTHER DAMAGE. AT THE END OF THE INSPECTION, THE CONTROLLER SHOULD BE RESET.

ULTIMATELY, THESE FACILITIES WILL BE OWNED, OPERATED AND MAINTAINED BY THE PROPOSED WILLIAMSON COUNTY MUD NO. 19C UNTIL THE OWNERSHIP OF FACILITIES IS TRANSFERRED TO THE MUD, SANTA RITA C7 INVESTMENTS LLC WILL BE RESPONSIBLE FOR MAINTENANCE OF THESE FACILITIES IN ACCORDANCE WITH THE ABOVE STATED REQUIREMENTS.

### IMPERMEABLE LINER NOTES

IMPERMEABLE LINERS SHOULD BE USED FOR WATER QUALITY BASINS (RETENTION, EXTENDED DETENTION, SAND FILTERS, WET PONDS, CONSTRUCTED WETLANDS, AND BATCH DETENTION PONDS) LOCATED OVER THE RECHARGE ZONE AND IN AREAS WITH THE POTENTIAL FOR GROUNDWATER CONTAMINATION. IMPERMEABLE LINERS MAY BE CLAY, CONCRETE OR GEOMEMBRANE. IF GEOMEMBRANE IS USED, SUITABLE GEOTEXTILE FABRIC SHOULD BE PLACED ON THE TOP AND BOTTOM OF THE MEMBRANE FOR PUNCTURE PROTECTION AND THE LINERS COVERED WITH A MINIMUM OF 6 INCHES OF COMPACTED TOPSOIL. THE TOPSOIL SHOULD BE STABILIZED WITH APPROPRIATE VEGETATION. CLAY LINERS SHOULD MEET THE SPECIFICATIONS IN TABLE 3-6 AND HAVE A MINIMUM THICKNESS OF 12 INCHES.

TABLE 3-6 CLAY LINER SPECIFICATIONS (COA, 2004)

PROPERTY	TEST METHOD	UNIT	SPECIFICATION (MIN.)
PERMEABILITY	ASTM D-2434	%	1 x 10 <sup>-6</sup>
PLASTICITY INDEX OF CLAY	ASTM D-423 & D-424	%	NOT LESS THAN 15
LIQUID LIMIT OF CLAY	ASTM D-2216	%	NOT LESS THAN 30
CLAY PARTICLES PASSING	ASTM D-422	%	NOT LESS THAN 30
CLAY COMPACTION	ASTM D-2216	%	95% OF STANDARD PROCTOR DENSITY

IF A GEOMEMBRANE LINER IS USED IT SHOULD HAVE A MINIMUM THICKNESS OF 30 MILS AND BE ULTRAVIOLET RESISTANT. THE GEOTEXTILE FABRIC (FOR PROTECTION OF GEOMEMBRANE) SHOULD BE NONWOVEN GEOTEXTILE FABRIC AND MEET THE SPECIFICATIONS IN TABLE 3-7.

TABLE 3-7 GEOTEXTILE FABRIC SPECIFICATIONS (COA, 2004)

PROPERTY	TEST METHOD	UNIT	SPECIFICATION (MIN.)
UNIT WEIGHT		OZ/YD <sup>2</sup>	8
FILTRATION RATE		IN/SEC	0.0800
PUNCTURE STRENGTH	ASTM D-751*	lb	125
MULLEN BURST STRENGTH	ASTM-D751	psi	400
TENSILE STRENGTH	ASTM D-1682	lb	200
EQUIV. OPENING SIZE	US STANDARD SIEVE	No.	80
	*MODIFIED		

