Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Ledge Stone Subdivision Phase I						**2. Regulated Entity No.:** 104798640			
3. Customer Name: Hays County Mud 4						**4. Customer No.:** 602690661			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		(Exception)	
6. Plan Type: **(Please circle/check one)**	WPAP	(CZP)	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		(Non-residential)			**8. Site (acres):**			110.07
9. Application Fee:	$500		**10. Permanent BMP(s):**			Sand filtration pond, extended detention basin, swale			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Hays		**14. Watershed:**			Barton Creek			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	_x_	___	___
Region (1 req.)	_x_	___	___
County(ies)	_x_	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer _x_Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda _x_Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Jacob Valentien, PE Print Name of Customer/Authorized Agent
 5/4/2026 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 Exception Request Form

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 Exception Request Form** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Jacob Valentien, PE

Date: 5/4/2026

Signature of Customer/Agent:

Regulated Entity Name: Ledge Stone Subdivision Phase I

Project Information

1. County: Hays
2. Stream Basin: Long Branch
3. Groundwater Conservation District (if applicable): Hays Trinity GCD
4. Customer (Applicant):

   Contact Person: Mr. Craig McColloch, PE
   Entity: Board President Hays County MUD No. 4
   Mailing Address: 1715 S. Capital of Texas Hwy., Suite 105D
   City, State: Austin Zip: 78746
   Telephone: 512-615-0503 Fax: _____
   Email Address: mkutac@mbkfirm.com

5. Agent/Representative (If any):

   Contact Person: Jacob Valentien, PE
   Entity: Westwood Professional Services
   Mailing Address: 8701 N. Mopac Expy Suite 320
   City, State: Austin, TX Zip: 78759
   Telephone: (512) 485-0831 Fax: _____
   Email Address: jacob.valentien@westwoodps.com

6. Project Location

   ☐ This project is inside the city limits of _____.
   ☒ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of City of Dripping Springs.
   ☐ This project is not located within any city 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.

   _____

8. ☒ **Attachment A - Road Map**. A road map showing directions to and 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 USGS Quadrangle Map (Scale: 1" = 2000') is attached. The map(s) should clearly show:

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

10. ☒ **Attachment C - Project Narrative**. A detailed narrative description of the proposed project is provided at the end of this form. 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. ☒ **Attachment D - Nature Of Exception**. A narrative description of the nature of each exception requested is attached. All provisions of 30 TAC §213 Subchapter B for which an exception is being requested have been identified in the description.

13. ☒ **Attachment E - Equivalent Water Quality Protection**. Documentation demonstrating equivalent water quality protection for surface streams which enter the Edwards Aquifer is attached.

Administrative Information

14. ☒ 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.

15. ☒ The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.

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

I Craig McColloch,PE,
Print Name

Board President,
Title - Owner/President/Other

of Hays County MUD No. 4,
Corporation/Partnership/Entity Name

have authorized Jacob Valentien,PE
Print Name of Agent/Engineer

of Westwood Professional Services
Print Name of Firm

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

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

4/22/26
Date

THE STATE OF Texas §

County of Hays §

BEFORE ME, the undersigned authority, on this day personally appeared _____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 22 day of April, 2026

NOTARY PUBLIC

Vicki Hahn
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Vicki Hahn
Notary Public, State of Texas
Notary ID 7822635
My Commission Exp. 11/04/2028

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Ledge Stone Subdivision Phase I

Regulated Entity Location: located near the intersection of Ledge Stone Drive and US Hwy 290

Name of Customer: Hays County Municipal District No. 4

Contact Person: Jacob Valentien, PE Phone: 512-485-0831

Customer Reference Number (if issued):CN 602690661

Regulated Entity Reference Number (if issued):RN 104789640

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

☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office

☐ Overnight Delivery to: TCEQ - Cashier
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

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	110.07 Acres	$ 500
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: 5/4/2026

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

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing 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.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☒ Other **Contributing Zone Exception Request**

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 602690661		**RN 104789640**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

Hays County Municipal District No. 4

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☒ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☐ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:							
	1715 S. Capital of Texas Hwy., Suite 105D						
	City	Austin	**State**	TX	**ZIP**	78746	**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	MKutac@mbkfirm.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 615-0503		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Ledge Stone Subdivision Phase I

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

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	north side of US 290 approx. 05 miles west of CR163

26. Nearest City	State	Nearest ZIP Code
Dripping Springs	TX	78620

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	30.20767		28. Longitude (W) In Decimal:	-97.98063	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	12	27.81423	-97	58	50.26997

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)
1542			

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Single family residential development

34. Mailing Address:								
	City	Austin	State	TX	ZIP	78746	ZIP + 4	

35. E-Mail Address:	

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
( ) -		( ) -

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.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jacob Valentien, PE	**41. Title:**	Senior Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 485-0831		**( )** -	jacob.valentien@westwoodps.com

SECTION V: Authorized Signature

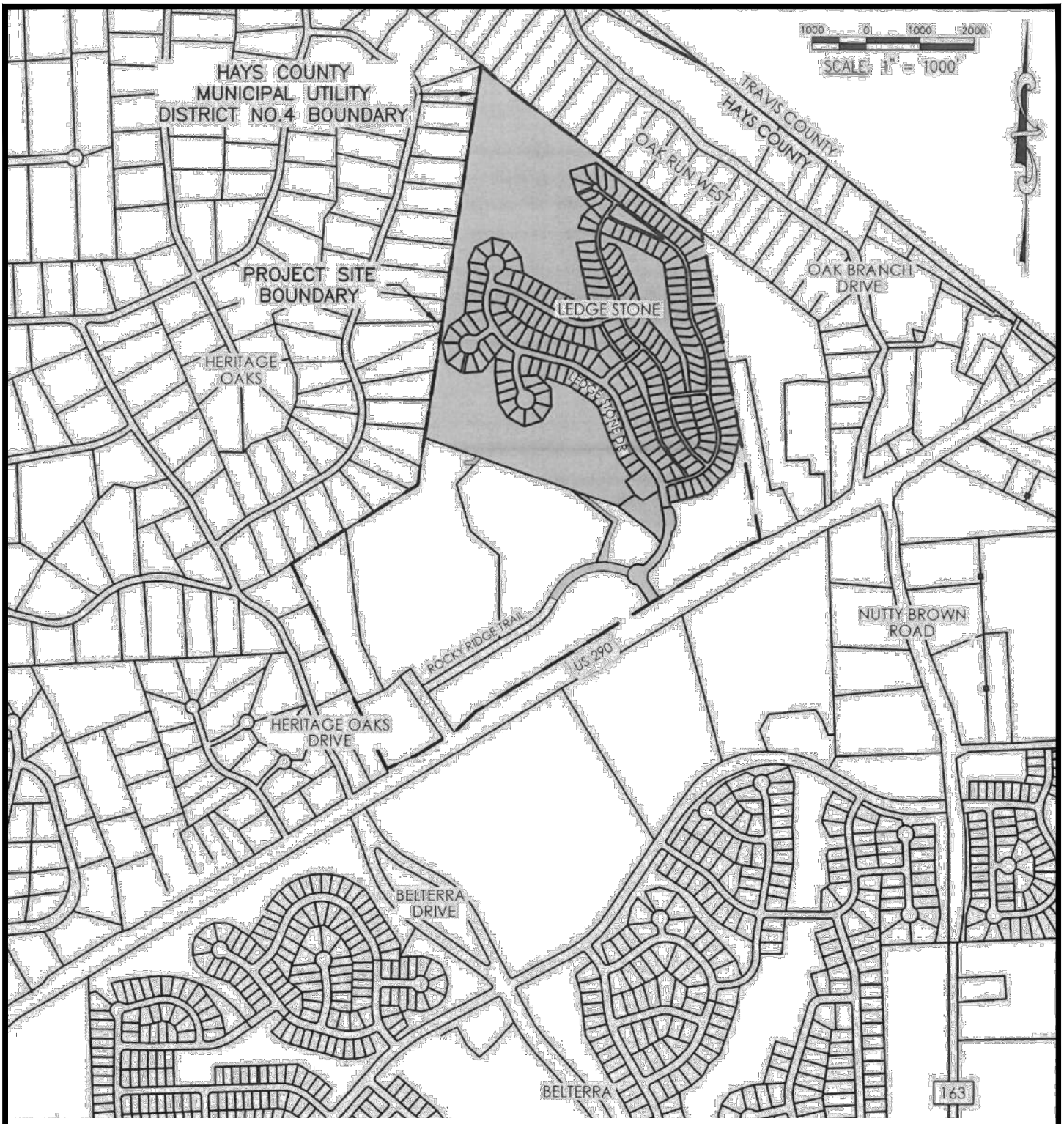
46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified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

Company:	Hays County MUD No. 4	**Job Title:**	District Engineer
Name *(In Print):*	Jacob Valentien, PE	**Phone:**	**(** 512 **)** 485- **0831**
Signature:		**Date:**	5/04/2026

ATTACHMENT A

ROAD MAP

Last Saved by: Gyporras
Plot Date/Time: 3/10/2026 11:18 AM
Drawing: N:\0052766.04\05 Service Groups\Water_Wastewater\Permitting\TCEQ\TCEQ CZP Exception Request instead of Modification\Attachments from other Submissions\Attachment A - Road Map



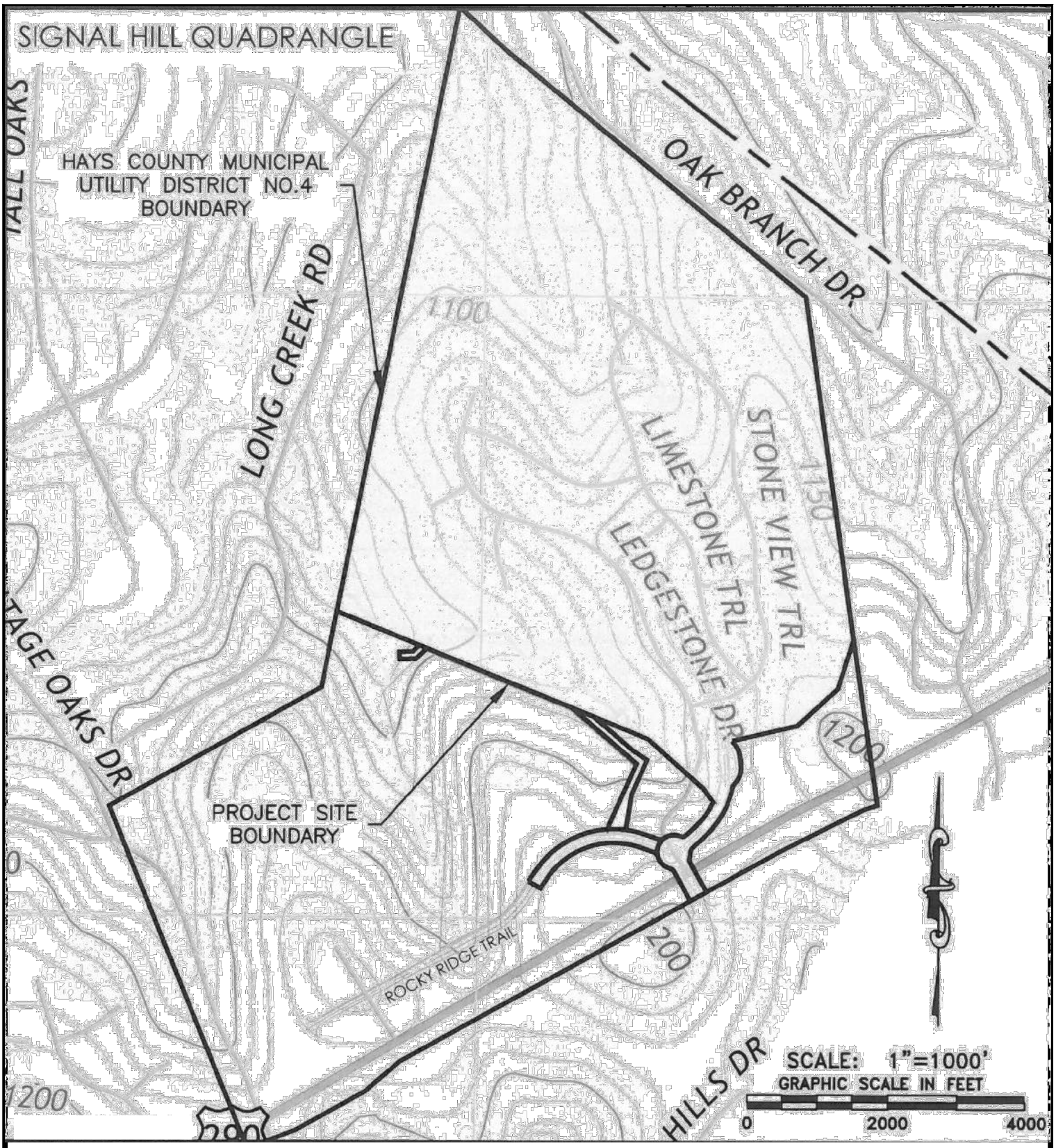
FIELD CREW: N/A	
FIELD WORK DATE:	