### PROTECTIVE SOIL LAYER NOTES

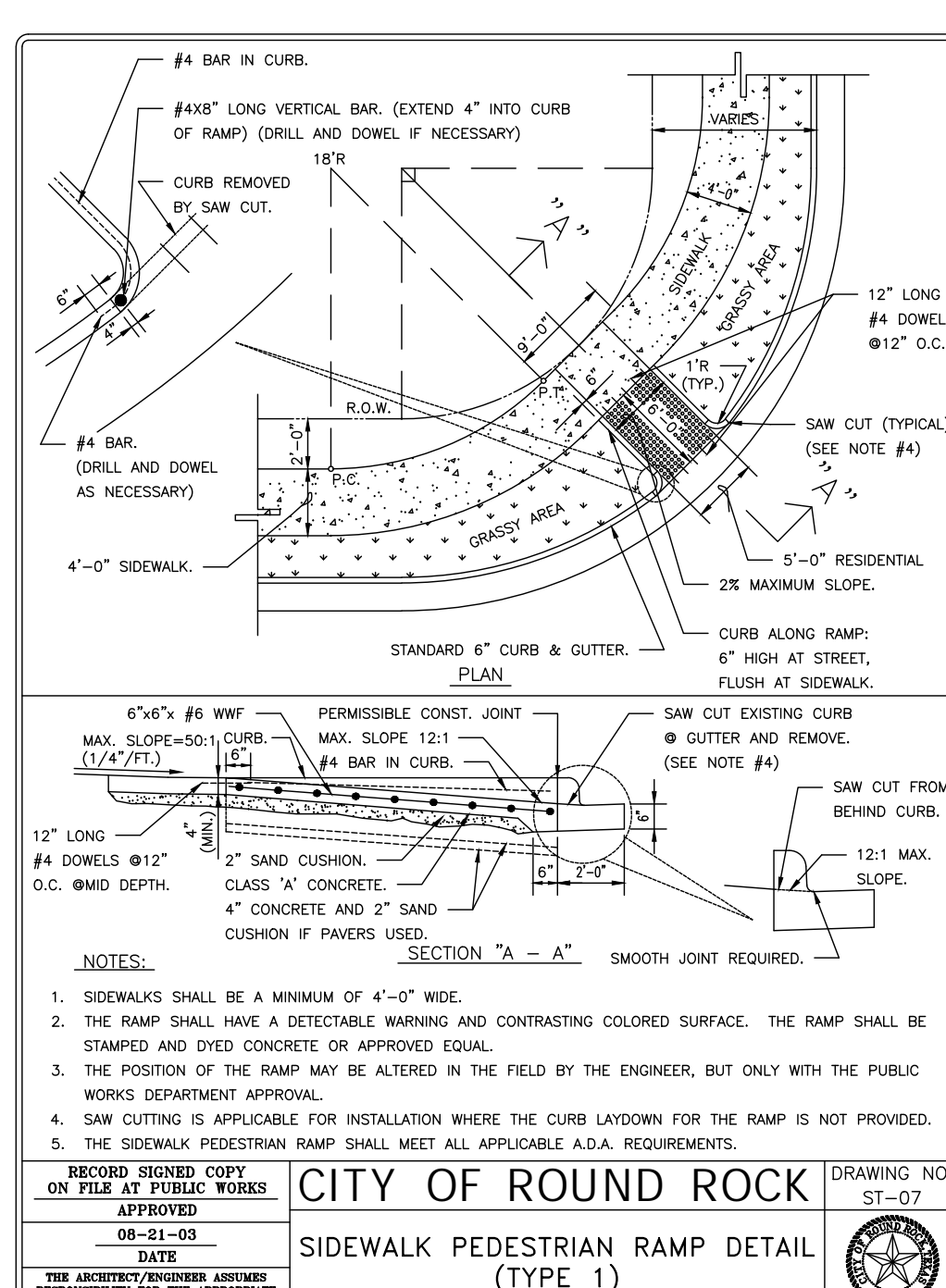
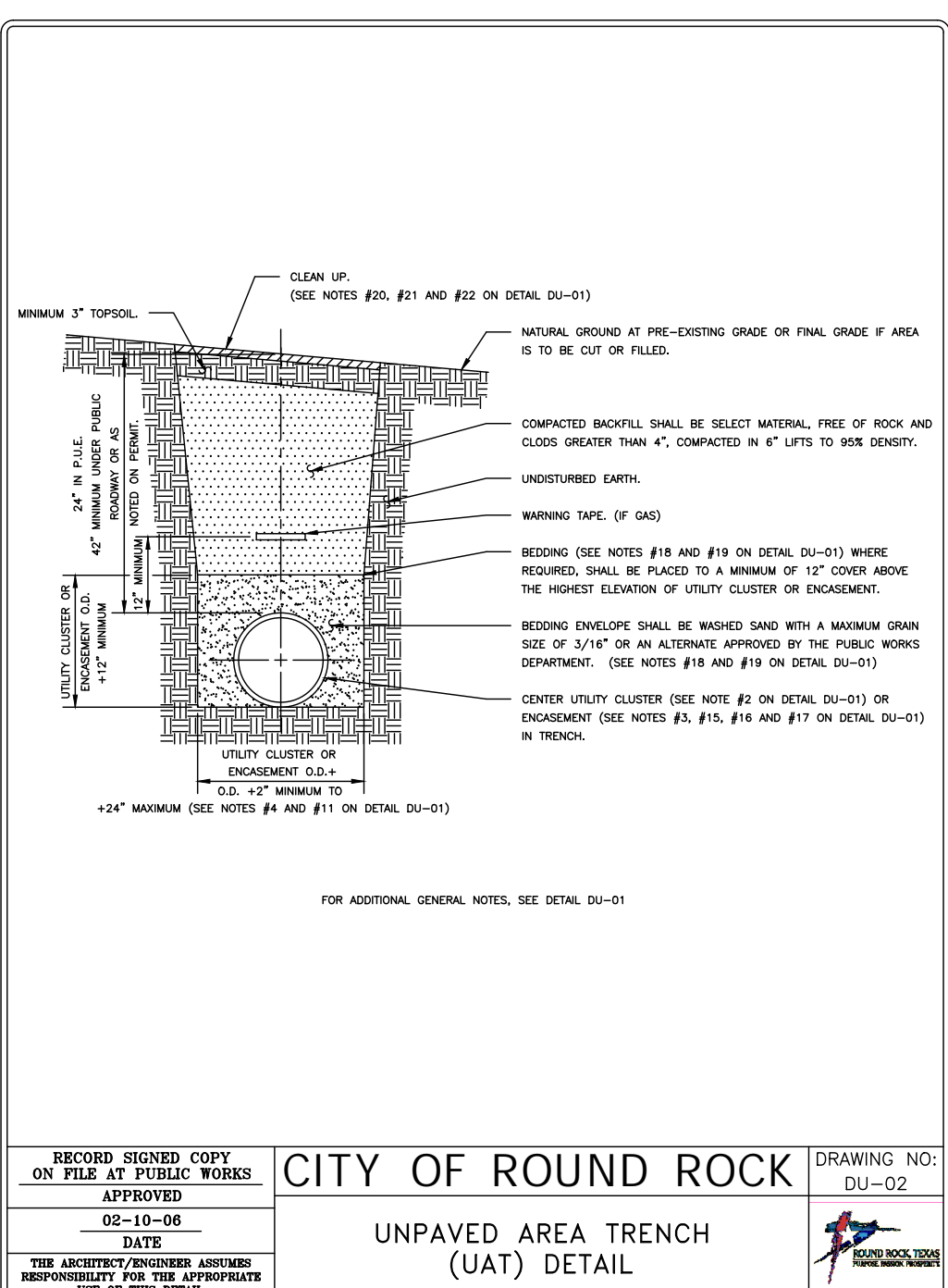
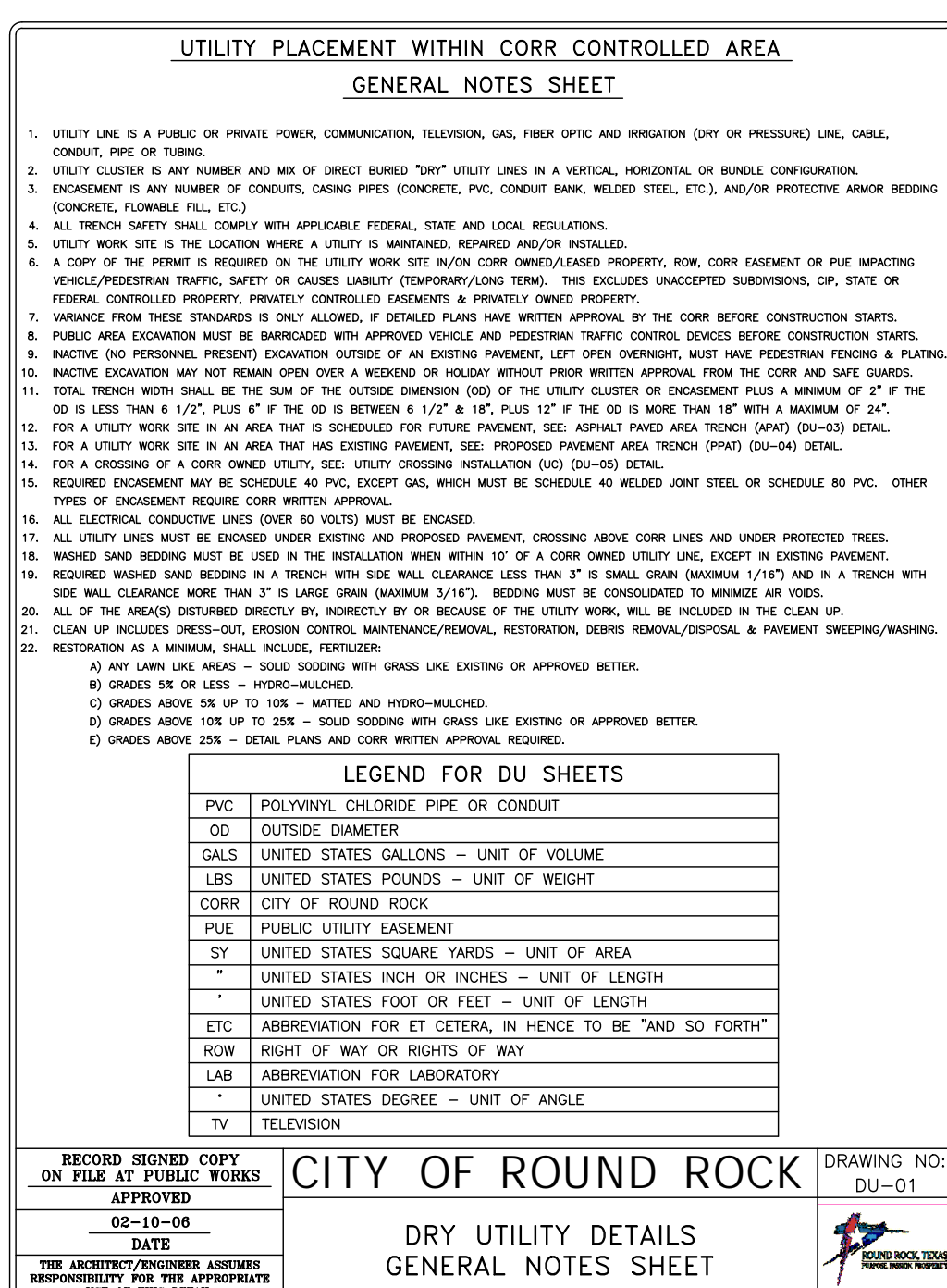
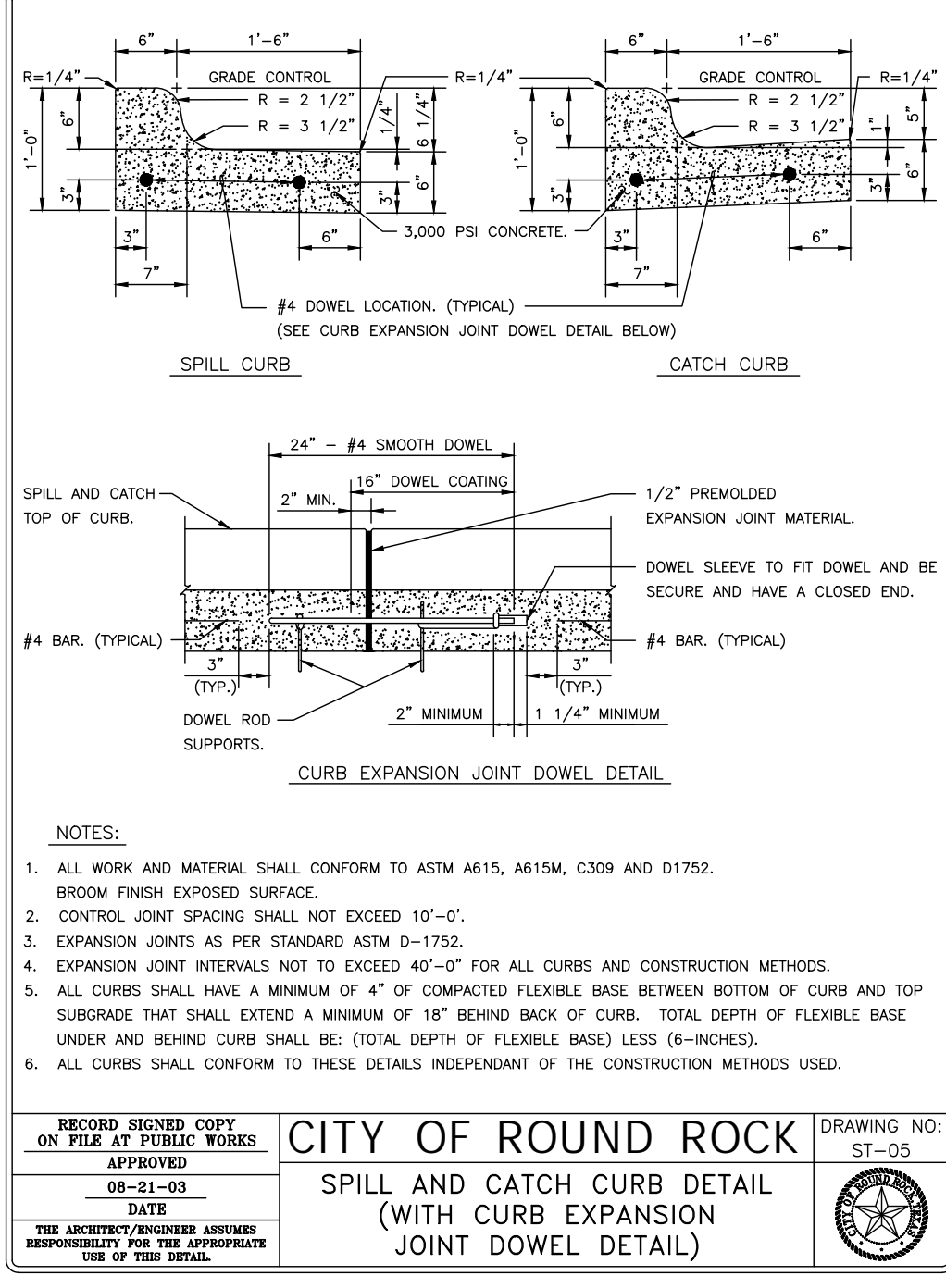
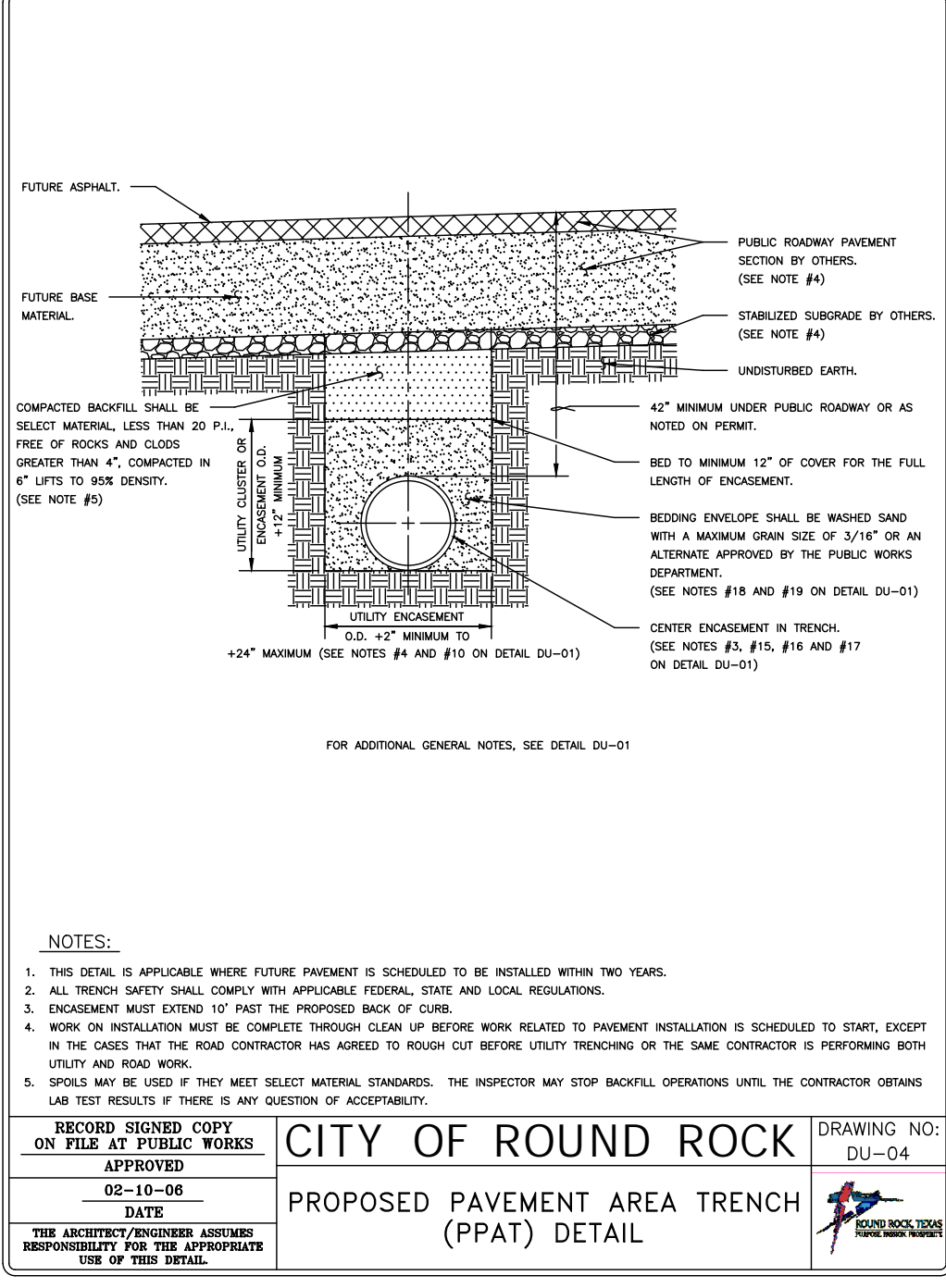
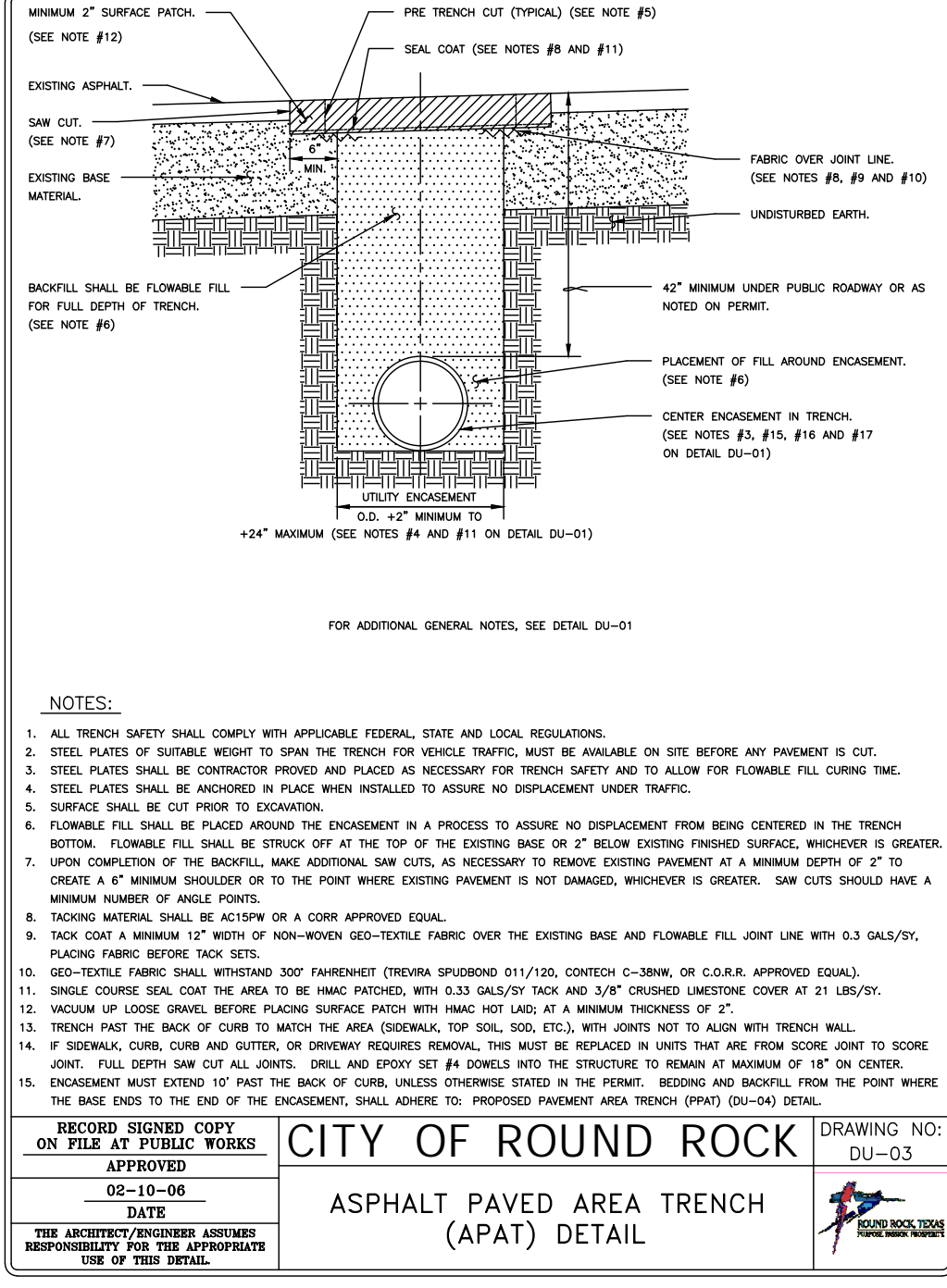
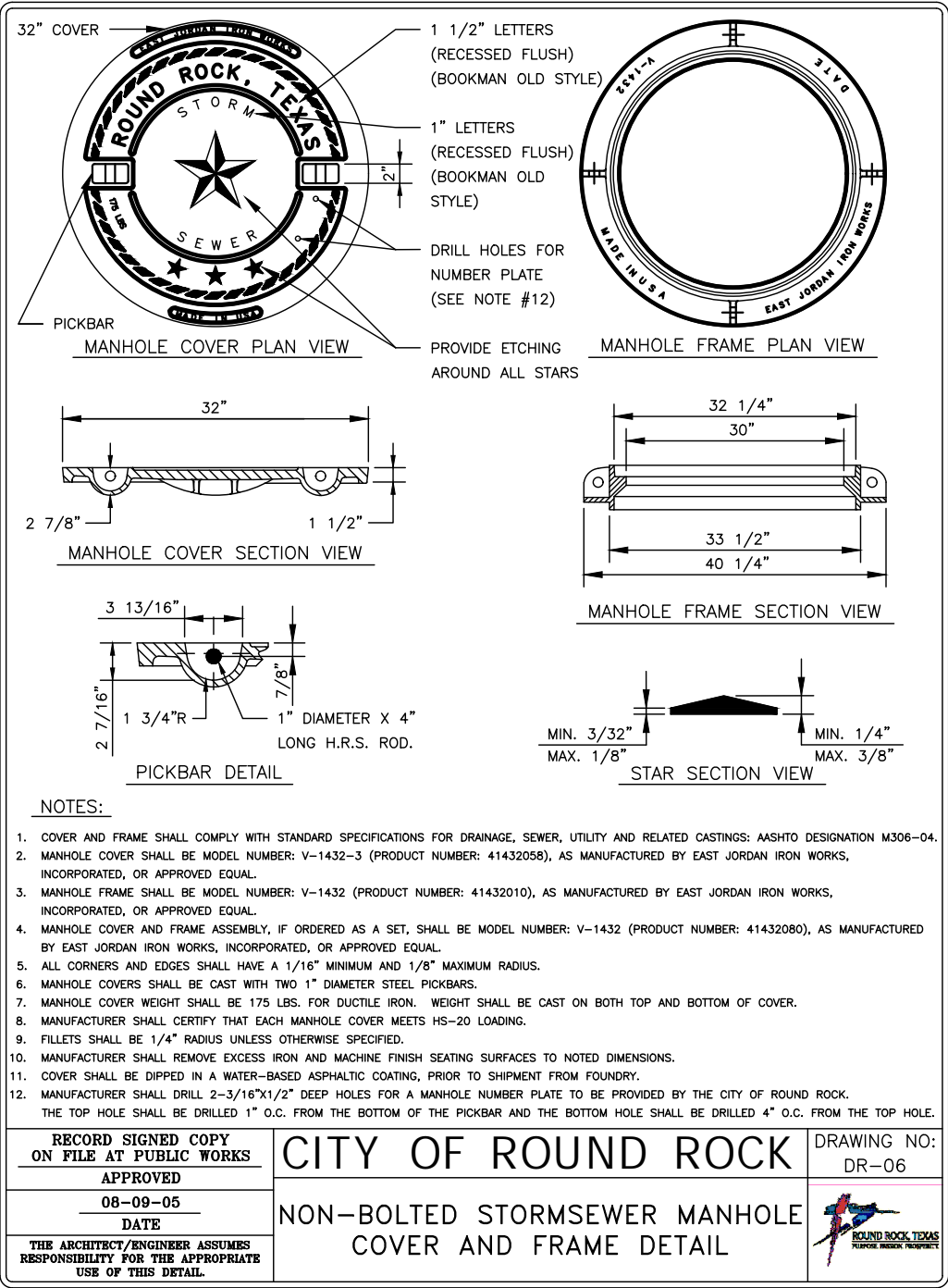
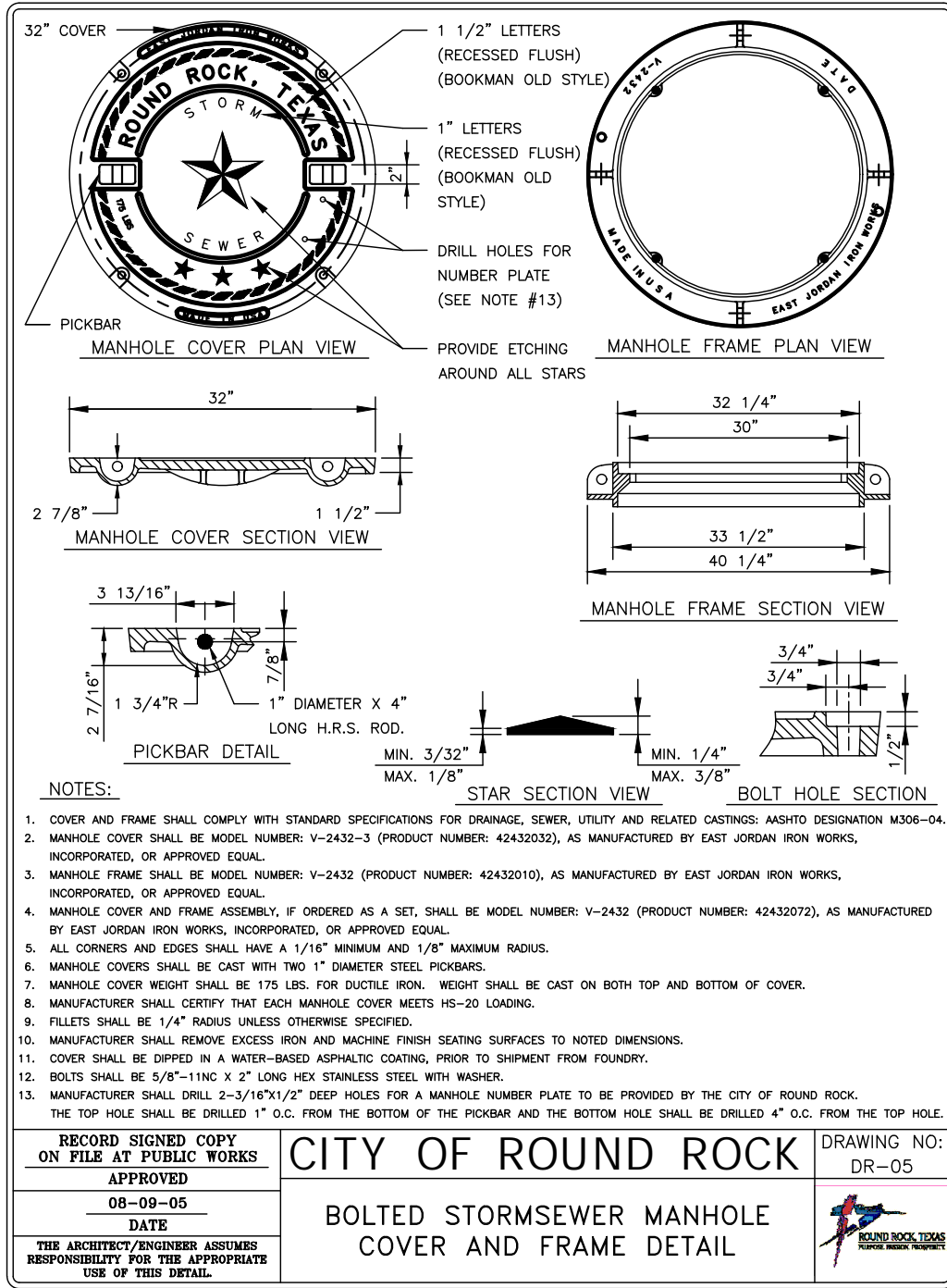
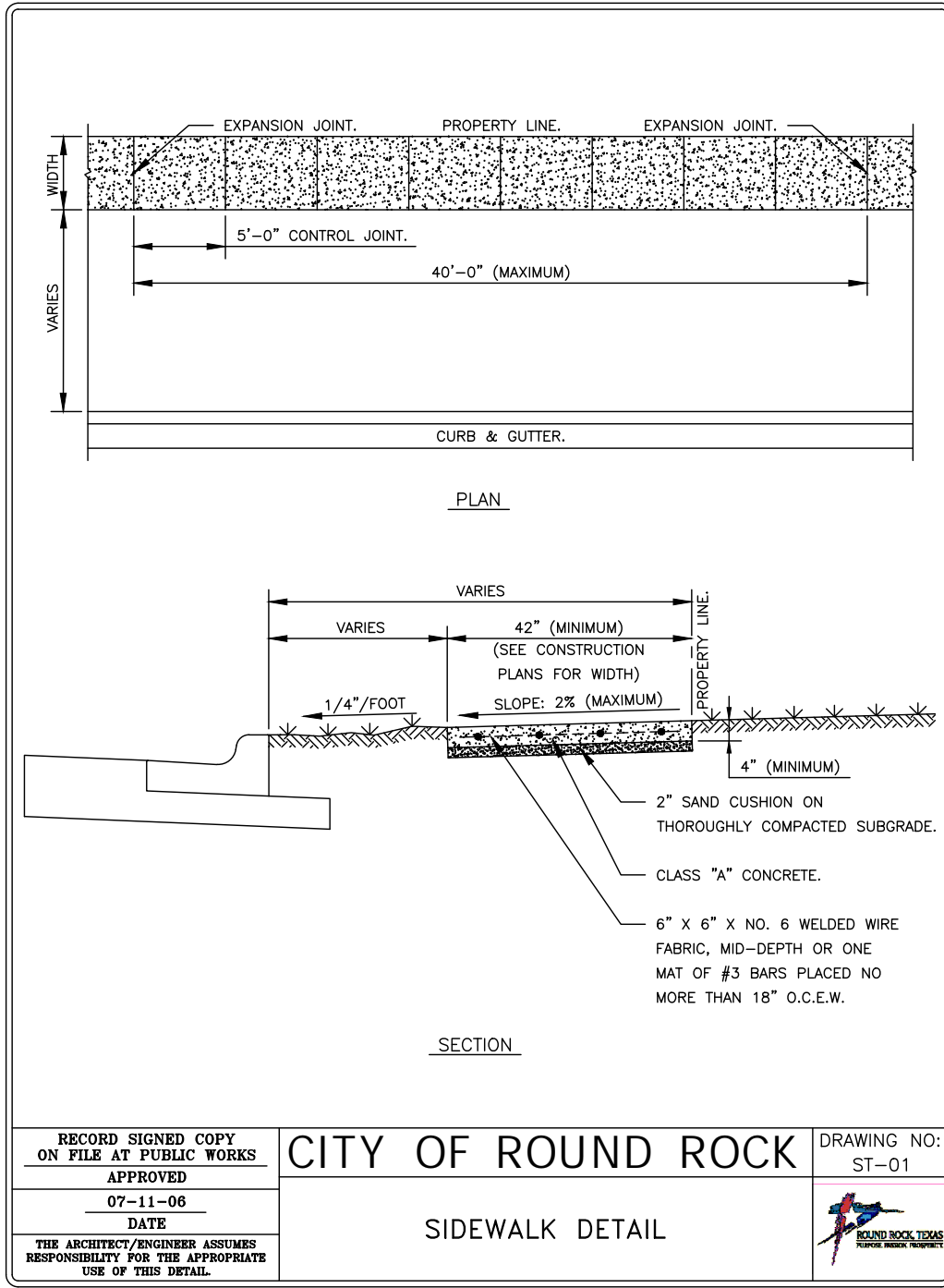