DATE: 3/10/26	PROJECT NO. 0052766	**HAYS COUNTY MUD NO.4**	Westwood
DRAFTER: GYP		**TCEQ CZP EXCEPTION REQUEST**	Westwood Professional Services, Inc.
DESIGNER:		**Attachment A- Road Map**	8701 NORTH MOPAC EXPY, SUITE 320 T: 512.485.0831
CHECKED:	SHEET 01 OF 01		AUSTIN, TX 78759 F: 888.937.5150
			TBPELS ENGINEERING FIRM NO. 11756
			TBPELS SURVEYING FIRM NO. 10074301 westwoodps.com

ATTACHMENT B

USGS QUADRANGLE MAP

Last Saved by: Gyporras
Plot Date/Time: 3/10/2026 11:25 AM
Drawing: N:\0052766.04\05 Service Groups\Water_Wastewater\Permitting\TCEQ\TCEQ CZP Exception Request instead of Modification\Attachments from other Submissions\Attachment A - Road Map



FIELD CREW: N/A	
FIELD WORK DATE:	

DATE: 3/10/26	PROJECT NO. 0052766	**HAYS COUNTY MUD NO.4**	Westwood Professional Services, Inc.
DRAFTER: GYP		**TCEQ CZP Exception Request**	8701 NORTH MOPAC EXPY, SUITE 320 T: 512.485.0831
DESIGNER:		**Attachment B- USGS Quadrangle Map**	AUSTIN, TX 78759 F: 888.937.5150
CHECKED:	SHEET 01 OF 01		TBPELS ENGINEERING FIRM NO. 11756 TBPELS SURVEYING FIRM NO. 10074301

ATTACHMENT C

PROJECT NARRATIVE

ATTACHMENT C – PROJECT NARRATIVE

This project site totals approximately 108.53 acres of land out of 186.61 acres of land known as Bush Ranch. The site is in Hays County at the intersection of Ledge Stone Drive and US Highway 290. The project consists of the construction of a public roadway, water, wastewater, storm sewer, dry utilities, 236 single family residences, a wastewater treatment plant, and subsurface drip irrigation system.

The original CZP permit approved in 2006 through permit number EAPP No. 05112102, had 24.26 acres of impervious cover for a percent impervious cover of 22.40%.

In a modification approved in 2018 through permit number EAPP No.11001268, an additional 1.54 acres of project area with 0.63 acres of impervious cover from Rocky Ridge Trail was proposed, making the total project area 110.07 acres with a total impervious cover of 24.89 acres.

In a modification approved in 2022 through permit number EAPP No. 11003078, an additional 5.06 acres of impervious cover within the project site were included due to the construction of a commercial lot with several buildings, parking lots, driveways. Previously approved BMPs (water quality pond) are utilized to service this additional impervious cover.

This exception request is regarding the addition of an effluent storage tank to the wastewater treatment plant on the site. The changes to the site are negligible, do not significantly impact the drainage area, and there is no physical change to approved BMPs. The effluent storage tank will add 0.07 acres of impervious cover within the site.

The permanent BMPs for the portion of the site that this exception request is applicable to include grassy swales routing to rock riprap. The existing permanent BMPS for the site also consist of one (1) extended detention basin, an additional sand filtration pond, and one (1) grassy swale.

ATTACHMENT D

NATURE OF EXCEPTION

ATTACHMENT D – NATURE OF EXCEPTION

This CZP exception request is being submitted in lieu of a modification request per the directive of TCEQ staff. The Texas Commission of Environmental Quality (TCEQ) 30 TAC §213 Subchapter B requires that any changes to a development and its existing and active contributing zone plan should be submitted as a modification for review.

The above-ground effluent storage tank involves only a minor increase of impervious cover within the site (0.07 acres). The changes to the site are negligible, do not significantly impact the drainage area or drainage patterns, and there are no proposed changes to BMPs previously approved in the CZP and subsequent modifications.

The proposed permanent BMPs (grassy swale and rock riprap) will function in accordance with the TCEQ's requirements.

ATTACHMENT E

EQUIVALENT WATER QUALITY PROTECTION

ATTACHMENT E – EQUIVALENT WATER QUALITY PROTECTION

Permanent BMPs for the site include conveying runoff to an existing channel and then existing water quality pond. At the wastewater treatment plant, grassy swales will be extended to capture additional runoff from the 0.07 acres of impervious cover added by the proposed effluent storage tank. Even though the increase in proposed runoff is negligible, the swales will capture stormwater and drain to a rock rip area that inhibits erosion and slows discharge before release towards the Long Branch Tributary.

ATTACHMENT F

PROPOSED PLANS

WWTP EFFLUENT STORAGE TANK ADDITION

CONSTRUCTION PLANS
FOR
WWTP EFFLUENT STORAGE TANK ADDITION
FOR
HAYS COUNTY MUD NO. 4
HAYS COUNTY, TEXAS
JANUARY 2026

ENGINEER

JACOB VALENTIEN, P.E.
WESTWOOD PROFESSIONAL SERVICES
8701 N. MOPAC EXPY. SUITE 320
AUSTIN, TEXAS 78759
PHONE: 512.485.0831
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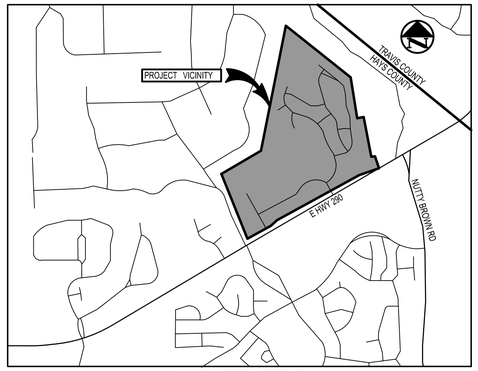
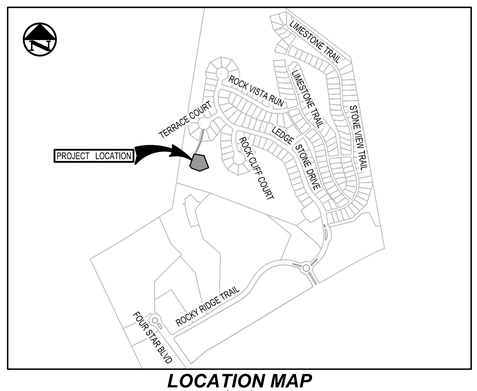
OWNER

HAYS COUNTY MUNICIPAL UTILITY DISTRICT NO. 4
1715 S. CAPITAL OF TEXAS HWY, SUITE 105D
AUSTIN, TEXAS 78746
PHONE: 512.615.0503
MKUTAC@MBKFIRM.COM



VICINITY MAP
(NTS)



LOCATION MAP
(NTS)

DRAWING SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	EXISTING SITE PLAN
4	EROSION CONTROL PLAN
5	EROSION CONTROL DETAILS
6	DEMOLITION PLAN
7	PROPOSED SITE PLAN
8	DIMENSION CONTROL PLAN
9	PROPOSED GRADING & DRAINAGE PLAN
10	PROPOSED YARD PIPING PLAN
11	PROPOSED YARD PIPING PROFILES
12	PROPOSED EFFLUENT STORAGE TANK DETAILS 1 OF 4
13	PROPOSED EFFLUENT STORAGE TANK DETAILS 2 OF 4
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16	S0 – STRUCTURAL CONSTRUCTION NOTES
17	S1 – STRUCTURAL RING BEAN FOUNDATION PLAN AND SECTION
18	E1 – ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES
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20	E3 – ELECTRICAL BUILDING LAYOUT
21	E4 – ELECTRICAL CONTROLS DIAGRAM
22	E5 – ELECTRICAL DETAILS

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TBPLS FIRM REGISTRATION NO. LS-10074301

Last Saved by: ANobles
Last Saved: 1/5/2026 11:18 AM
Plot Date/Time: 1/5/2026 11:19 AM
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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4
WWTP EFFLUENT STORAGE TANK ADDITION
COVER SHEET