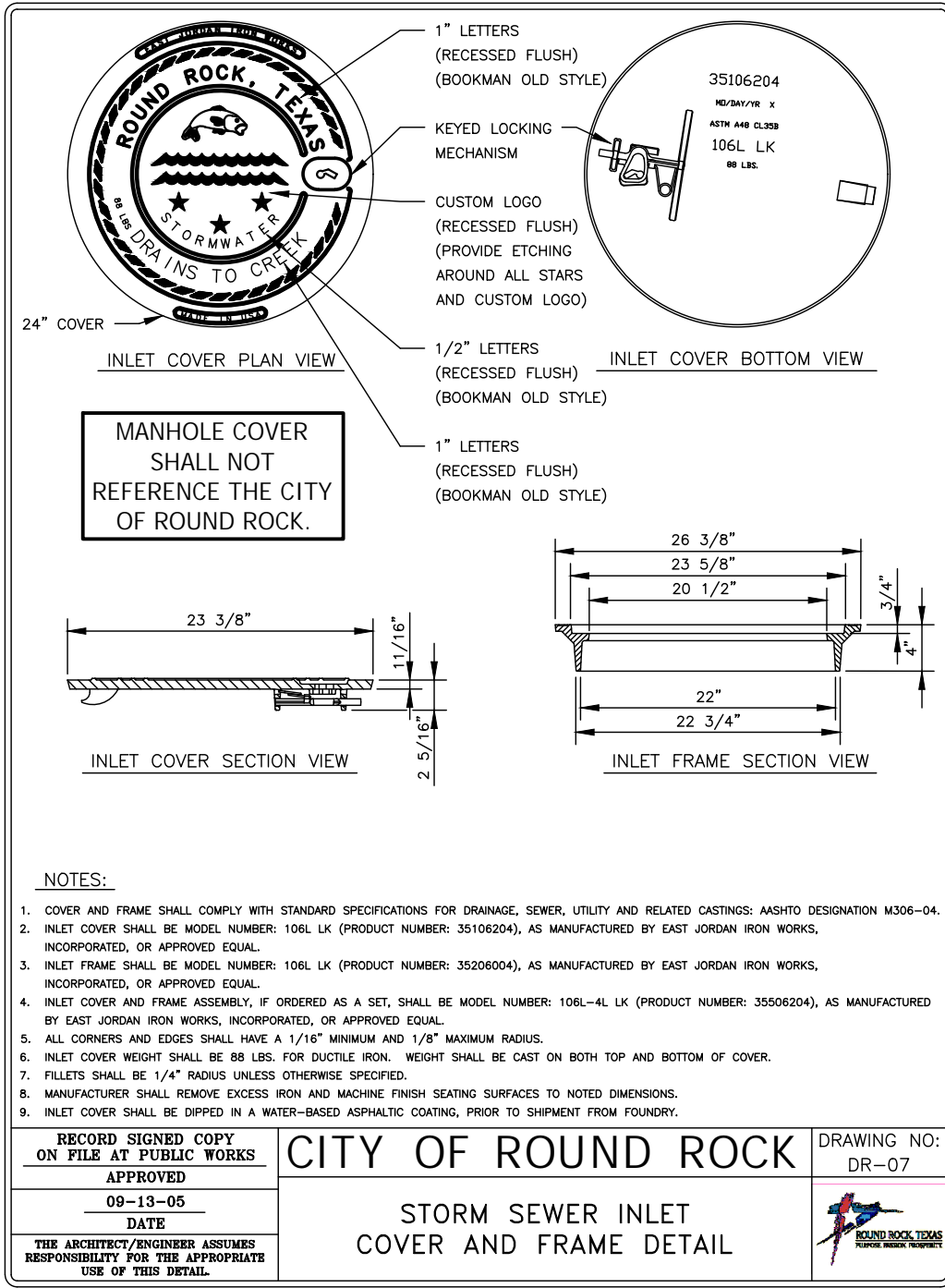
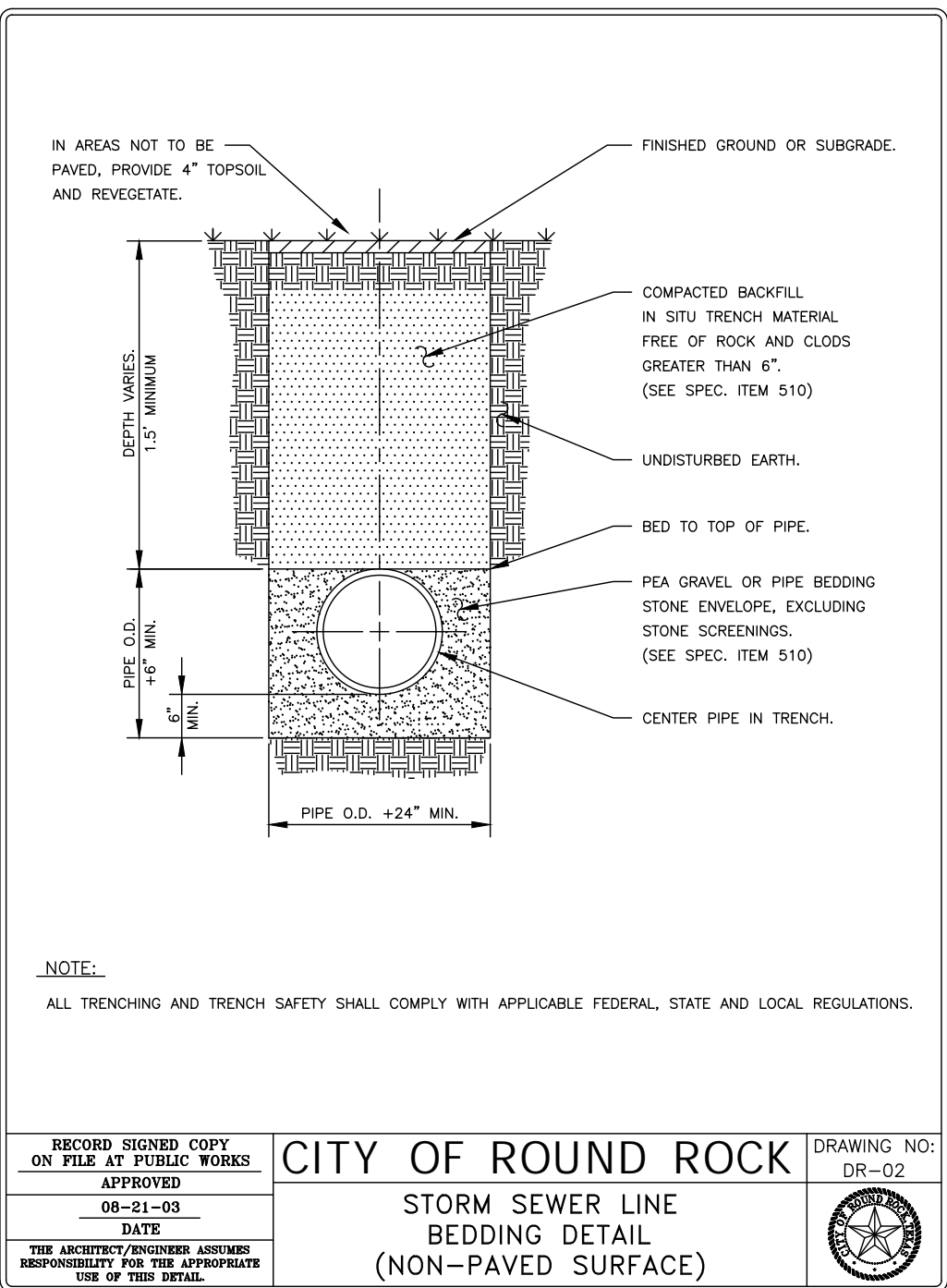
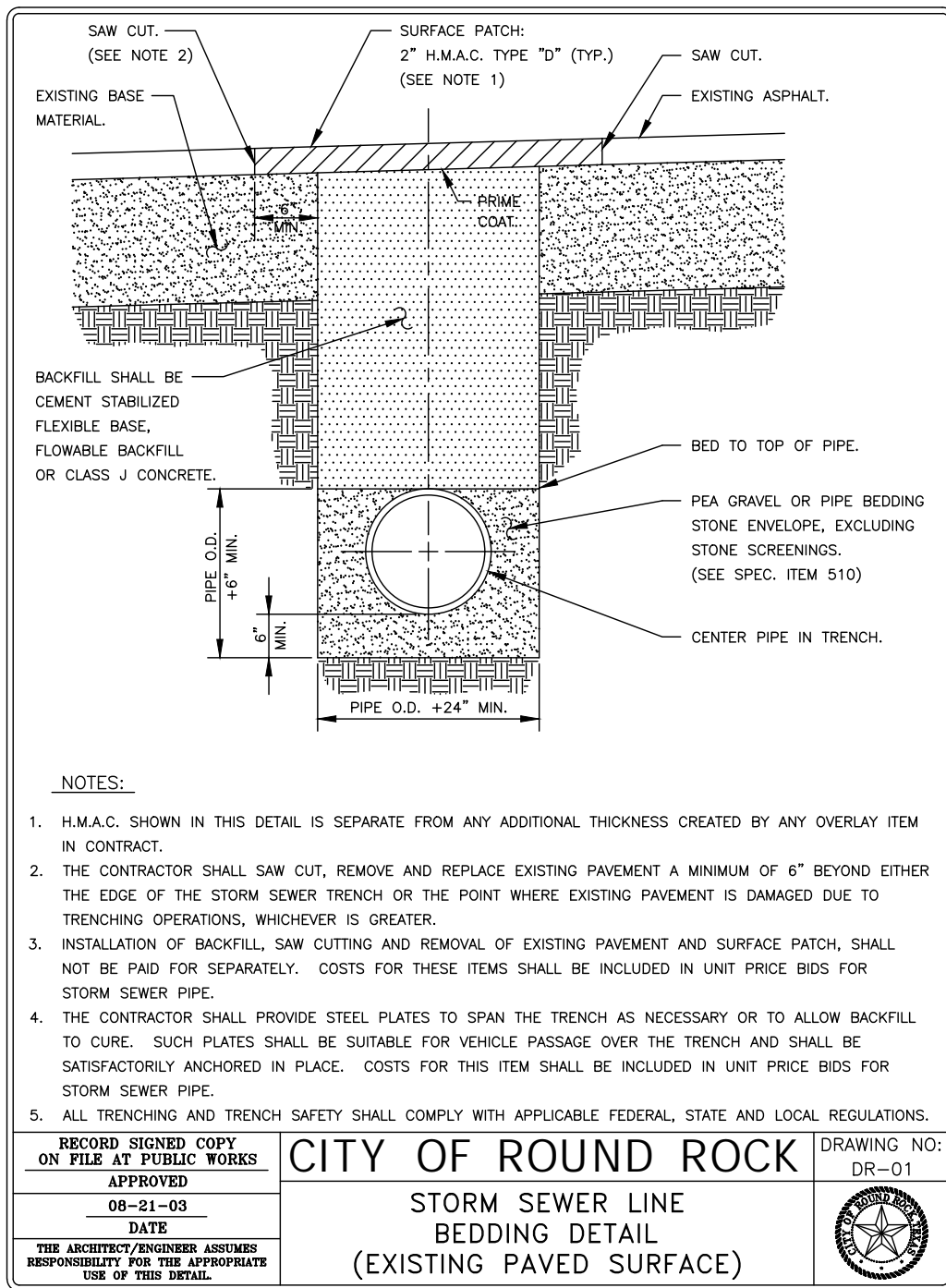
THE WET AND BATCH DETENTION PONDS WILL BE CONSTRUCTED WITH A MINIMUM OF 12" OF A PROTECTION SOIL LAYER ABOVE THE SELECTED IMPERMEABLE LINER SO THAT PLANTINGS CAN BE PROPERLY INSTALLED ABOVE THE LINER AND LINER INTEGRITY CAN BE MAINTAINED.