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
1-5-2026

1

GENERAL ENGINEERING NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF HAYS COUNTY M.U.D. NO. 4, TCEQ, THE CITY OF DRIPPING SPRINGS, AND HAYS COUNTY, CITY OF AUSTIN STANDARD SPECIFICATIONS SHALL GOVERN CONSTRUCTION WHERE NO OTHER REQUIREMENTS EXIST.
2. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR OR THEIR AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRECONSTRUCTION CONFERENCE BETWEEN THE CITY OF DRIPPING SPRINGS, THE CONSULTING ENGINEER, OWNER, COUNTY INSPECTOR, HAYS COUNTY M.U.D. NO. 4 AND ANY OTHER AFFECTED PARTIES, INCLUDING BUT NOT LIMITED TO, THE TCEQ REGIONAL OFFICE. NOTIFY ALL SUCH PARTIES AT LEAST 48 HOURS PRIOR TO THE TIME OF THE CONFERENCE AND 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. THE CONTRACTOR SHALL GIVE THE CITY, COUNTY, AND THE ENGINEER 48 HOURS NOTICE BEFORE BEGINNING CONSTRUCTION.
4. ANY EXISTING PAVEMENT, CURBS AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE BEFORE FINAL ACCEPTANCE.
5. THE LOCATION OF ANY WATER AND/OR WASTEWATER LINES OR OTHER UTILITIES TO BE CROSSED OR CONNECTED SHALL BE VERIFIED BY THE CONTRACTOR AT THE TIME OF COMMENCEMENT OF CONSTRUCTION.
6. CONTACT SHALL BE MADE TO WESTWOOD PROFESSIONAL SERVICES 48 HOURS PRIOR TO CONNECTION TO EXISTING WATER AND/OR WASTEWATER LINES.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO, GAS LINES, WATERLINES, VALVE BOXES, FIRE HYDRANTS, STRUCTURES, AND OTHER APPURTENANCES THAT LIE WITHIN THE LIMITS OF CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ALL UTILITIES, DRIVEWAYS, PAVEMENT, CURB & GUTTER, SIDEWALKS, FENCES, AND ANY OTHER ITEMS DAMAGED DURING CONSTRUCTION REGARDLESS OF WHETHER ALL ITEMS ARE SHOWN ON THE PLANS AT HIS SOLE EXPENSE. THE LOCATION SHOWN OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IS APPROXIMATE. IN ADDITION TO NORMAL PRECAUTIONS WHEN EXCAVATING, TAKE EXTRA CAUTION WHEN EXCAVATING WITHIN 25 FT OF ANY UTILITIES SHOWN ON THE PLANS.
8. WHENEVER EXISTING UTILITIES, NOT INDICATED ON THE PLANS, PRESENT OBSTRUCTIONS TO GRADE AND ALIGNMENT OF PIPE, IMMEDIATELY NOTIFY WESTWOOD PROFESSIONAL SERVICES, WHO WILL DETERMINE WHENEVER EXISTING IMPROVEMENTS ARE TO BE RELOCATED, OR GRADE AND ALIGNMENT OF PIPE CHANGED. WHERE NECESSARY TO MOVE SERVICES, POLES, GUY WIRES, PIPELINES, ETC., AS DETERMINED BY THE ENGINEERS, THE CONTRACTOR WILL MAKE ARRANGEMENTS WITH THE OWNER OF THE UTILITY TO BE MOVED AND HAVE IT MOVED. THE COST OF ANY UTILITY RELOCATION WILL BE AT THE CONTRACTOR'S SOLE EXPENSE. OWNER WILL NOT BE LIABLE FOR RELOCATION COSTS OR DAMAGES ON ACCOUNT OF DELAYS DUE TO CHANGES MADE BY OWNERS OR OTHER PRIVATELY OR PUBLICLY OWNED UTILITIES WHICH HINDER PROGRESS OF THE WORK.
9. ALL CONSTRUCTION ACTIVITIES, INCLUDING ACCESS, EGRESS, TRAVEL, STOCKPILING, ETC. ARE TO BE CONFINED TO AREAS IDENTIFIED BY THE OWNER.
10. ALL EXCESS SPOIL MATERIAL SHALL BE DISPOSED OF OFFSITE BY THE CONTRACTOR. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK EFFORT, INCLUDE COSTS IN RELATED BID ITEMS.
11. REFER TO THE PLANS FOR DETAILS ON “PIPE BEDDING AND BACKFILL” AND OTHER DETAILS.
12. ALL GATE VALVES SHALL HAVE RESILIENT VALVE SEATS.
13. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM OF 8 MIL POLYETHYLENE.
14. THE CONTRACTOR SHALL FURNISH THE ENGINEER ONE SET OF “AS-BUILT” PLANS REFLECTING ALL CHANGES MADE IN THE FIELD.
15. THE ENGINEER SHALL BE GIVEN 48 HOURS NOTICE PRIOR TO ANY TESTING PHASE (PRESSURE, LEAKAGE, ETC.)
16. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL NECESSARY TO PERFORM THE CONSTRUCTION IN A SAFE MANNER TO PROTECT THE PUBLIC SAFETY. NO SEPARATE PAY.
17. THE COST OF ALL FITTINGS SHALL BE INCLUDED IN THE PER FOOT UNIT COST OF PIPE.
18. THE CONTRACTOR SHALL PROVIDE PLUGS AT ALL PIPE STUB-OUTS. NO SEPARATE PAY.
19. THE CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT ALL PERMITS NECESSARY TO LEGALLY PERFORM THE WORK HAVE BEEN OBTAINED PRIOR TO COMMENCING CONSTRUCTION. REQUIRED PERMITS THAT CAN BE ISSUED TO THE CONTRACTOR ONLY WILL BE OBTAINED AT THE CONTRACTOR'S EXPENSE.
20. LOT PINS REMOVED, COVERED, OR MOVED DURING CONSTRUCTION SHALL BE RELOCATED AT THE CONTRACTOR'S SOLE EXPENSE BY A REGISTERED PROFESSIONAL LAND SURVEYOR.
21. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
22. THE PROPOSED FENCE IS TO MATCH THE EXISTING FENCE. CONTRACTOR TO VERIFY.

DEMOLITION GENERAL NOTES:

1. CONTRACTOR IS TO REVIEW ALL GENERAL NOTES PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL THE UNSUITABLE MATERIALS FROM THE PROJECT SITE. CONTRACTOR SHALL CONTACT ALL LOCAL AUTHORITIES TO DETERMINE DISPOSAL REQUIREMENTS.
3. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING EROSION CONTROL MEASURES ON THE SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS UNTIL THE SITE HAS BEEN STABILIZED.
4. CONTRACTOR IS RESPONSIBLE FOR GRADING ALL DISTURBED AREAS TO ALLOW FOR POSITIVE DRAINAGE. GRADING SLOPES ARE NOT TO EXCEED 3:1.
5. CONTRACTOR IS RESPONSIBLE FOR SECURITY OF THE SITE DURING DEMOLITION ACTIVITIES AND UNTIL SUBSTANTIAL COMPLETION.
6. THE HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING SUBSURFACE UTILITIES HAVE BEEN DETERMINED FROM DATA RECORDED BY OTHERS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL UTILITY MAINS, MANHOLES, CLEANOUTS, VALVE BOXES, AND FIRE HYDRANTS, ETC. IN THE AREA OF DEMOLITION.
7. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS REGARDING TRENCH SAFETY.
8. BARRICADING AND PROJECT SIGNS SHALL CONFORM TO TEXAS DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND LATEST UPDATES.
9. CONTRACTOR WILL PROVIDE ON-SITE PARKING FOR WORKERS. VEHICLE PARKING WILL NOT BE ALLOWED WITHIN THE ADJACENT NEIGHBORHOOD.
10. CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ADEQUATE DUST CONTROL MEASURES DURING DEMOLITION ACTIVITIES.
11. CONTRACTOR IS TO COORDINATE DEMOLITION ACTIVITIES WITH THE HAZARDOUS MATERIAL ABATEMENT CONTRACTORS' ACTIVITIES, IF APPLICABLE.
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL TEMPORARY UTILITY SERVICES REQUIRED TO COMPLETE THE SCOPE OF WORK.

GRADING & DRAINAGE GENERAL NOTES:

1. REFER TO GEOTECHNICAL REPORT FOR REQUIREMENTS REGARDING FILL COMPACTION AND MOISTURE CONTENT.
2. FLEXIBLE BASE MATERIAL FOR TANK FOUNDATION CONSTRUCTION SHALL MEET THE REQUIREMENTS AS SPECIFIED IN THE FOUNDATION PLAN - SHEET S1.
3. ALL PROPOSED AND EXISTING GRADES IN NON-PAVED AREAS ARE "FINISHED GRADE" (I.E. IN LANDSCAPE BEDS, TOP OF MULCH/BEDDING MATERIAL).
4. FINAL PAVING, CURB, AND SIDEWALK ELEVATIONS WILL BE PLACED AT PLUS OR MINUS 0.03 FOOT.
5. ANY CONCRETE, ROCK, OR MATERIAL DEEMED BY THE ENGINEER TO BE UNSUITABLE FOR SUBGRADE SHALL BE DISPOSED OF OFFSITE AT CONTRACTOR'S EXPENSE.
6. CRUSHED STONE BEDDING OR APPROVED EQUAL SHALL BE PROVIDED BY THE CONTRACTOR WHEN ROCK IS ENCOUNTERED IN TRENCHES. THERE SHALL BE NO ADDITIONAL PAY ITEM FOR CRUSHED STONE BEDDING.
7. IF REQUIRED DUE TO CONSTRUCTION, POWER POLES TO BE BRACED OR RELOCATED AT CONTRACTOR'S EXPENSE.
8. EXCESS EXCAVATED MATERIAL SHALL BE SPREAD ONSITE OR HAULED OFF AT THE DIRECTION OF THE OWNER/ENGINEER. LARGE ROCKS SHALL BE HAULED OFF AT THE CONTRACTOR'S EXPENSE.

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S.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.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE 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.
3. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, AND SUBMITTED TO THE DESIGN ENGINEER AND THE CITY ENGINEER.

HOURS OF CONSTRUCTION:

1. WORK SHALL BE DONE BETWEEN THE HOURS OF 7:00 A.M. AND 7:00 P.M. NO WORK SHALL BE DONE ON SUNDAYS OR LEGAL HOLIDAYS WITHOUT THE WRITTEN PERMISSION OF THE OWNER IN EACH CASE, EXCEPT SUCH WORK AS MAY BE NECESSARY FOR THE PROPER CARE, MAINTENANCE AND PROTECTION OF THE WORK ALREADY DONE OR OF EQUIPMENT OR IN THE CASE OF AN EMERGENCY.

SANITARY FACILITIES:

1. PROVISIONS MUST BE MADE FOR NECESSARY SANITARY CONVENIENCES FOR THE USE OF LABORERS ON THE SITE. THE FACILITIES MUST BE PROPERLY SECLUDED FROM PUBLIC OBSERVATION AND SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

BENCHMARKS:

B.M. '100' "+" CUT SET ON A BACK OF CURB
EELVATION=1,138.00
N=13,988,479.75
E=2,290,986.33

B.M. "101" "+" CUT SET ON A BACK OF CURB
ELEVATION=1,153.13
N=13,988,537.86
E=2,291,166.35

B.M. '3032' "+" CUT SET IN CONCRETE PAVEMENT
ELEVATION=1,098.82
N=13,990,516.54
E=2,290,634.05

PIPING GENERAL NOTES:

1. ALL YARD PIPING SHALL BE A MINIMUM OF CLASS 350 DUCTILE IRON PIPE ABOVE GROUND AND A MINIMUM OF SDR 26 PVC PIPE BELOW GROUND.
2. FITTINGS SHALL BE MADE FROM DUCTILE IRON IN ACCORDANCE WITH AWWA C110 OR AWWA C153. GASKETED JOINTS SHALL BE IN ACCORDANCE WITH ANSI/AWWA C111/A21.11, EXCEPT GASKETS SHALL BE NEOPRENE OR OTHER SYNTHETIC RUBBER AND FACTORY INSTALLED. NATURAL RUBBER WILL NOT BE ACCEPTABLE.
3. ALL BURIED METAL SHALL BE WRAPPED IN 8-MIL THICK POLYETHYLENE FILM AS SPECIFIED IN ANSI/AWWA C105/A21.5.
4. BLUE UNDERGROUND WATER LINE TAPE OF A MINIMUM 4-INCH WIDTH SHALL BE INSTALLED ABOVE THE EMBEDMENT MATERIAL.
5. ALL VALVE BOXES, JUNCTION BOXES, CLEAN OUTS, ETC. ARE TO BE ADJUSTED FLUSH WITH PROPOSED GRADE.
6. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS, BLOCKING, AND INCIDENTALS AS REQUIRED TO CONSTRUCT LINES AS SHOWN ON PLANS AND SPECIFICATIONS.
7. MINIMUM PIPE COVER IS 48" UNLESS OTHERWISE SHOWN ON PLANS.
8. ALL MECHANICAL JOINT VALVES, BENDS, CROSSES, TEES, AND REDUCERS WHICH REQUIRE BLOCKING SHALL BE RESTRAINED WITH EBAA MEGALUG RETAINER GLAND OR APPROVED EQUAL.
9. RESILIENT SEATED GATE VALVES SHALL MEET OR EXCEED LATEST REVISIONS OF AWWA C509 OR C515.
10. AIR RELEASE VALVES SHALL MEET OR EXCEED LATEST REVISION OF AWWA C512.
11. ALL WATER MAINS SHALL BE HYDROSTATIC TESTED. TEST PROCEDURES SHALL NOT BE LESS THAN 1.25 TIMES THE STATED WORKING PRESSURES OF PIPELINE MEASURED AT HIGHEST ELEVATION AT TEST SECTION AND NOT LESS THAN 1.5 TIMES THE STATED WORKING PRESSURE AT THE LOWEST ELEVATION OF THE TEST SECTION. TEST MUST BE A MINIMUM OF 4 HOURS.
12. CONTRACTOR IS RESPONSIBLE FOR SEEDING AND ESTABLISHING TURF IN DISTURBED AREAS. HYDROMULCHING OR SODDING MAY BE SUBSTITUTED FOR SEEDING AT THE CONTRACTOR'S OPTION.
13. MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT.
14. ALL CONCRETE SHALL BE CLASS "A" (3000 PSI), UNLESS OTHERWISE NOTED.
15. WHEN WATER AND SANITARY SEWER MAINS, SERVICES, AND LATERALS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO EACH OTHER THAN NINE FEET IN ALL DIRECTIONS AND PARALLEL LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING TCEQ CHAPTERS SHALL APPLY:
    - 15.1. TCEQ CHAPTER 217.53 PIPE DESIGN, SECTION (D) SEPARATION DISTANCES.
    - 15.2. TCEQ CHAPTER 290.44 WATER DISTRIBUTION, SECTION (E) LOCATION OF WATERLINES.
16. ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS.
17. TRENCH BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED IN NO LARGER 8-INCH LIFTS TO THE TOP OF SUBGRADE TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY UNLESS OTHERWISE SHOWN ON THESE PLANS OR STATED IN THE STANDARD CITY SPECIFICATIONS.
18. EMBEDMENT SHALL CONFORM TO THE REQUIREMENTS SHOWN IN THE DETAIL ON SHEET 15.
19. VALVE BOXES SHALL BE FURNISHED AND SET ON EACH GATE VALVE. AFTER THE FINAL CLEAN-UP AND ALIGNMENT HAS BEEN COMPLETED, THE UTILITY CONTRACTOR SHALL POUR A 24"X24"X6" CONCRETE BLOCK AROUND ALL VALVE BOX TOPS LEVEL WITH THE FINISHED GRADE.