MATERIAL PLACED OVER LINER TO CONSIST OF SOIL THAT CLASSIFIES PER USDA STANDARDS AS A SANDY CLAY LOAM, SANDY CLAY, OR CLAY LOAM. THE SOIL SHALL BE FREE OF ORGANICS AND ANGULAR/SHARP MATERIALS, AND SHALL CONTAIN NO MATERIALS GREATER THAN 1" IN DIAMETER. MATERIAL TO BE PLACED AND COMPACTED IN TWO UNIFORM LIFTS.

DESIGNED BY: SPC	DRAFTED BY: CFH
DATE	
REVISION	
<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering ♦ Surveying FIRM ID #13791 5501 West Williamson Canyon Dr. Austin, Texas 78749 Phone No. (512) 280-5160 Fax No. (512) 280-5165	
<b>POND DETAILS</b> JOB NAME: SADDLEBACK AT SANTA RITA RANCH PHASE 1 SECTION 3 PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS	
SHEET NAME:	
STATE OF TEXAS STEVEN P. CATES 93648 LICENSED PROFESSIONAL ENGINEER Carlson, Brigrance & Doering, Inc. ID# F3791 12-1-2023	
DATE	OCT 2023
JOB NUMBER	5413
SHEET	41 OF 73
SHEET NO.	41