NOTES FOR IMPORTED SOILS:

1. PRIOR TO SOIL DISTRIBUTION CONTRACTOR SHALL PREP THE SITE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS. THIS SHALL INCLUDE BUT IS NOT LIMITED TO THE REMOVAL OF ANY TREES, STUMPS, BRUSH, DEBRIS SURFACE ROCK SIX (6) INCHES OR GREATER (INCLUDING BOULDERS).
2. AREAS THAT APPEAR TO HOLD WATER SHALL NOT BE ACCEPTABLE AND SHALL BE RE-GRADED AT CONTRACTOR'S SOLE EXPENSE.

ADDITIONAL EROSION CONTROL NOTES FOR EDWARDS AQUIFER CONTRIBUTING ZONE:

1. DESIGNATION OF AN ENVIRONMENTAL PROJECT MANAGER WHO IS ON SITE >90% OF THE TIME, WHO IS REQUIRED TO BE AT THE PRE-CONSTRUCTION AND MID-CONSTRUCTION MEETINGS, AND IS RESPONSIBLE FOR COMPLIANCE ON SITE OF THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS. THE ENVIRONMENTAL PROJECT MANAGER IS RESPONSIBLE FOR ENSURING COMPLIANCE OF THE CONTROLS DURING THE CONSTRUCTION PERIOD. SHOULD THE PROJECT MANAGER NEED TO BE ABSENT FROM THE SITE FOR AN EXTENDED PERIOD (IN EXCESS OF ONE WEEK).
2. THE MAXIMUM LENGTH OF TIME BETWEEN CLEARING AND FINAL REVEGETATION OF A PROJECT SHALL NOT EXCEED 18 MONTHS, UNLESS EXTENDED BY THE DIRECTOR OF THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT (THIS DOES NOT AFFECT THE EXPIRATION OF THE SITE PLAN OR BUILDING PERMIT. THIS REQUIREMENT APPLIES TO SITES THAT HAVE SUSPENDED WORK AND ARE EXPERIENCING EROSION CONTROL PROBLEMS DUE TO DISTURBED SOIL CONDITIONS.) DISTURBED AREAS MUST BE MAINTAINED TO PREVENT EROSION AND SEDIMENT LOADING OF ANY WATERWAYS OR DRAINAGE FACILITIES.
3. IT IS A VIOLATION OF THE CODE AND THIS DEVELOPMENT PERMIT TO ALLOW SEDIMENT FROM A CONSTRUCTION SITE TO ENTER A CLASSIFIED WATERWAY DUE TO A FAILURE TO MAINTAIN THE REQUIRED EROSION AND SEDIMENTATION CONTROLS OR TO FOLLOW THE APPROVED CONSTRUCTION SEQUENCE.

TREE AND NATURAL AREA PROTECTION NOTES:

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
3. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
4. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF THE BRANCHES (DRIP LINE), FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
    - 4.1. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
    - 4.2. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL), OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ARBORIST;
    - 4.3. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
    - 4.4. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
5. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:
    - 5.1. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED.
    - 5.2. FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.
6. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMIT OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
7. TREES APPROVED FROM REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
8. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
9. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
10. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
11. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.).
12. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES)
13. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.
14. PRIOR TO EXCAVATION WITHIN TREE DRIP LINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
15. IN CRITICAL ROOT ZONE AREAS AND AREAS WITH EXISTING UTILITIES THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH A MINIMUM OF 12 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION. IN AREAS WITH HIGH SOIL PLASTICITY GEOTEXTILE FABRIC SHOULD BE PLACED UNDER THE MULCH TO PREVENT EXCESSIVE MIXING OF THE SOILS AND MULCH. ADDITIONALLY, MATERIAL SUCH AS PLYWOOD AND METAL SHEETS COULD BE REQUIRED TO MINIMIZE RISK OF DAMAGE TO ROOT ZONE AREAS AND EXISTING UTILITIES. ONCE THE PROJECT IS COMPLETED, ALL MATERIALS SHOULD BE REMOVED, AND THE MULCH SHOULD BE REDUCED TO A DEPTH OF 3 INCHES.
16. PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
17. WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
18. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIM INTO THE SOIL.

TCEQ WATER STORAGE TANKS CONSTRUCTION NOTES:

1. COATING OF TANK AND ALL APPURTENANCES SHALL BE IN STRICT ACCORDANCE WITH AWWA STANDARDS. PAINT USED SHALL CONFORM TO ANSI/NSF STANDARD 61.
2. BOLTED TANKS SHALL BE DESIGNED, FABRICATED, ERECTED AND TESTED IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD D100. THE ROOF OF ALL METAL TANKS SHALL BE DESIGNED, ERECTED SO THAT NO WATER PONDS AT ANY POINT ON THE ROOF AND, IN ADDITION, NO AREA OF THE ROOF SHALL HAVE A SLOPE OF LESS THAN 0.75 INCH PER FOOT.
3. ROOF VENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARDS AND SHALL BE EQUIPPED WITH APPROVED SCREENS TO PREVENT ENTRY OF ANIMALS, BIRDS, INSECTS AND HEAVY AIR CONTAMINANTS. SCREENS SHALL BE FABRICATED OF CORROSION RESISTANT MATERIAL AND SHALL BE I6 MESH OR FINER. SCREENS SHALL BE SECURELY CLAMPED IN PLACE WITH STAINLESS OR GALVANIZED BANDS OR WIRES AND SHALL BE DESIGNED TO WITHSTAND OF NO LESS THANK TANK DESIGN CRITERIA (UNLESS SPECIFIED OTHERWISE BY THE ENGINEER).
4. ALL ROOF OPENINGS SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT AWWA STANDARDS. IF AN ALTERNATE 30 INCH DIAMETER ACCESS OPENING IS NOT PROVIDED IN STORAGE TANK, THE PRIMARY ROOF ACCESS OPENING SHALL NOT BE LESS THANK 30 INCHES IN DIAMETER. OTHER ROOF OPENINGS REQUIRED ONLY FOR VENTILATING PURPOSES DURING CLEANING, REPAIRING OR PAINTING OPERATIONS SHALL BE NOT LESS THAN 24 INCHES IN DIAMETER OR AS SPECIFIED BY THE LICENSED PROFESSIONAL ENGINEER. AN EXISTING TANK WITHOUT A 30-INCH IN DIAMETER ACCESS OPENING MUST BE MODIFIED TO MEET THIS REQUIREMENT WHEN MAJOR REPAIR OR MAINTENANCE IS PERFORMED ON THE TANK. EACH ACCESS OPENING SHALL HAVE A RAISED CURBING AT LEAST FOUR INCHES IN HEIGHT WITH A LOCKABLE OVER THAT OVERLAPS THE CURBING AT LEAST TWO INCHES IN A DOWNWARD DIRECTION. WHERE NECESSARY, A GASKET SHALL BE USED TO MAKE A POSITIVE SEAL WHEN THE HATCH IS CLOSED. ALL HATCHES SHALL REMAIN LOCKED EXCEPT DURING INSPECTIONS AND MAINTENANCE.
5. OVERFLOWS SHALL BE DESIGNED IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARDS AND SHALL TERMINATE WITH A GRAVITY-HINGED AND WEIGHTED COVER, AN ELASTOMERIC DUCKBILL VALVE, OR OTHER APPROVED DEVICE TO PREVENT THE ENTRANCE OF INSECTS AND OTHER NUISANCES. THE COVER SHALL FIT TIGHTLY WITH NO GAP OVER 1/16 INCHES. IF THE OVERFLOW TERMINATES AT ANY POINT OTHER THAN THE GROUND LEVEL, IT SHALL BE LOCATED NEAR ENOUGH AND AT A POSITION ACCESSIBLE FROM A LADDER OR THE BALCONY FOR INSPECTION PURPOSES. THE OVERFLOW(S) SHALL BE SIZED TO HANDLE THE MAXIMUM POSSIBLE FILL RATE WITHOUT EXCEEDING THE CAPACITY OF THE OVERFLOW(S). THE DISCHARGE OPENING OF THE OVERFLOW(S) SHALL BE ABOVE THE SURFACE OF THE GROUND AND SHALL NOT BE SUBJECT TO SUBMERGENCE.
6. ALL CLEARWELLS AND WATER STORAGE TANKS SHALL HAVE A LIQUID LEVEL INDICATOR LOCATED AT THE TANK SITE. THE INDICATOR CAN BE AN ULTRASONIC LEVEL INDICATOR, AND A PRESSURE GAUGE CALIBRATED IN FEET OF WATER. PRESSURE GAUGES MUST NOT BE LESS THAN THREE INCHES IN DIAMETER AND CALIBRATED AT NOT MORE THAN TWO-FOOT INTERVALS. REMOTE READING GAUGES AT THE OWNER'S TREATMENT PLANT OR PUMPING STATION WILL NOT ELIMINATE THE REQUIREMENT FOR A GAUGE AT THE TANK SITE UNLESS THE TANK IS LOCATED AT THE PLANT OR STATION.
7. CLEARWELLS AND WATER STORAGE TANKS SHALL BE THOROUGHLY TIGHT AGAINST LEAKAGE, SHALL BE LOCATED ABOVE THE GROUND WATER TABLE AND SHALL HAVE NO WALLS IN COMMON WITH ANY OTHER PLANT UNITS CONTAINING WATER IN THE PROCESS OF TREATMENT. ALL ASSOCIATED APPURTENANCES INCLUDING VALVES, PIPES AND FITTINGS SHALL BE TIGHT AGAINST LEAKAGE.
8. ALL CLEARWELLS, GROUND STORAGE TANKS, STANDPIPES, AND ELEVATED TANKS SHALL BE PAINTED, DISINFECTED, AND MAINTAINED IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARDS. HOWEVER, NO TEMPORARY COATINGS, WAX GREASE COATINGS, OR COATING MATERIALS CONTAINING LEAD WILL BE ALLOWED. NO OTHER COATINGS WILL BE ALLOWED WHICH ARE NOT APPROVED FOR USE (AS A CONTACT SURFACE WITH POTABLE WATER) BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA), NSF INTERNATIONAL, OR THE UNITED STATES FOOD AND DRUG ADMINISTRATION (FDA). ALL NEWLY INSTALLED COATINGS MUST CONFORM TO ANSI/NSF INTERNATIONAL STANDARDS 6I AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
9. ACCESS MANWAYS IN THE RISER PIPE, SHELL AREA, ACCESS TUBE, BOWL AREA OR ANY OTHER LOCATION OPENING DIRECTLY INTO THE WATER COMPARTMENT SHALL BE LOCATED IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARDS. THESE OPENINGS SHALL NOT BE LESS THAN 24 INCHES IN DIAMETER, HOWEVER, IN THE CASE OF A RISER PIPE OR ACCESS TUBE OF 36 INCHES IN DIAMETER OR SMALLER, THE ACCESS MANWAY MAY BE 18 INCHES TIMES 24 INCHES WITH THE VERTICAL DIMENSION NOT LESS THAN 24 INCHES. THE PRIMARY ACCESS MANWAY IN THE LOWER RING OR SECTION OF A GROUND STORAGE TANK SHALL BE NOT LESS THAN 30 INCHES IN DIAMETER. WHERE NECESSARY, FOR ANY ACCESS MANWAY WHICH ALLOWS DIRECT ACCESS TO THE WATER COMPARTMENT, A GASKET SHALL BE USED TO MAKE A POSITIVE SEAL WHEN THE ACCESS MANWAY IS CLOSED.
10. SERVICE PUMPS TAKING SUCTION FROM STORAGE TANKS SHALL PROVIDE WITH AUTOMATIC LOW WATER LEVEL SHUTOFF DEVICES TO PREVENT DAMAGE TO THE PUMPS. PUMPS SHALL RESUME PUMPING AUTOMATICALLY ONCE WATER LEVEL IN THE TANK RISES ABOVE LOW WATER LEVEL ALARM.
11. PURSUANT TO 30 TAC §290.44(B)(I), THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT.

TCEQ CONTRIBUTING ZONE GENERAL NOTES:

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE: -
2. THE NAME OF THE APPROVED PROJECT;
3. THE ACTIVITY START DATE; AND
4. THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
5. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ONSITE.
6. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
7. 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. 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.
8. 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.
9. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN’S DESIGN CAPACITY.
10. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
11. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
12. IF PORTIONS OF THE SITE WILL HAVE A 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.
13. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
14. THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
15. THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
16. THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
17. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
18. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
19. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
20. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
21. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

Westwood

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TBPELS SURVEYING FIRM NO. 10074301
westwoodps.com

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4
WWTP EFFLUENT STORAGE TANK ADDITION
GENERAL NOTES

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO.
0052766.04

Jacob W Valentien
124993
2-5-2026

Last Saved by: ANobles
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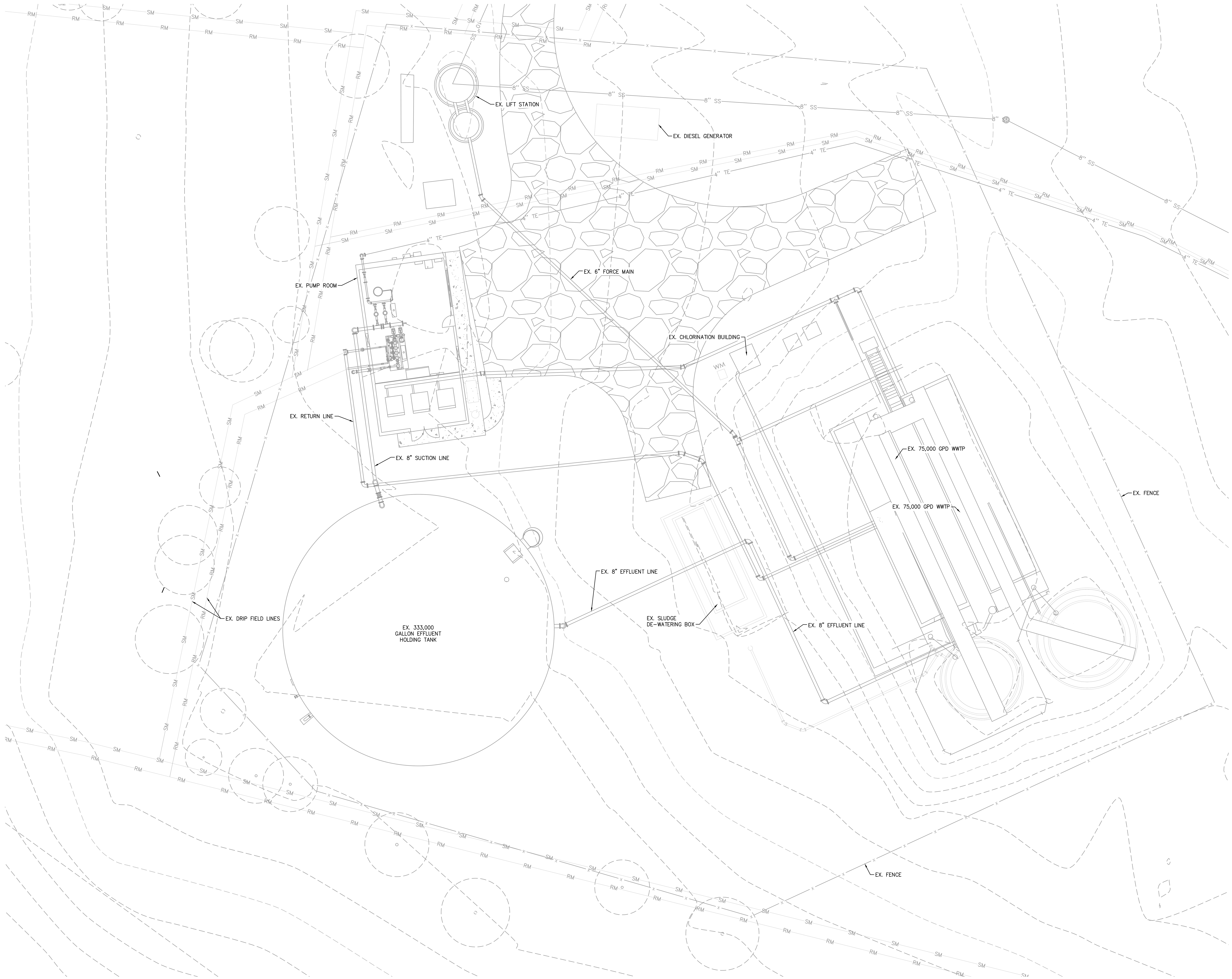

LEGEND

X	EXISTING FENCE
133	EXISTING CONTOUR
	EXISTING PIPING
8" SS	EXISTING SEWER LINE
S	EXISTING SEWER MH
TE	EXISTING SPRAY FIELD TREATED EFFLUENT
SM	EXISTING 4" DRIP FIELD SUPPLY MAIN
RM	EXISTING 3" DRIP FIELD RETURN MAIN

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EXISTING SITE PLAN

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV

PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

3

SHEET 3 OF 22

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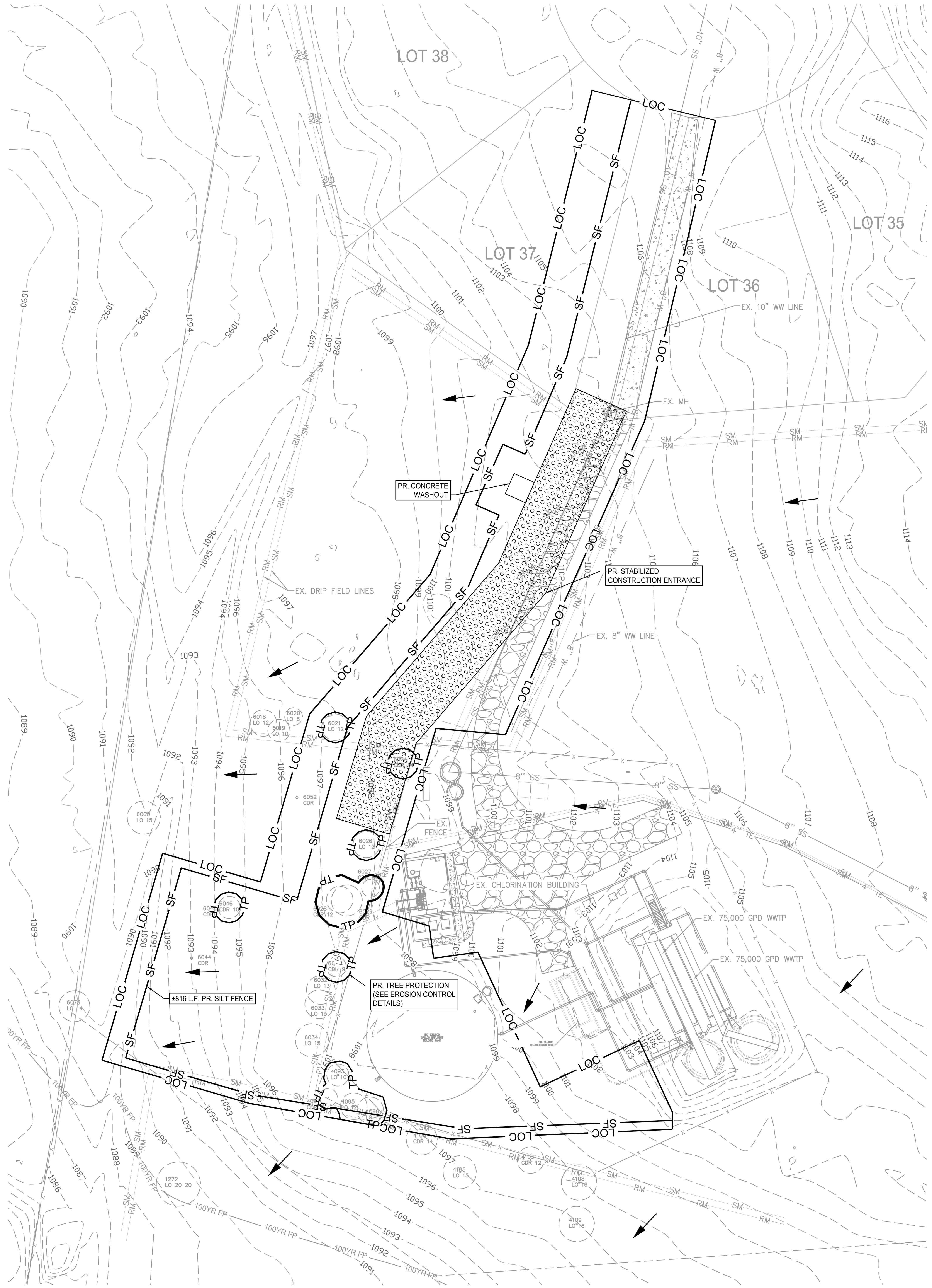

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0 15 30 60 90

1 INCH = 30 FEET

LEGEND

- PROPERTY LINE
- EASEMENT LINE
- 100 YR FLOODPLAIN LIMIT
- EXISTING CONTOUR
- EXISTING FENCE
- SF — PROPOSED SILT FENCE
- LOC — PROPOSED LIMITS OF CONSTRUCTION
- TP — PROPOSED TREE PROTECTION
- DRAINAGE FLOW DIRECTION
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION CONTROLS AT LOCATIONS SHOWN ON PLANS.
2. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
3. CONTRACTOR SHALL MAINTAIN, REPAIR, AND OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT.
4. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS , AND OTHER POTENTIALLY TOXIC MATERIALS.
5. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. FUEL STORAGE SHALL HAVE LEAK CONTAINMENT.
6. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
7. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF FUELS AND MATERIALS IN ACCORDANCE WITH ALL LAWS AND REGULATIONS.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
9. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, ALL MUD AND DIRT DEPOSITED ON EXISTRING PAVEMENT DUE TO CONSTRUCTION ACTIVITY.
11. CONTRACTOR TO PROVIDE CLEARING AS NECESSARY FOR INSTALLATION OF ALL EROSION CONTROL PLAN MEASURES. FIELD ROUTING OF STABILIZED CONSTRUCTION ENTRANCE TO BE REVIEWED AND APPROVED ON SITE WITH ENGINEER.
12. PROPOSED STABILIZED CONSTRUCTION ENTRANCE LIMITS TO BE CONFIRMED BY CONTRACTOR AND SHALL BE PLACED ON TOP OF BURIED DRIP FIELD SUPPLY AND RETURN MAINS AT A MINIMUM TO PROTECT.