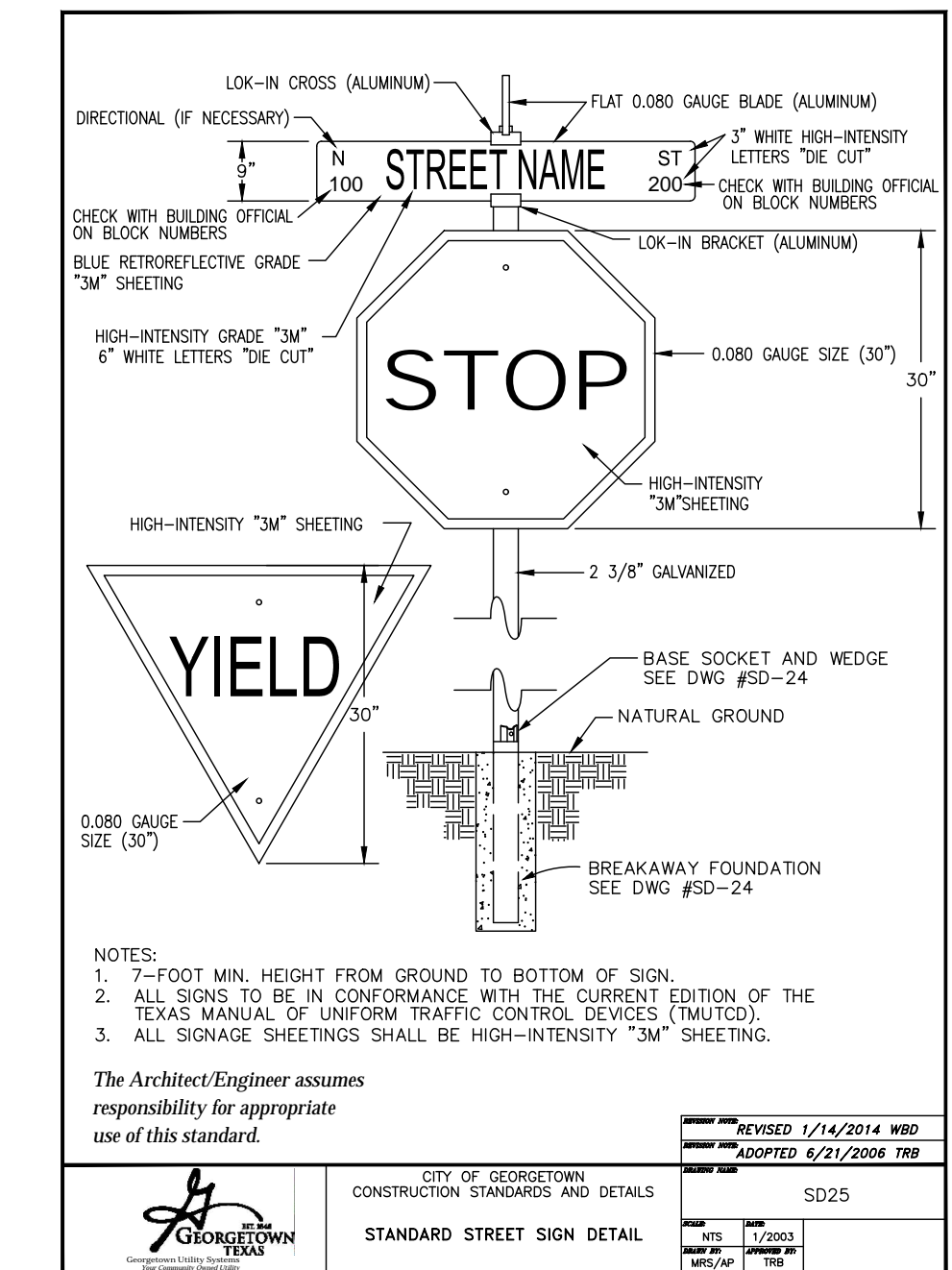
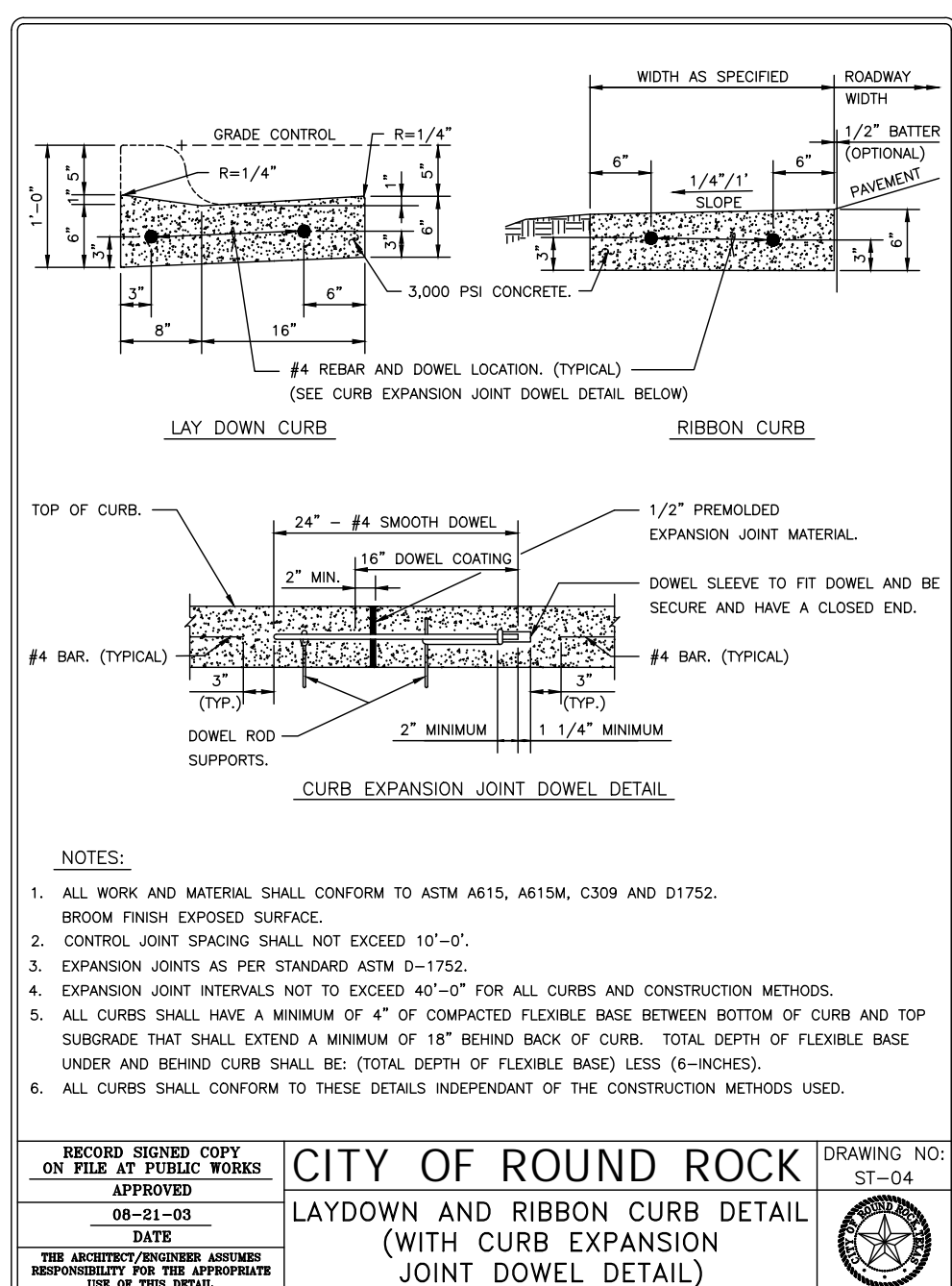
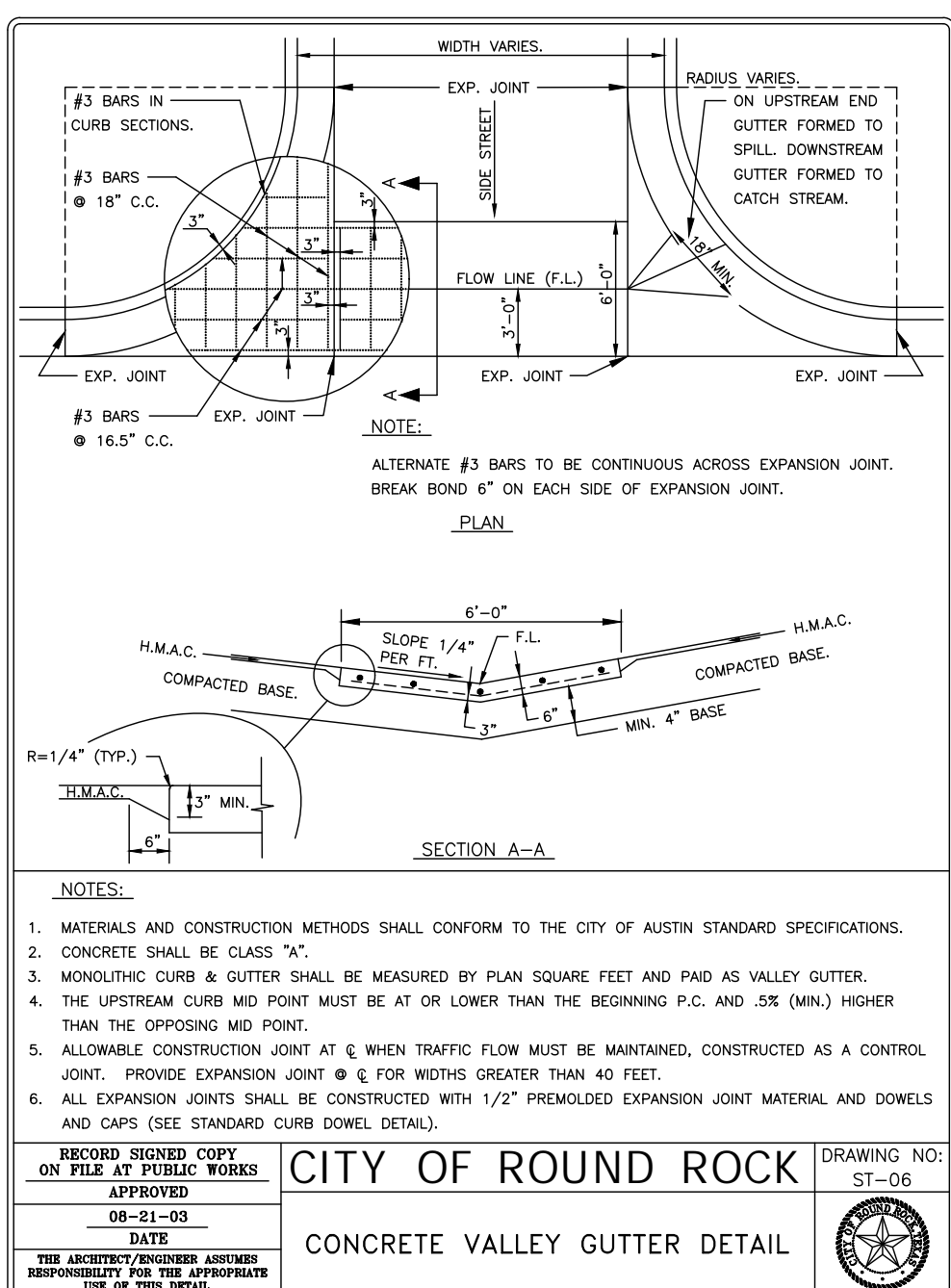
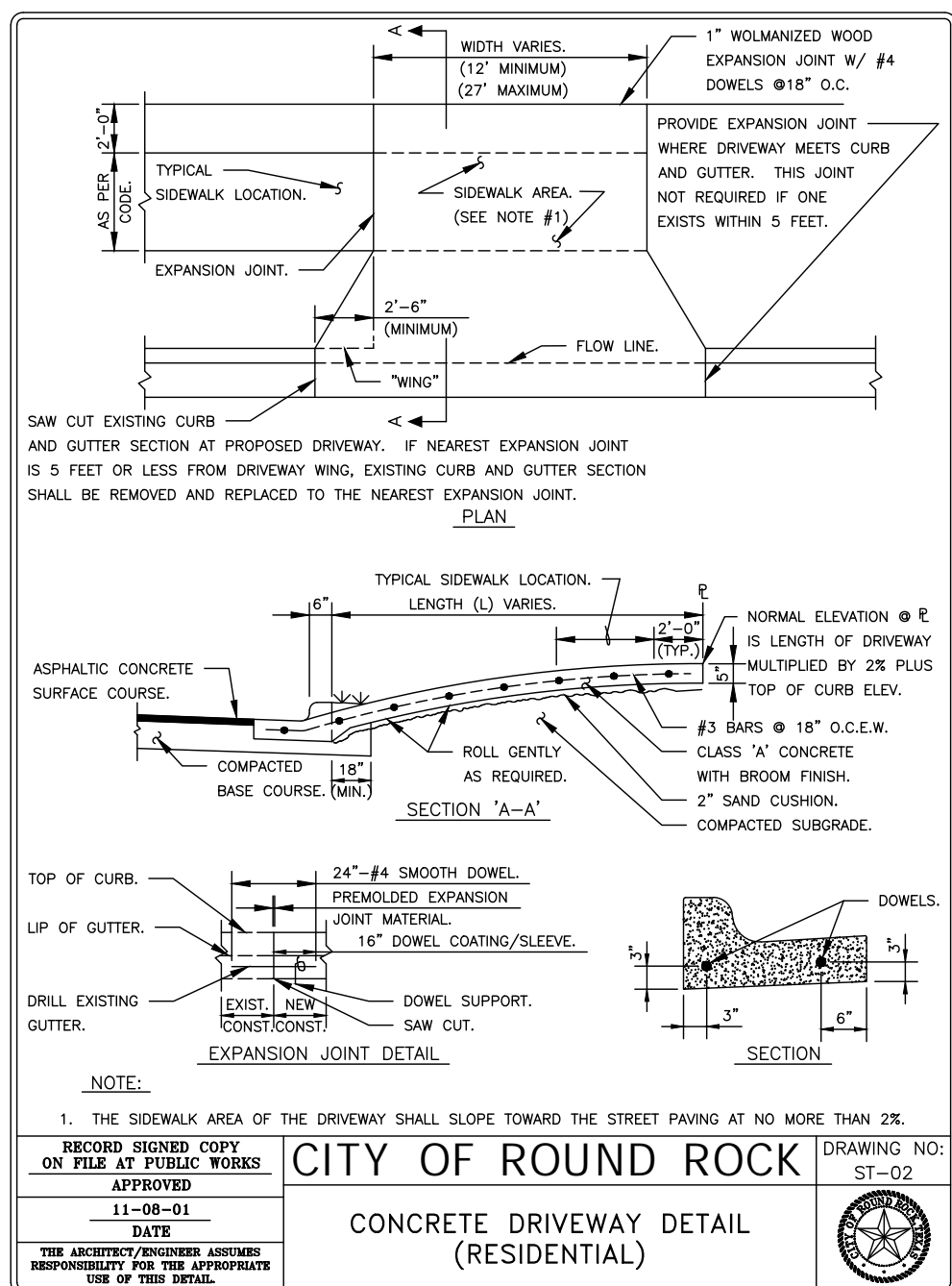
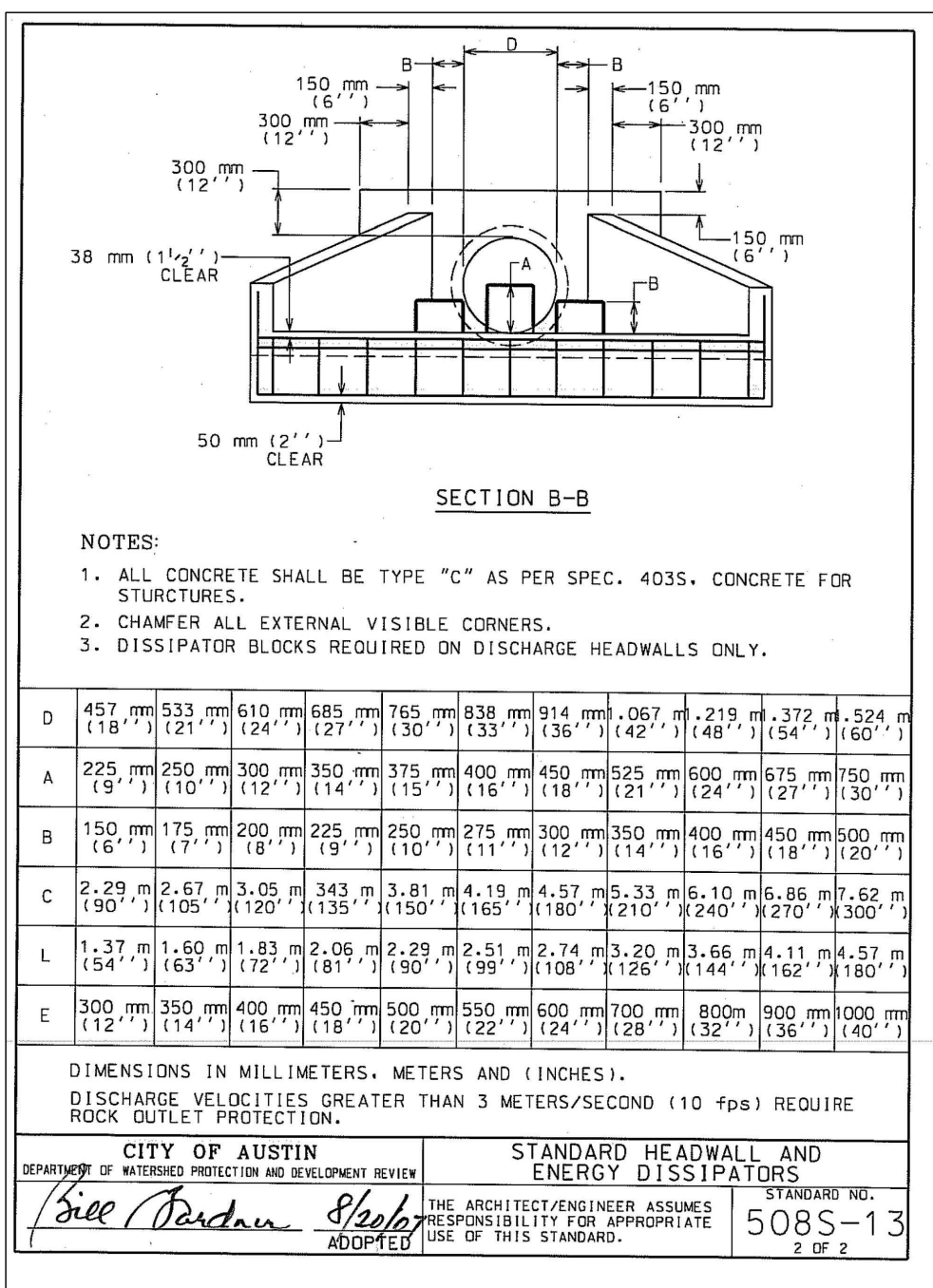
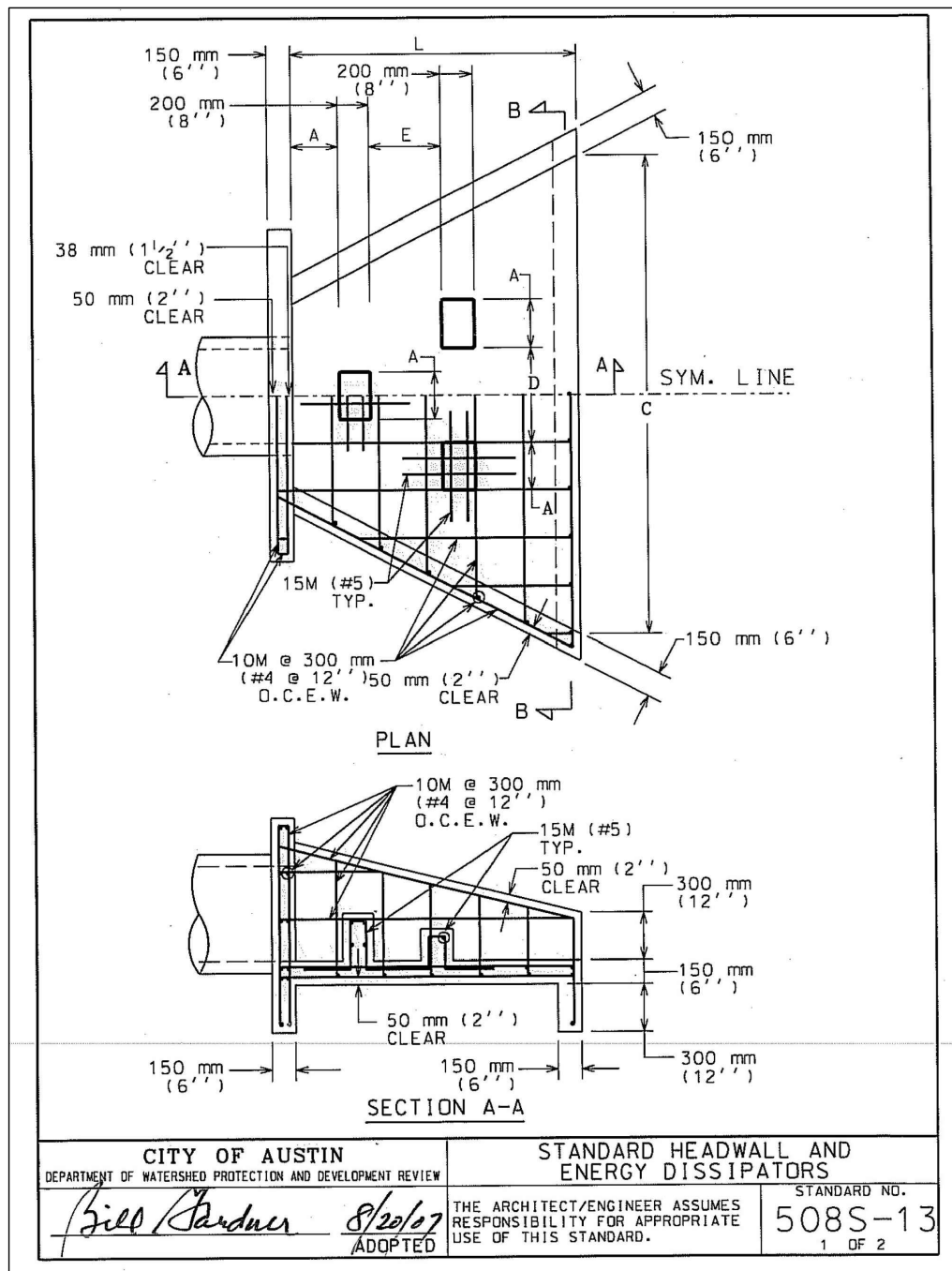