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TBPELS SURVEYING FIRM NO. 10074301

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EROSION CONTROL PLAN

DATE: JAN 2026

DRAFTER: MAW

DESIGNER: AAN

CHECKED: JWV

PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W. Valentien
124993
LICENSED
PROFESSIONAL ENGINEER

2-5-2026

4

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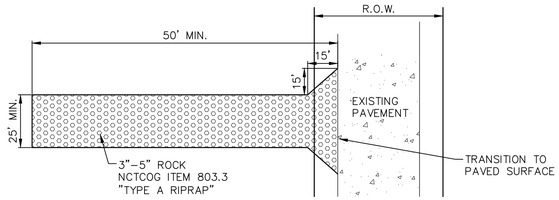

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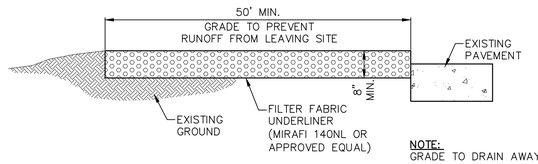
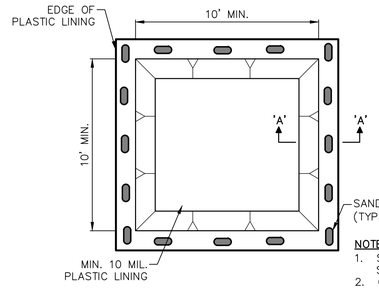


PROFILE

NOTE:
GRADE TO DRAIN AWAY FROM STABILIZATION AND STREET PAVED SURFACE. DRAINAGE MUST FLOW AWAY FROM ENTRANCE

1 STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



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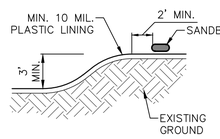
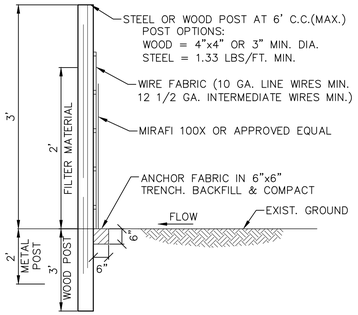


SECTION A–A

NOTE:
1. SANDBAGS MAY BE REPLACED BY A SOIL BERM TO ANCHOR PLASTIC LINING.
2. CONCRETE WASHOUT AREA TO BE CHECKED REGULARLY FOR REPAIRS.
3. REGULARLY REMOVE CONCRETE WASTE TO PREVENT OVERFLOWING.
4. PROVIDE MINIMUM 6 CF OF CONTAINMENT VOLUME FOR EVERY 10 CY OF CONCRETE PLACED. PROVIDE MINIMUM 1' FREEBOARD ABOVE CONTAINMENT VOLUME.

2 CONCRETE WASHOUT AREA

NOT TO SCALE



3 SILT FENCE

NOT TO SCALE

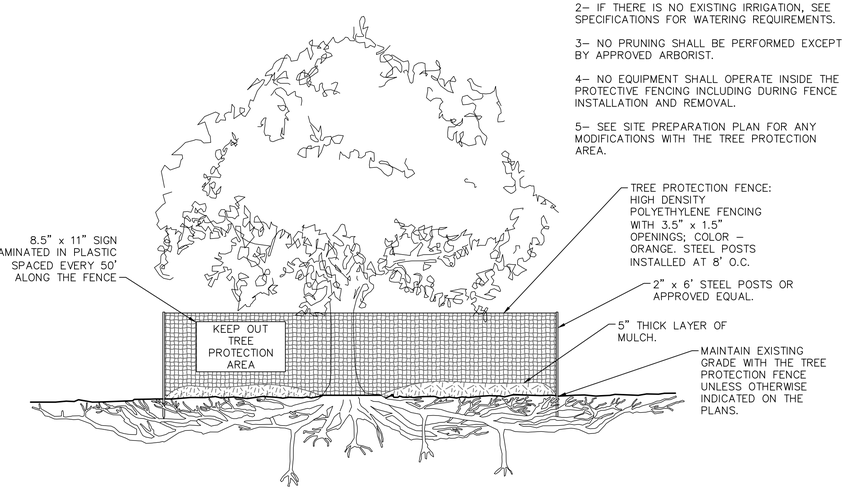
NOTES:
1– SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.

2– IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.

3– NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.

4– NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.

5– SEE SITE PREPARATION PLAN FOR ANY MODIFICATIONS WITH THE TREE PROTECTION AREA.



SECTION VIEW

4 TREE PROTECTION DETAIL

NOT TO SCALE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EROSION CONTROL DETAILS

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W. Valentien
124993
LICENSED PROFESSIONAL ENGINEER
2-5-2026

5

SHEET 5 OF 22

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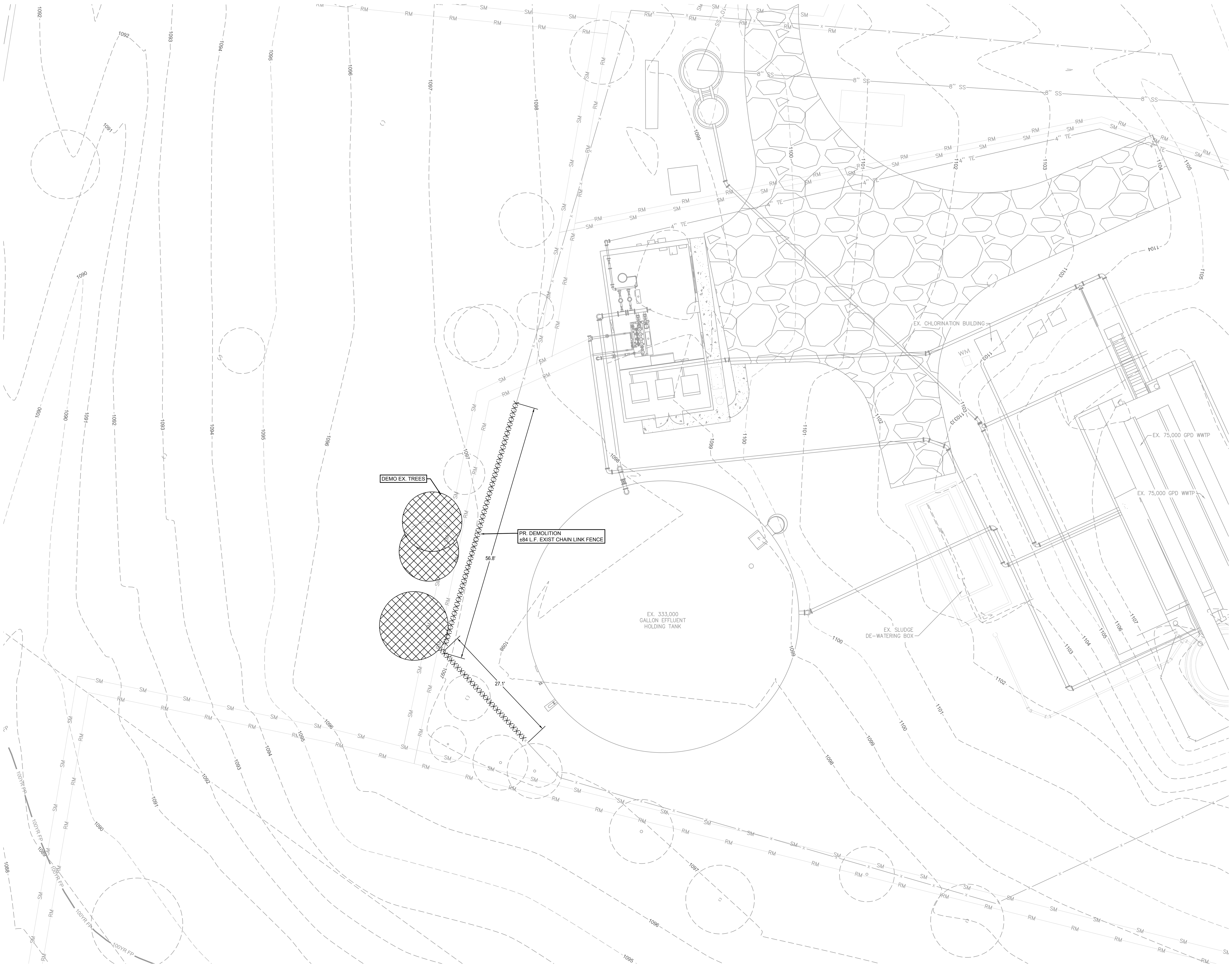

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1 INCH = 30 FEET

LEGEND

Symbol	Description
X	EXISTING FENCE
133	EXISTING CONTOUR
	EXISTING PIPING
8" SS	EXISTING SEWER LINE
S	EXISTING SEWER MH
TE	EXISTING SPRAY FIELD TREATED EFFLUENT
SM	EXISTING 4" DRIP FIELD SUPPLY MAIN
RM	EXISTING 3" DRIP FIELD RETURN MAIN
XXXXXXXXXXXX	DEMOLITION LINE

NOTES:

1. FOR DEMOLITION NOTES, SEE SHEET 2 TITLED DEMOLITION NOTES.

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

DEMOLITION PLAN

DATE: JAN 2026

DRAFTER: MAW

DESIGNER: AAN

CHECKED: JWV

PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
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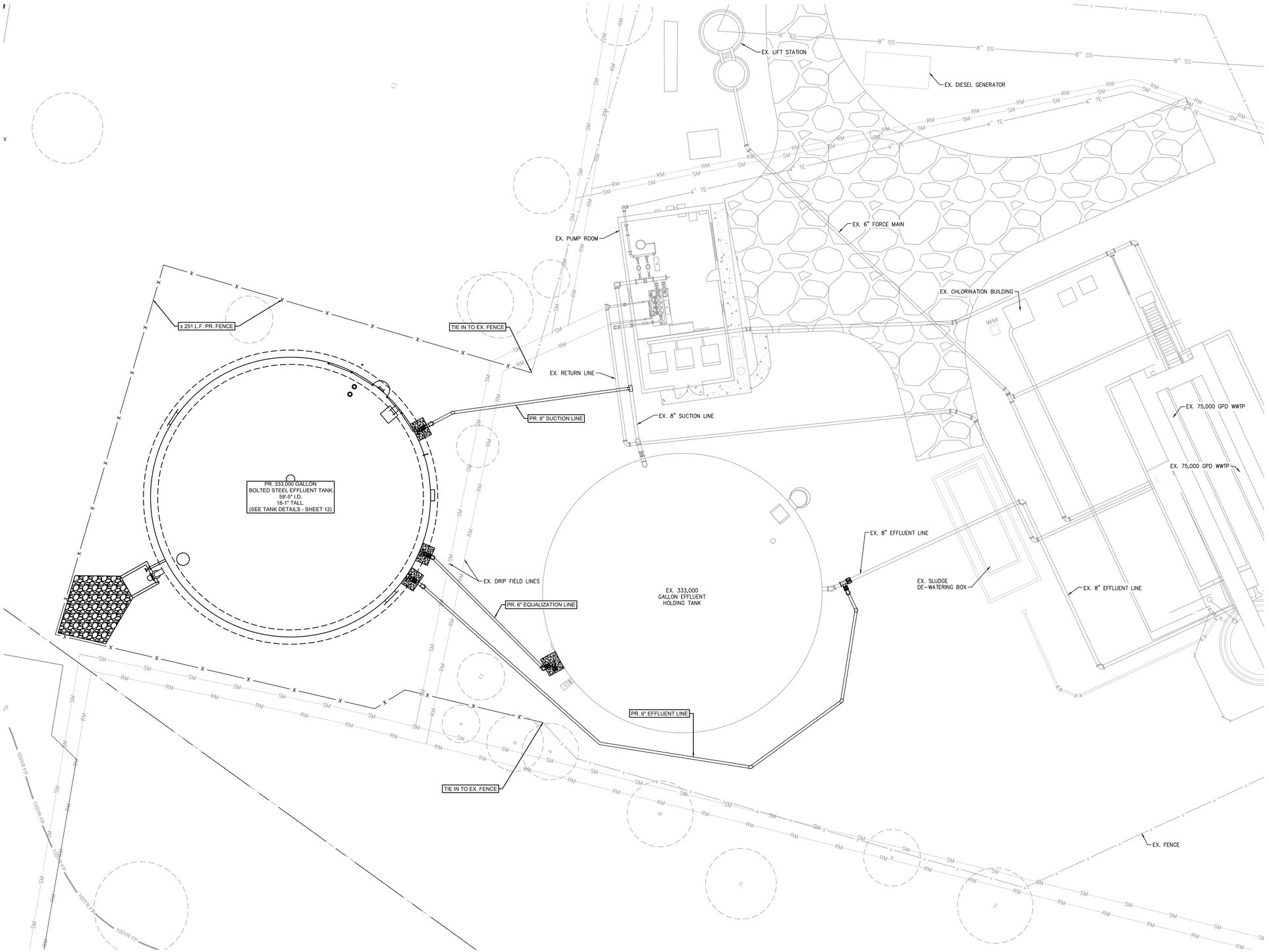
PROFESSIONAL ENGINEER
2-5-2026

6



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X	EXISTING FENCE
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SM	EXISTING 4" DRIP FIELD SUPPLY MAIN
RM	EXISTING 3" DRIP FIELD RETURN MAIN
	PROPOSED PIPING
X	PROPOSED FENCE

STANDARD SEQUENCE OF CONSTRUCTION:

THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE USED FOR ALL DEVELOPMENT. THE CONTRACTOR IS ENCOURAGE TO PROVIDE ANY ADDITIONAL DETAILS NECESSARY FOR COMPLETING CONSTRUCTION IN TIMELY MANNER. THIS SEQUENCING DOES NOT PROVIDE MEANS AND METHODS TO THE CONTRACTOR AND IS ONLY TO BE USED AS A SCHEDULING GUIDELINE.

1. CONTRACTOR TO CLEAR AND GRUB SITE AND ESTABLISH CONSTRUCTION ENTRANCES AND TEMPORARY ACCESS ROADS IN LOCATIONS AS SPECIFIED IN THE PLANS. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE EROSION CONTROL PLAN.
2. CONTRACTOR TO DEMO AS SPECIFIED IN THE PLANS.
3. CONTRACTOR TO INSTALL PROTECTION TO ALL EXISTING INFRASTRUCTURE THROUGHOUT CONSTRUCTION PROCESS.
4. CONSTRUCTION OF TANK FOUNDATION AND ERECTION OF WELDED STEEL TANK TO BE COMPLETED BEFORE BEGINNING TO INSTALL PIPING AS TO REDUCE THE AMOUNT OF TIME WHERE EXISTING FACILITIES MUST BE SHUT-DOWN.
5. THE PROPOSED TANK MUST BE OPERATIONAL BEFORE IMPROVEMENTS TO EXISTING TANK ARE BEGUN.
6. ONCE REQUIRED TESTING HAS BEEN APPROVED BY ENGINEER AND HAYS COUNTY MUD 4, CONTRACTOR TO FACILITATE FURTHER WORK NEEDED TO COMPLETE WORK INCLUDING FENCE INSTALLATION AND COORDINATION WITH ELECTRICAL ENGINEER.
7. ONCE ALL WORK HAS BEEN APPROVED BY ENGINEER AND HAYS COUNTY MUD 4, CONTRACTOR TO COORDINATE WITH HAYS COUNTY MUD 4 TO SCHEDULE BRINGING NEW SITE ADDITIONS ONLINE.
8. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE ENGINEER, AND WITH APPROVAL BY HAYS COUNTY MUD 4, REMOVAL OF EROSION CONTROL AND SITE ACCESS PROVISIONS TO BE REMOVED.

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TBPELS SURVEYING FIRM NO. 10074301
westwoodps.com

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

PROPOSED SITE PLAN

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
1-5-2026

7

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LEGEND

X	EXISTING FENCE
133	EXISTING CONTOUR
	EXISTING PIPING
8" SS	EXISTING SEWER LINE
S	EXISTING SEWER MH
TE	EXISTING SPRAY FIELD TREATED EFFLUENT
SM	EXISTING 4" DRIP FIELD SUPPLY MAIN
RM	EXISTING 3" DRIP FIELD RETURN MAIN
	PROPOSED PIPING
X	PROPOSED FENCE

Point Table			
Point #	Raw Description	Northing	Easting
101	CENTER PR. GST TANK	13989004.6489	2289661.7200
102	PR. FENCE CORNER	13989031.0493	2289712.8546
103	PR. FENCE CORNER	13989053.9172	2289634.7731
104	PR. FENCE CORNER	13988975.4782	2289611.8005
105	PR. FENCE CORNER	13988959.7311	2289679.5981
106	PR. FENCE CORNER	13988963.7272	2289685.9823
107	PR. FENCE CORNER	13988956.7729	2289715.2916

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

DIMENSION CONTROL PLAN

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W. Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-2-2026

8

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PR.TRIANGULAR GRASSY SWALE (SEE DETAIL)

TOB = 1093.4'

FL = 1092.9'

PR. 6" ROCK RIPRAP (20 SY)

TOB = 1091.7'

FL = 1091.2'

EL = 1092.6'

FL = 1091.0'

EL = 1090.2'

TOB = 1091.5'

9.4%

FL = 1096.6'

TOB = 1097.1'

PR.TRIANGULAR GRASSY SWALE (SEE DETAIL)

EXISTING 333,000 GALLON EFFLUENT HOLDING TANK FFE = 1098.37'

8" SS

4" TE

SM

RM

WM

N

0 5 10 20 30

1 INCH = 30 FEET

LEGEND

X	EXISTING FENCE
133	EXISTING CONTOUR
	EXISTING PIPING
8" SS	EXISTING SEWER LINE
	EXISTING SEWER MH
TE	EXISTING SPRAY FIELD TREATED EFFLUENT
SM	EXISTING 4" DRIP FIELD SUPPLY MAIN
RM	EXISTING 3" DRIP FIELD RETURN MAIN
	PROPOSED PIPING
X	PROPOSED FENCE
FFE	FINISHED FLOOR ELEVATION
133	PROPOSED CONTOUR

CUT/FILL SUMMARY	
CUT =	32.04 CY
FILL =	194.84 CY
NET (FILL) =	162.80 CY

TYPICAL SWALE
(NOT TO SCALE)

NOTES:
1. INSTALL RIPRAP EROSION PROTECTION AT THE OVERFLOW AND SWALE OUTFALL AS SHOWN IN THE PLANS.
2. RIPRAP SHALL BE PLACED IN ACCORDANCE WITH SPECIFICATION 02378-RIPRAP AND GRANULAR FILL. FILL RIPRAP VOIDS AND BURY RIPRAP A MINIMUM OF 6-INCHES WITH TOPSOIL ON SIDE SLOPE AS DIRECTED BY THE ENGINEER.
3. RIPRAP SHALL BE PLACED TO NOT BLOCK FLOW FROM SWALE DISCHARGE. SWALE BERM SHALL BE SET TO BE 6" HIGHER THAN SWALE FLOW LINE ON FENCE SIDE. RIPRAP AREA SHALL BE EXCAVATED DOWN SUCH THAT RIPRAP INSTALLATION, BASED ON SIZE OF ROCK, ALIGNS WITH SWALE DISCHARGE AND PROPOSED FINISHED GRADE TIES IN TO EXISTING GRADE AT SITE DISCHARGE LOCATION.

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

PROPOSED GRADING & DRAINAGE PLAN

DATE: JAN 2026

DRAFTER: MAW

DESIGNER: AAN

CHECKED: JWV

PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

9

SHEET 9 OF 22

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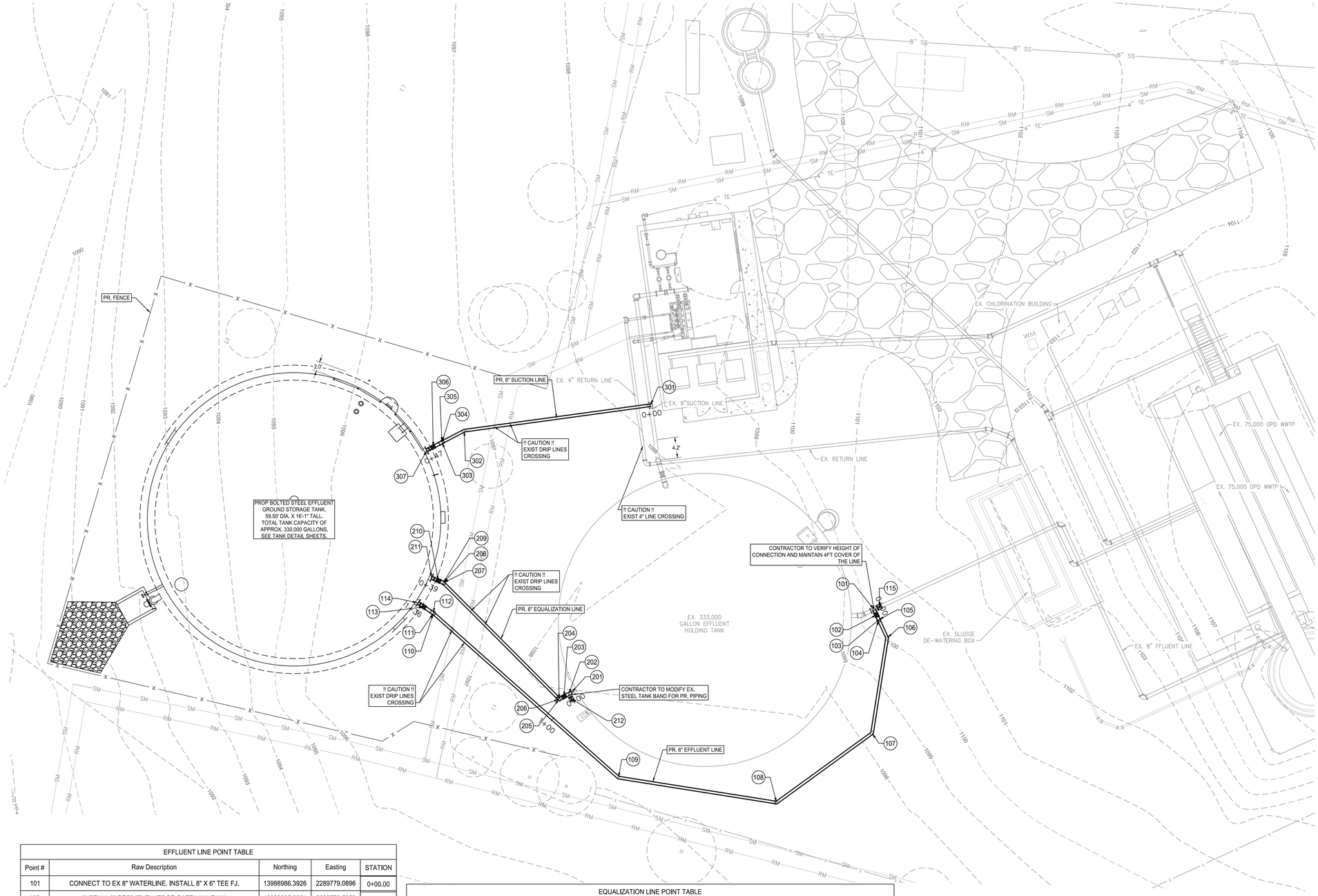