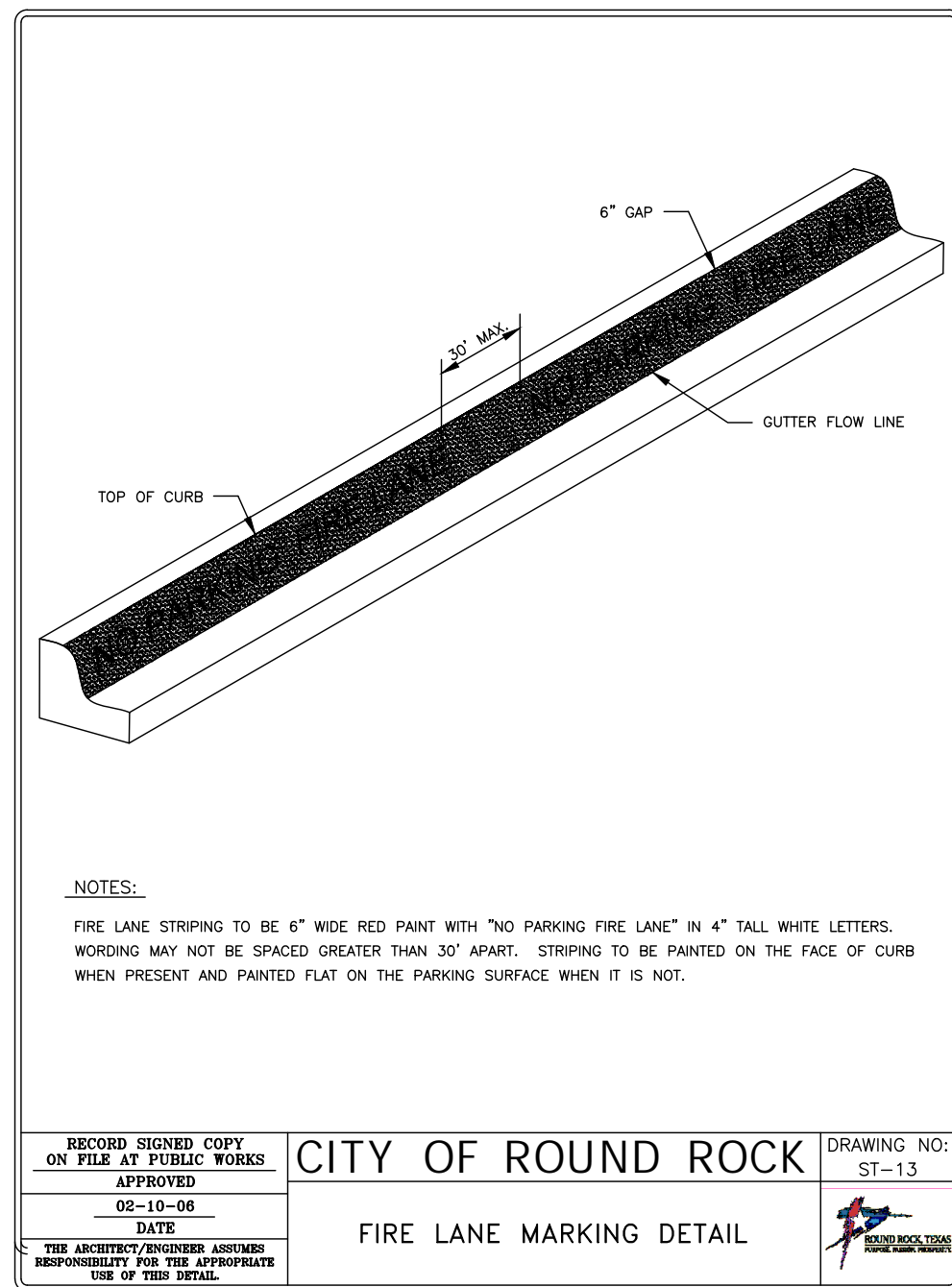
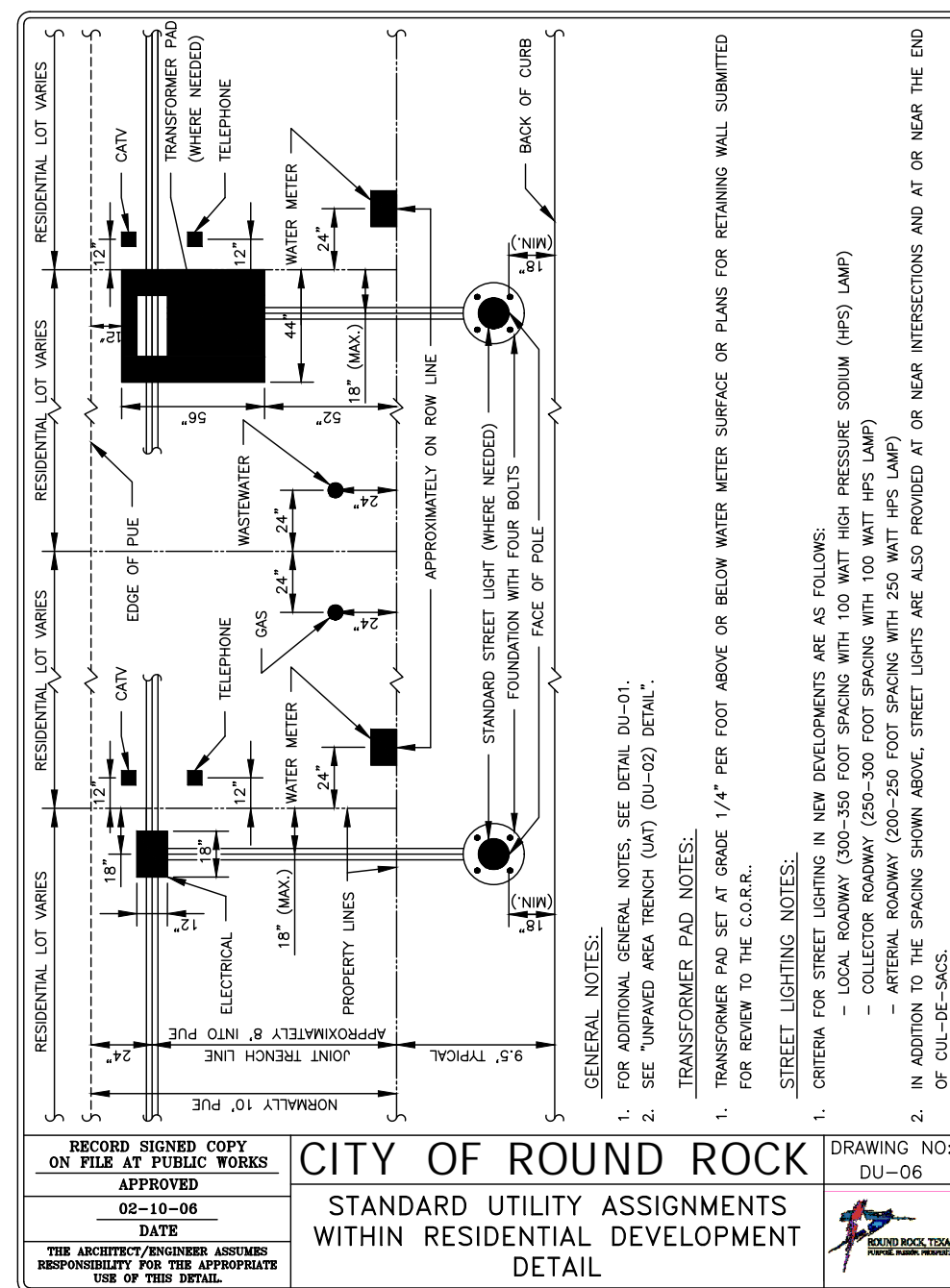
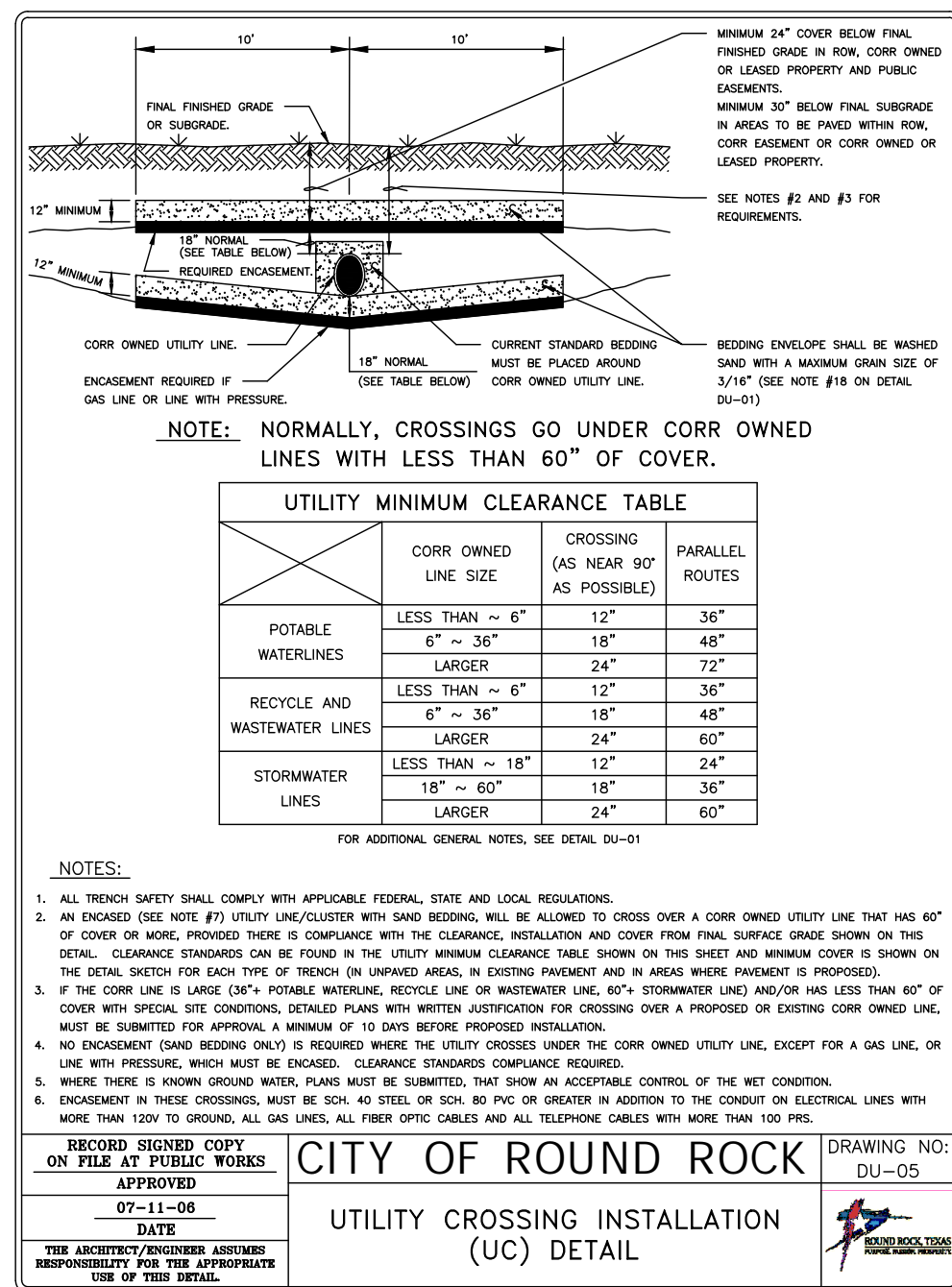
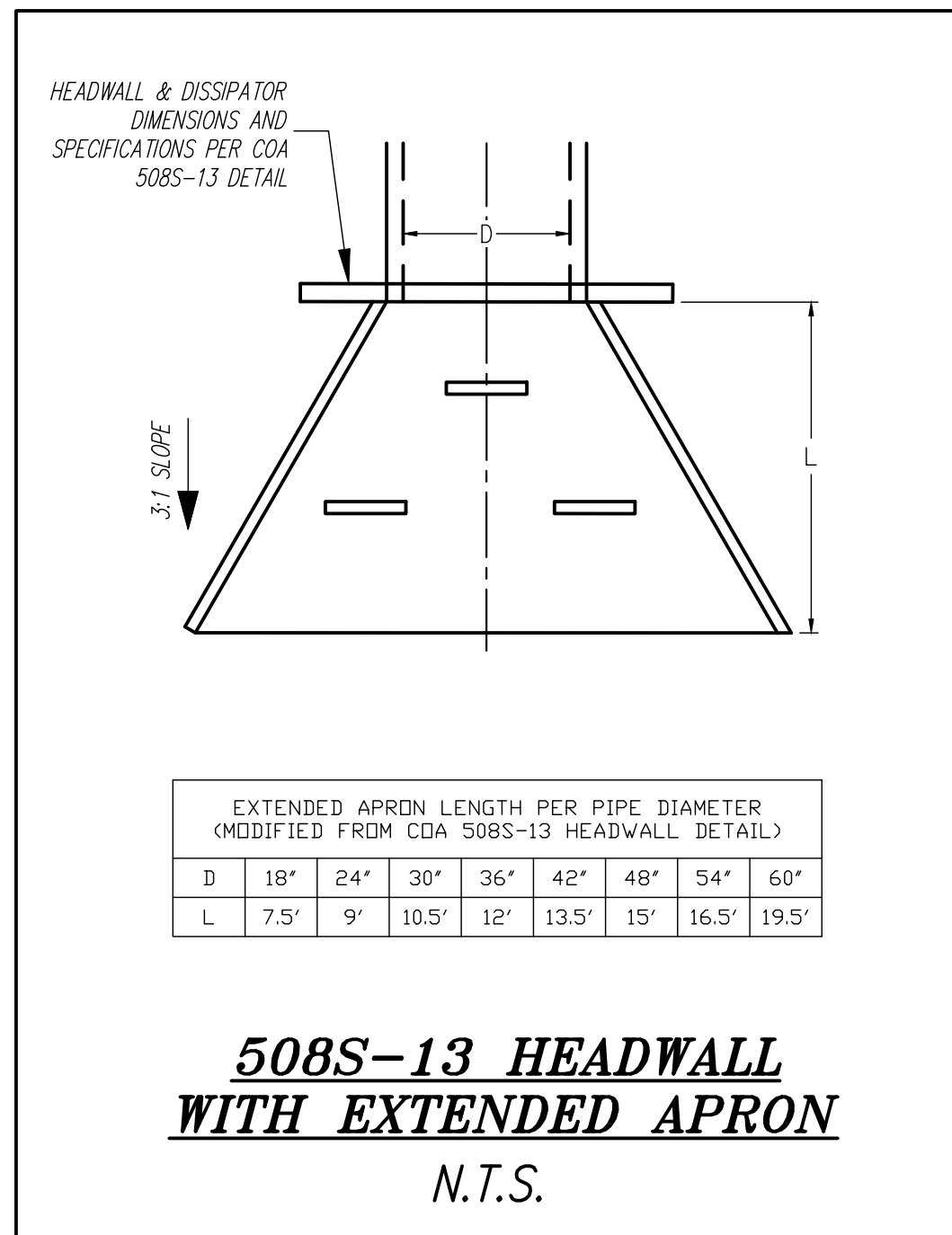
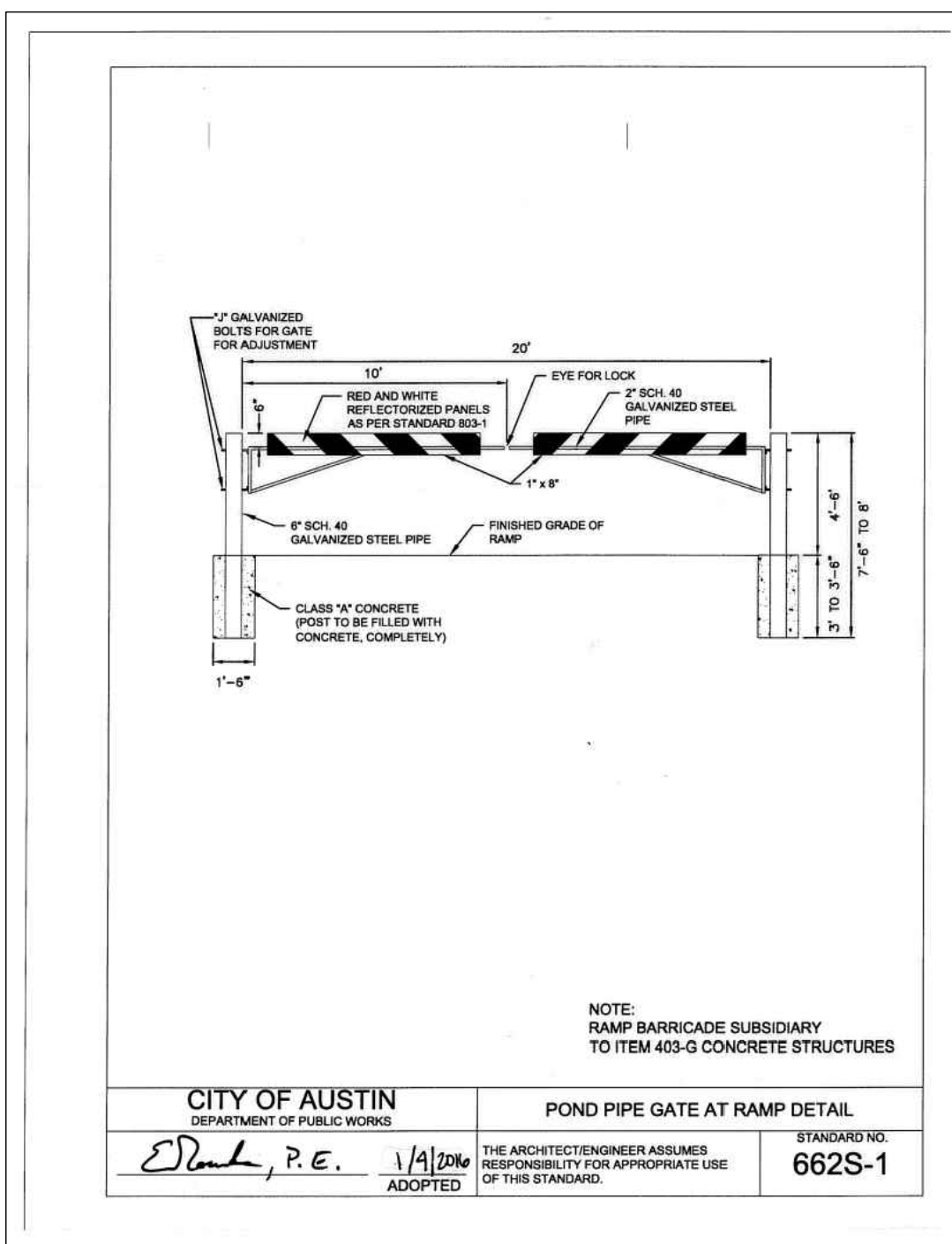


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DESIGNED BY: SPC	DRAFTED BY: CFI
DATE	
REVISION	
<b>Carlson, Brigrance &amp; Doering, Inc.</b> Civil Engineering • Surveying FIRM ID #15191 Main Office: 5501 West Williams Canyon Dr., Austin, Texas 78750 South Office: 12129 RR (33) N. Ste. 600, Austin, Texas 78750 Fax No. (512) 286-5160	
<b>CONSTRUCTION DETAILS (1 OF 3)</b> <b>JOB NAME: SADDLEBACK AT SANTA RITA RANCH</b> <b>PHASE 1 SECTION 3</b> <b>PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS</b>	
SHEET NAME:	
DATE: OCT 2023	
JOB NUMBER: 5413	
SHEET: 69 OF 73	
SHEET NO: 69	





**DESIGNED BY:** SPK  
**DRAFTED BY:** CFI

**DATE:**  
**REVISION:**

**CITY OF AUSTIN**  
DEPARTMENT OF PUBLIC WORKS  
DESIGNED BY: *Bill Gardner, P.E.*  
DATE: 1/1/2014  
APPROVED: *Bill Gardner, P.E.*  
STANDARD NO. 508S-13  
2 OF 2

**CITY OF ROUND ROCK**  
UTILITY CROSSING INSTALLATION (UC) DETAIL  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF ROUND ROCK**  
STANDARD UTILITY ASSIGNMENTS WITHIN RESIDENTIAL DEVELOPMENT DETAIL  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF ROUND ROCK**  
FIRE LANE MARKING DETAIL  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF AUSTIN**  
STANDARD HEADWALL AND ENERGY DISSIPATORS  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF AUSTIN**  
STANDARD HEADWALL AND ENERGY DISSIPATORS  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF ROUND ROCK**  
CONCRETE DRIVEWAY DETAIL (RESIDENTIAL)  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF ROUND ROCK**  
CONCRETE VALLEY GUTTER DETAIL  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF ROUND ROCK**  
LAYDOWN AND RIBBON CURB DETAIL (WITH CURB EXPANSION JOINT DOWEL DETAIL)  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CITY OF GEORGETOWN**  
STANDARD STREET SIGN DETAIL  
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS  
APPROVED: 02-10-08  
DATE: 02-10-08  
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

**CONSTRUCTION DETAILS (2 OF 3)**

**JOB NAME:** SADDLEBACK AT SANTA RITA RANCH  
**PHASE 1 SECTION 3**

**PROJECT:** STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS

**SHEET NAME:**

**DATE:** OCT 2023  
**JOB NUMBER:** 5413  
**SHEET:** 70 OF 73  
**SHEET NO.:** 70

**CARLSON, BRIGANCE & DOERING, Inc.**  
Civil Engineering  
FIRM ID #13791  
Main Office: 12129 RR 630 N. Ste. 600  
Austin, Texas 78749  
Fax No. (512) 280-5160

**STATE OF TEXAS**  
STEVEN P. CATES  
93648  
LICENSED PROFESSIONAL ENGINEER  
CARLSON, BRIGANCE & DOERING, INC.  
ID# F3791  
12-1-2023

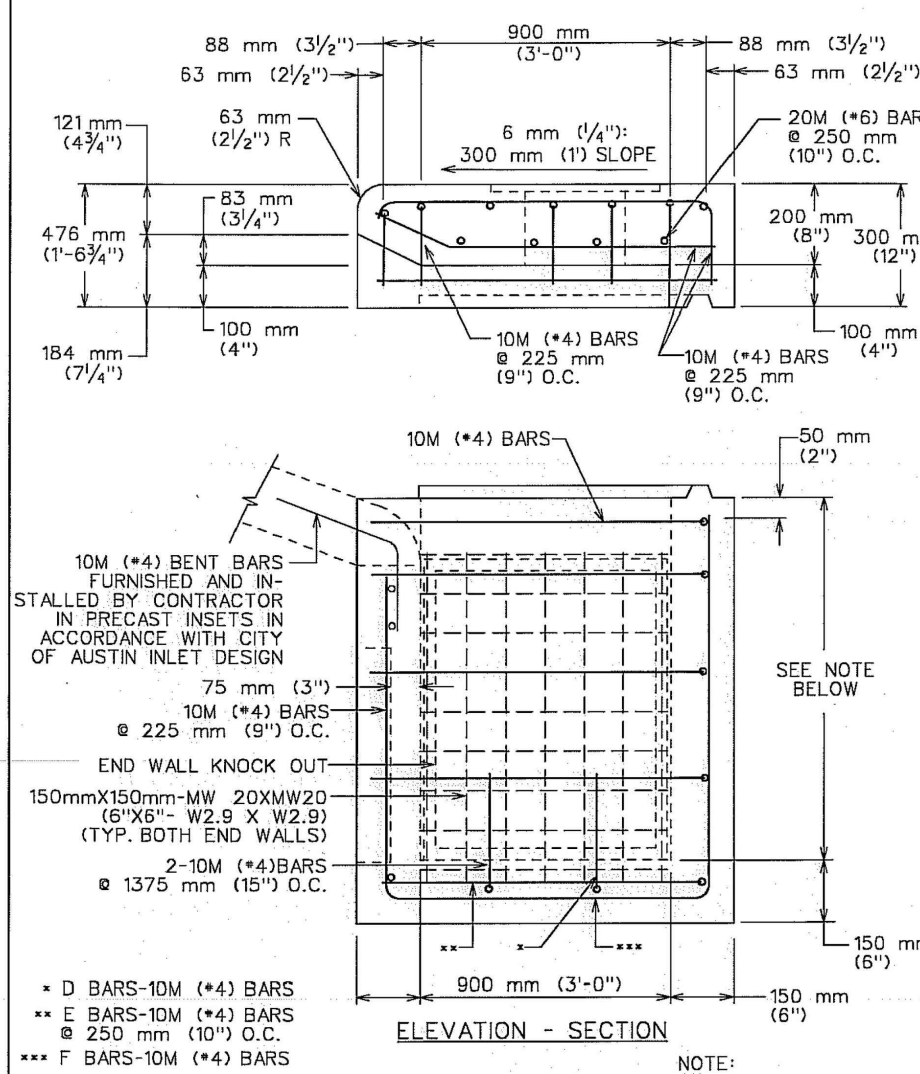


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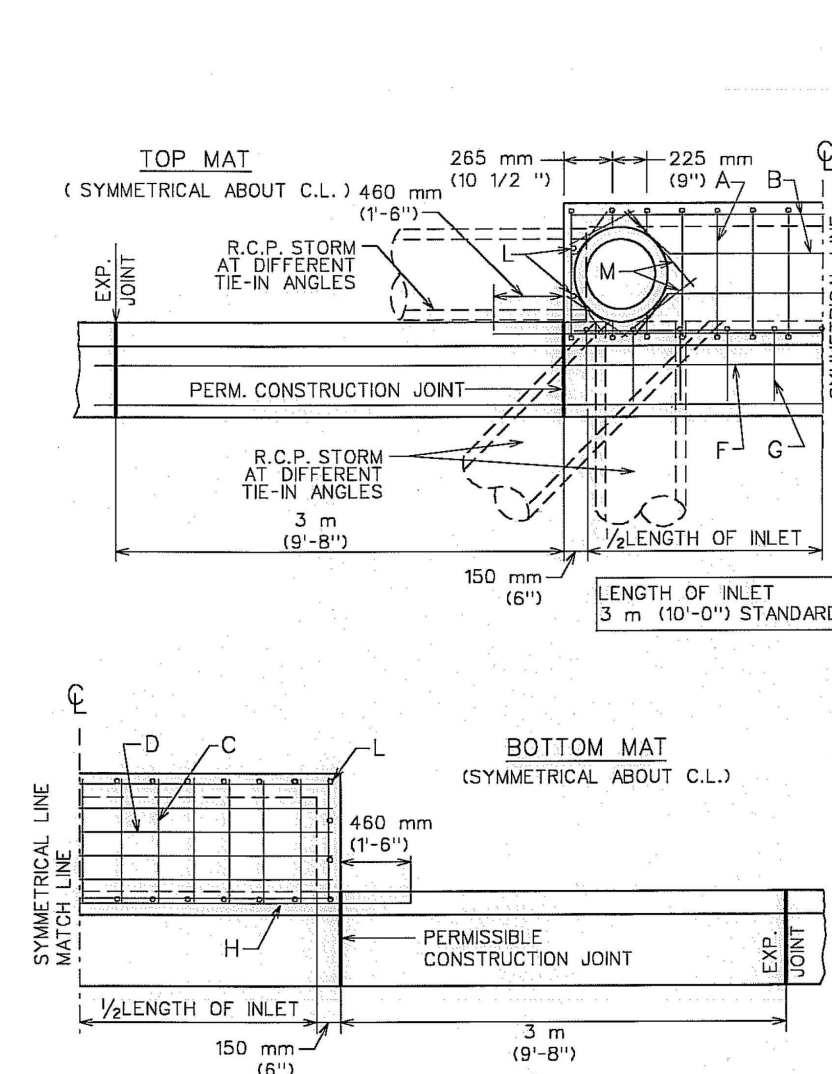
FOR EXPANSION JOINT DOWEL AND DOWEL LOCATION DETAILS  
SEE STD. 430S-3, "CURB EXPANSION JOINT DOWEL DETAIL".

FOR 18" MANHOLE FRAME AND COVER DETAILS  
SEE STD. 503S-1, "18" COVER AND FRAME".

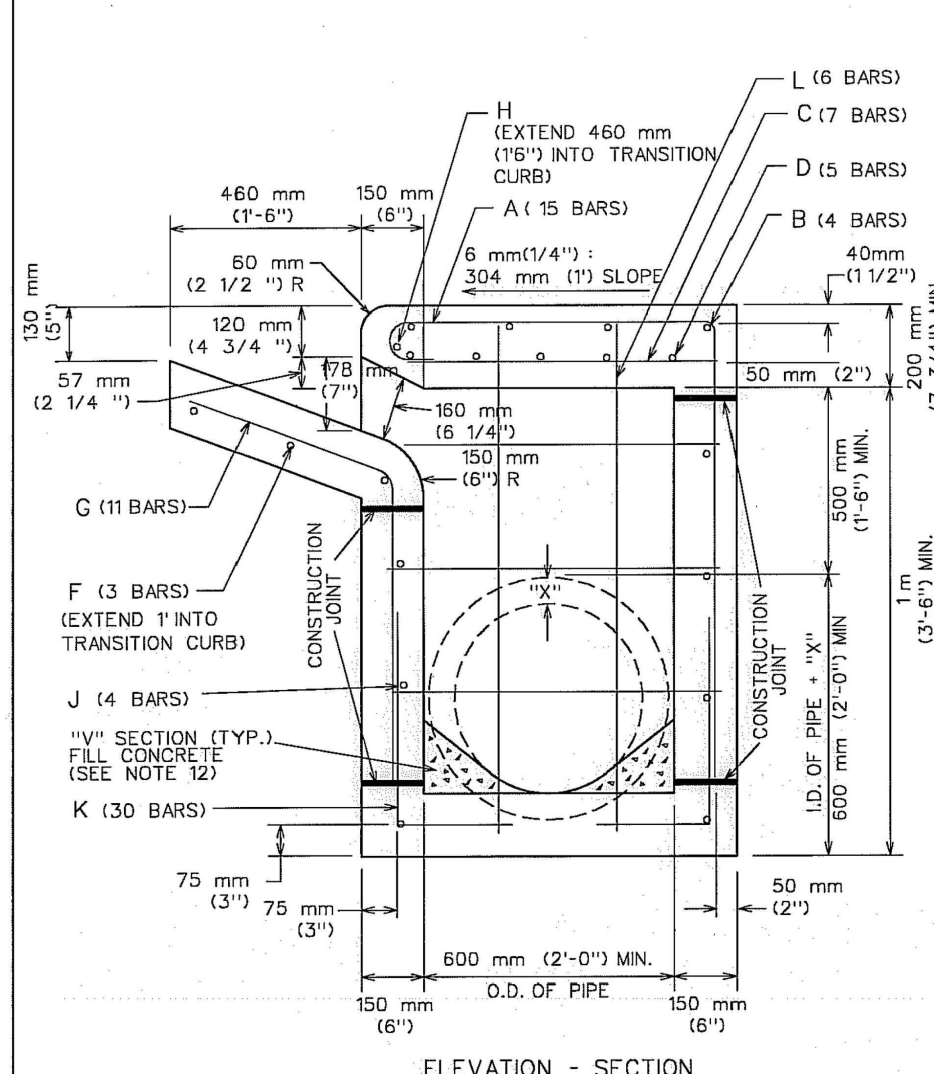
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL DETAILS FOR CURB INLET	
<i>Bill Gerdner</i> 12/9/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO 508S- 4 OF 4



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		CURB INLET 3 m (10') PRECAST TYPE 1 OR TYPE 1-R	
<i>Bill Gardner</i>	12/9/08	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-4 4 OF 5
ADOPTED			



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL DETAILS FOR CURB INLET	
<i>Bill Anderson</i> 12/9/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S- 1 OF 4

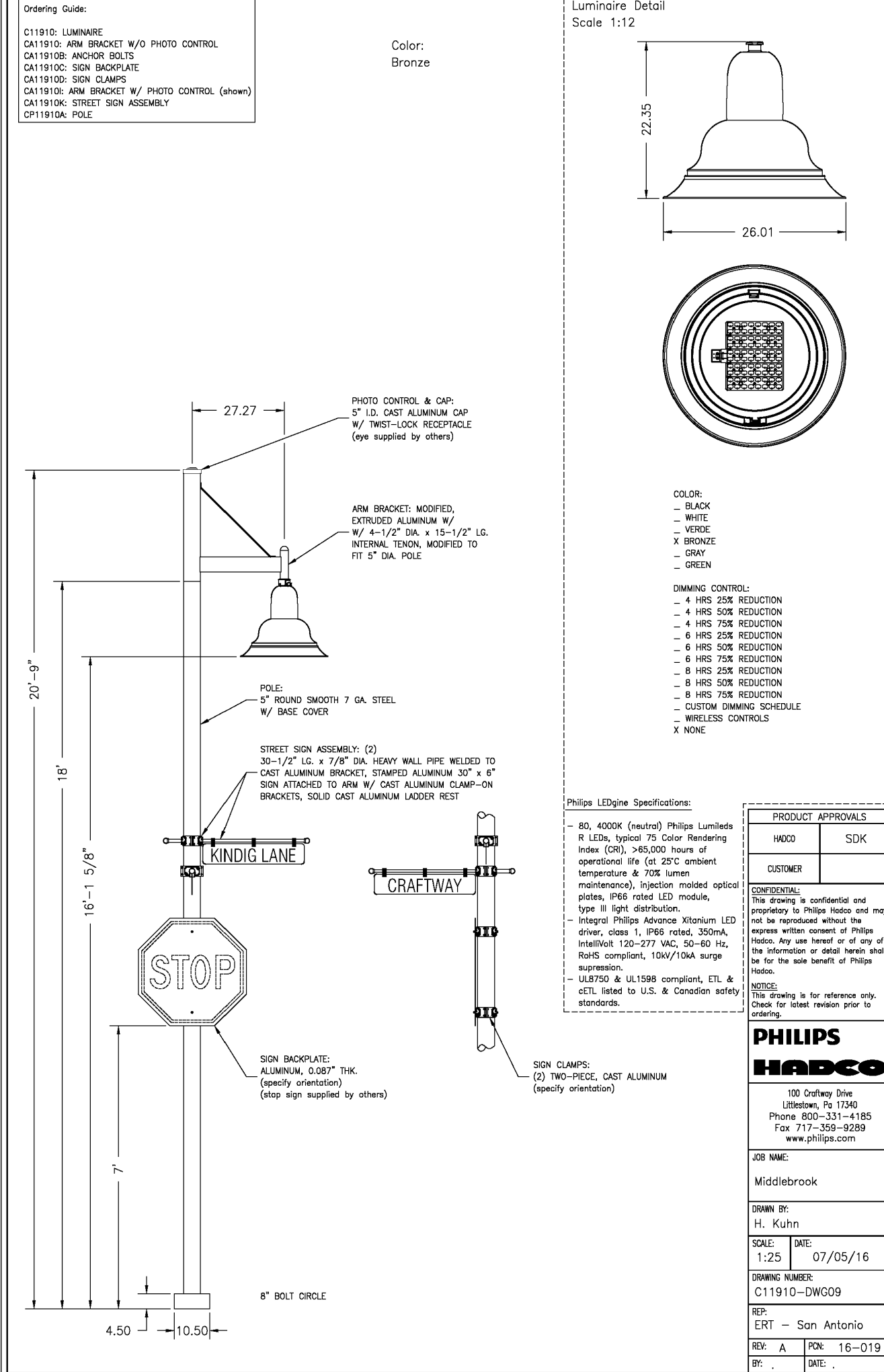


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL DETAILS FOR CURB INLET	
<i>Bill Gardner</i> 12/9/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-3 2 OF 4

BARS	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	230mm (9")*	15	2 m (7'-0")	73
B	4	250 mm (10")	4	3.25 m (10'-8")	29
C	4	450 mm (18")	7	750 mm (2'-6")	80
D	6	150 mm (6")	7	3.25 m (10'-8")	12
E	4	300 mm (12")	6	760 mm (2'-6")	10
F	4	250 mm (10")	3	4 m (13'-0")	35
G	4	300 mm (12")	11	1.25 m (4'-3")	31
H	6	-	1	4.25 m (14'-0")	20
J	4	300 mm (12")	7	3.25 m (10'-8")	50
K	4	300 mm (12")	30	800 mm (2'-7 1/2")	57
L	4	300 mm (12")*	6	1.3 m (4'-3")	12
M	4	-	4	500 mm (1'-8")	AVE
TOTAL STEEL, LB.					413
TOTAL CONCRETE, C.Y.					4.06

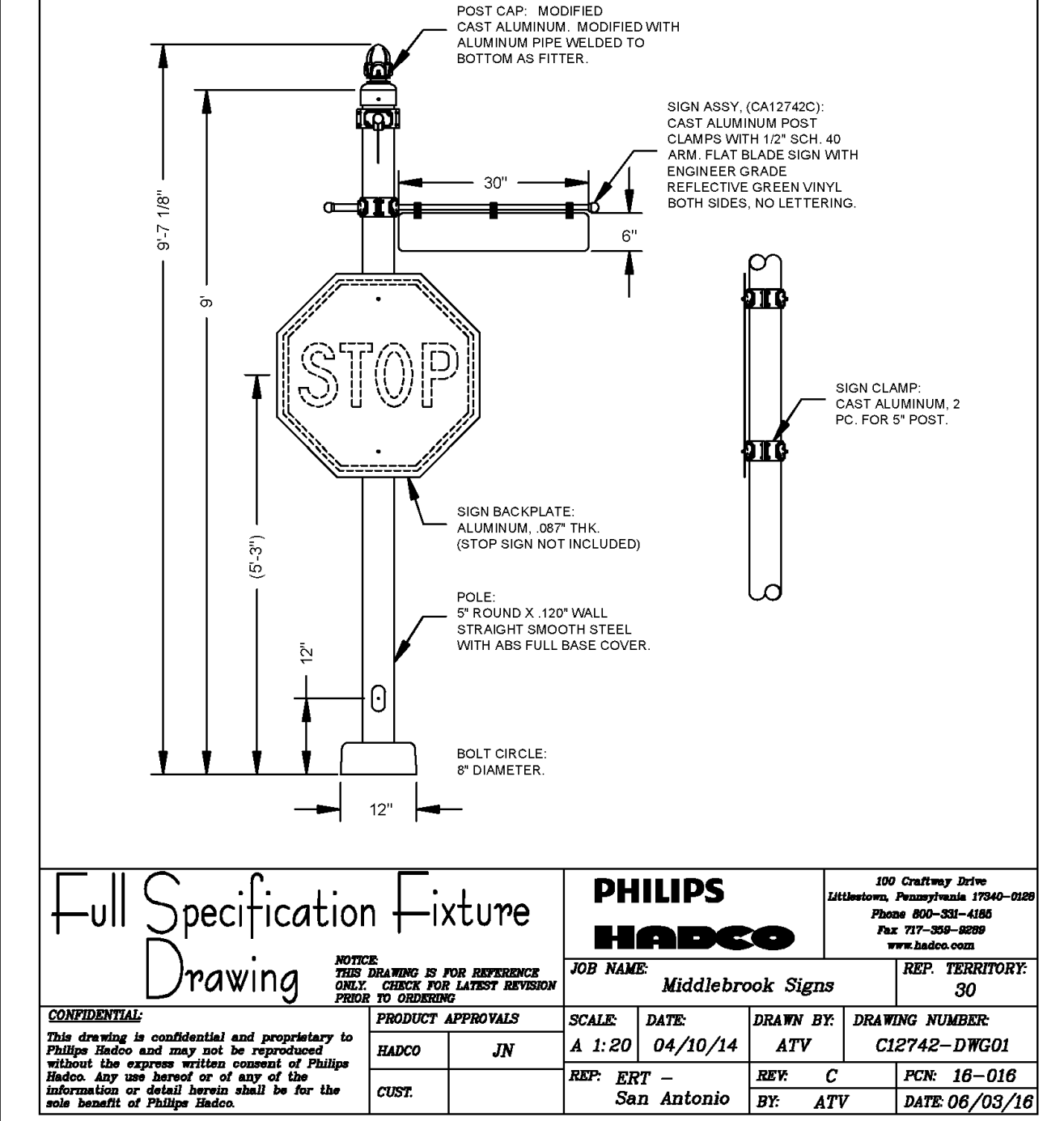
\* EXCEPT AS SHOWN ON PLAN


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL DETAILS FOR CURB INLET	
<i>Bill Anderson</i> 12/9/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S- 3 OF 4



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**CA12742I - ANCHOR RODS & TEMPLATE**



DATE OF ISSUE		BY:		DRAFTED BY:	
		SPC		CFI	
<div style="float: right; width: 100px;">             DATE OF REVISION              BY:              DRAFTED BY:           </div>					
<div style="text-align: center;">  <p><b>Carlson, Brigrance &amp; Doering, Inc.</b></p> <p>Civil Engineering ♦ Surveying</p> <p>FIRM ID #H3791 North Office          Main Office          5501 West William Cannon Dr. Suite 600          Austin, Texas 78750          Phone No. (512) 280-5160 Fax No. (512) 280-5165</p> </div>					
<b>JOB NAME: SADDLEBACK AT SANTA RITA RANCH</b>  <b>CONSTRUCTION DETAILS (3 OF 3)</b>					
<b>PHASE 1 SECTION 3</b>					
<b>PROJECT: STREET, DRAINAGE, WATER, AND WASTEWATER IMPROVEMENTS</b>					
<div style="text-align: center;">         STEVEN P. CARTER        LICENSED PROFESSIONAL ENGINEER  <i>Steven P. Carter</i>  <b>12-1-2023</b> </div>					
DATE OCT 2023					
SHEET NUMBER 5413					
SHEET 71 OF 73					
SHEET NO. 71					