EFFLUENT LINE POINT TABLE				
Point #	Raw Description	Northing	Easting	STATION
101	CONNECT TO EX 8" WATERLINE, INSTALL 8" X 6" TEE FJ.	13988986.3926	2289779.0896	0+00.00
102	INSTALL 6" RESILIENT WEDGE GATE VALVE MJ	13988985.2984	2289779.5959	0+01.19
103	INSTALL 6" 90° VERT BEND FJ	13988984.3136	2289780.0515	0+02.29
104	INSTALL COUPLING ADAPTOR, TRANSITION FROM DI TO PVC PIPE	13988984.3136	2289780.0515	0+02.29
105	INSTALL 6" 90° VERT BEND MJ	13988984.3136	2289780.0515	0+02.29
106	INSTALL 6" 45° HORZ BEND MJ	13988980.6450	2289781.7488	0+06.33
107	INSTALL 6" 45° HORZ BEND MJ	13988961.3396	2289778.6962	0+25.88
108	INSTALL 6" 45° HORZ BEND MJ	13988947.2947	2289759.3753	0+49.76
109	INSTALL 6" 22.5° HORZ BEND MJ	13988952.3561	2289727.3665	0+82.17
110	INSTALL 6" 90° VERT BEND MJ	13988985.6337	2289689.9112	1+32.27
111	INSTALL COUPLING ADAPTOR, TRANSITION FROM PVC TO DI PIPE	13988985.6337	2289689.9112	1+32.27
112	INSTALL 6" 90° VERT BEND FJ	13988985.6337	2289689.9112	1+32.27
113	INSTALL 6" GATE VALVE FJ W/ PIPE SUPPORT	13988986.9179	2289688.0074	1+34.57
114	CONNECT TO 6" EFFLUENT FLANGE OF PR. TANK.	13988987.7566	2289686.7639	1+35.99
115	INSTALL 8" RESILIENT WEDGE GATE VALVE	13988986.9260	2289780.2259	

EQUALIZATION LINE POINT TABLE				
Point #	Raw Description	Northing	Easting	STATION
201	REMOVE EX. GV AND FLANGE, CONNECT TO EX. FLANGE OF TANK VALVE & INSTALL A 4"X6" REDUCER	13988969.5847	2289717.8343	0+00.00
202	INSTALL 6"X6" TEE FJ W/ PR. DRAIN VALVE	13988969.3023	2289717.3147	0+00.67
203	INSTALL 6" GATE VALVE FJ W/ PIPE SUPPORT.	13988968.7752	2289716.3450	0+01.77
204	INSTALL 6" 90° VERT BEND FJ	13988968.2481	2289715.3753	0+02.87
205	INSTALL COUPLING ADAPTOR, TRANSITION FROM DI TO PVC PIPE	13988968.2481	2289715.3753	0+02.87
206	INSTALL 6" 90° VERT BEND MJ	13988968.2481	2289715.3753	0+02.87
207	INSTALL 6" 90° VERT BEND MJ	13988991.8001	2289691.9284	0+36.11
208	INSTALL COUPLING ADAPTOR, TRANSITION FROM PVC TO DI PIPE	13988991.8001	2289691.9284	0+36.11
209	INSTALL 90° VERT BEND FJ	13988991.8001	2289691.9284	0+36.11
210	INSTALL 6" GATE VAVLE FJ W/ PIPE SUPPORT	13988992.2302	2289690.9173	0+37.21
211	CONNECT TO 6" EQUALIZATION FLANGE OF PR. TANK	13988992.8252	2289689.5183	0+38.64
212	INSTALL 6" GATE VALVE FJ W/ PIPE SUPPORT & BLIND FLANGE.	13988968.3326	2289717.8418	0+00.67

SUCTION LINE POINT TABLE				
Point #	Raw Description	Northing	Easting	STATION
301	CONNECT TO EX. 8" SUCTION LINE, 8"X6" TEE MJ	13989027.7650	2289733.8783	0+00.00
302	INSTALL 6" 22.5° HORZ BEND MJ	13989022.6057	2289696.1637	0+38.07
303	INSTALL 6" 90° VERT BEND MJ	13989020.2506	2289691.6463	0+43.16
304	INSTALL COUPLING ADAPTOR, TRANSITION FROM PVC TO DI PIPE	13989020.2506	2289691.6463	0+43.16
305	INSTALL 6" 90° VERT BEND FJ	13989020.2506	2289691.6463	0+43.16
306	INSTALL 6" GATE VALVE FJ W/ PIPE SUPPORT	13989019.3261	2289689.8729	0+45.16
307	CONNECT TO 6" SUCTION FLANGE OF PR. TANK	13989018.6659	2289688.6134	0+46.58

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4
WWTP EFFLUENT STORAGE TANK ADDITION

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

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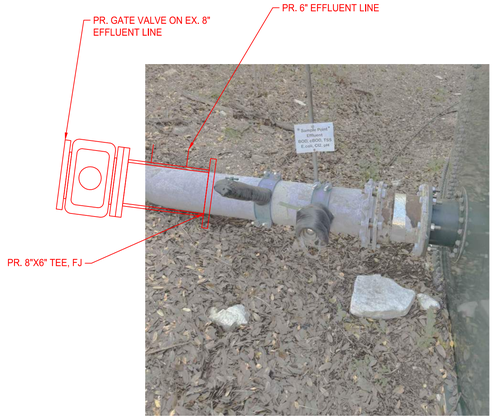
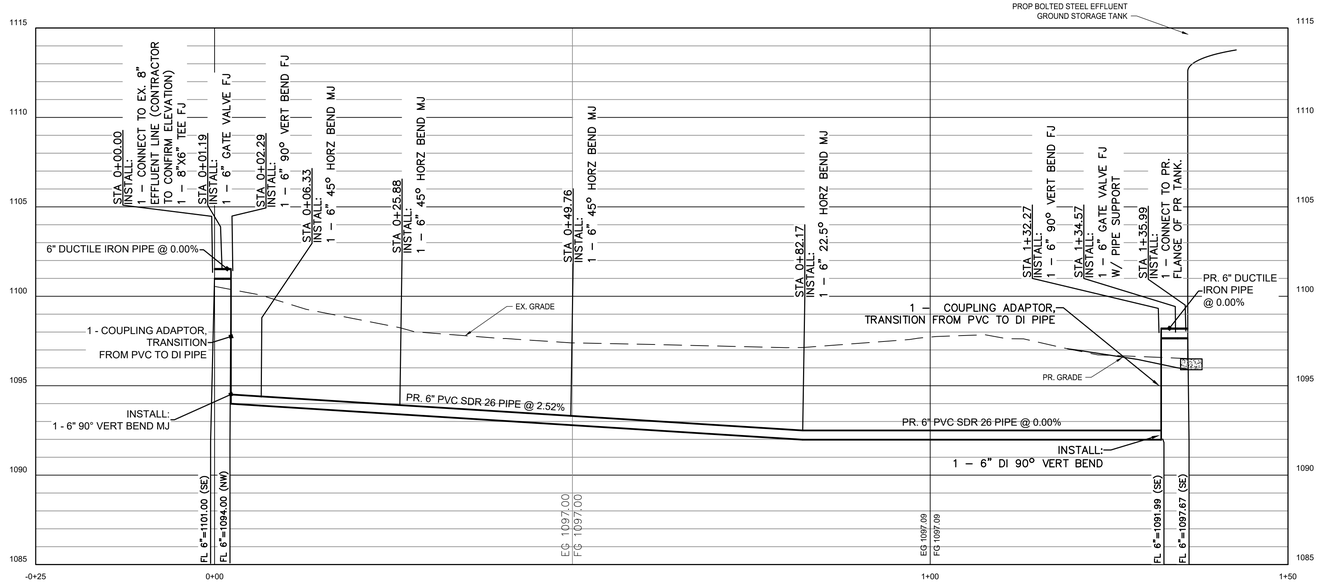
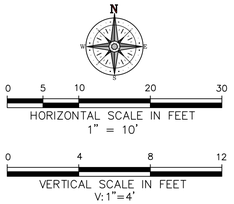
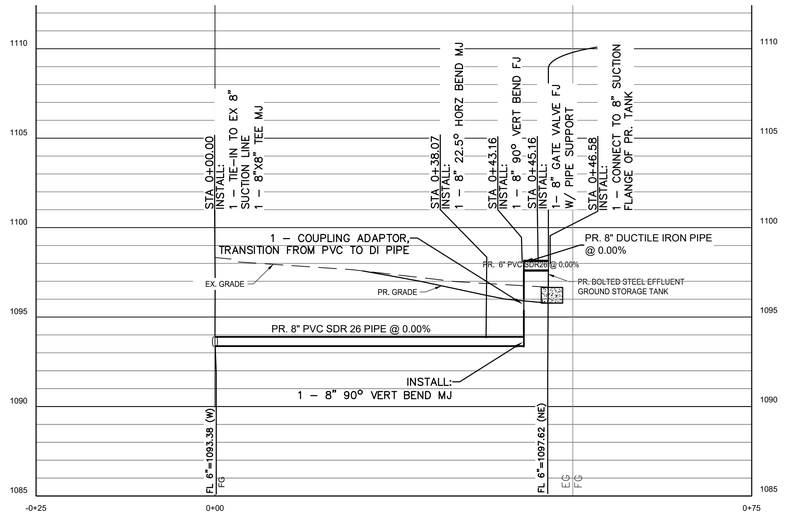


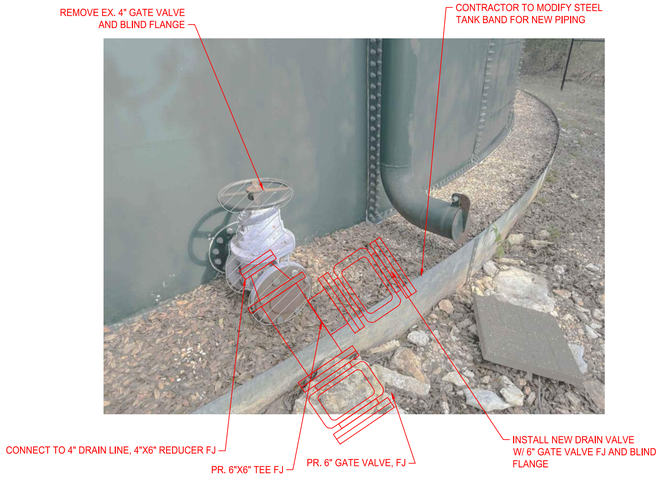


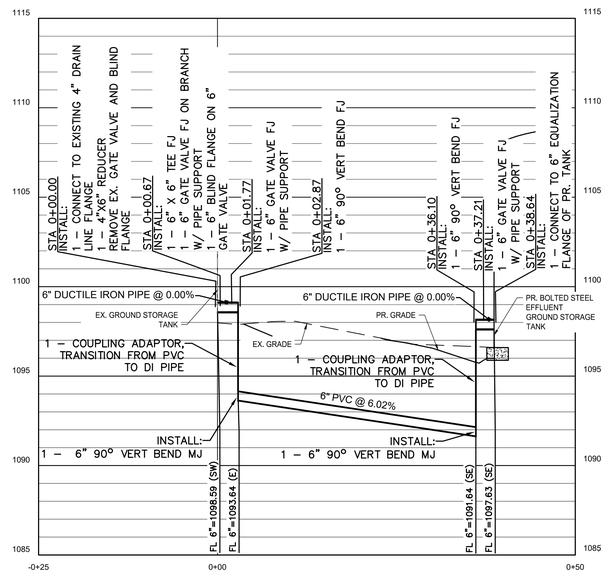
PROFILE: 6-INCH EFFLUENT LINE





PROFILE: 8-INCH SUCTION LINE





PROFILE: 6-INCH EQUALIZATION LINE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

PROPOSED YARD PIPING PROFILES

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

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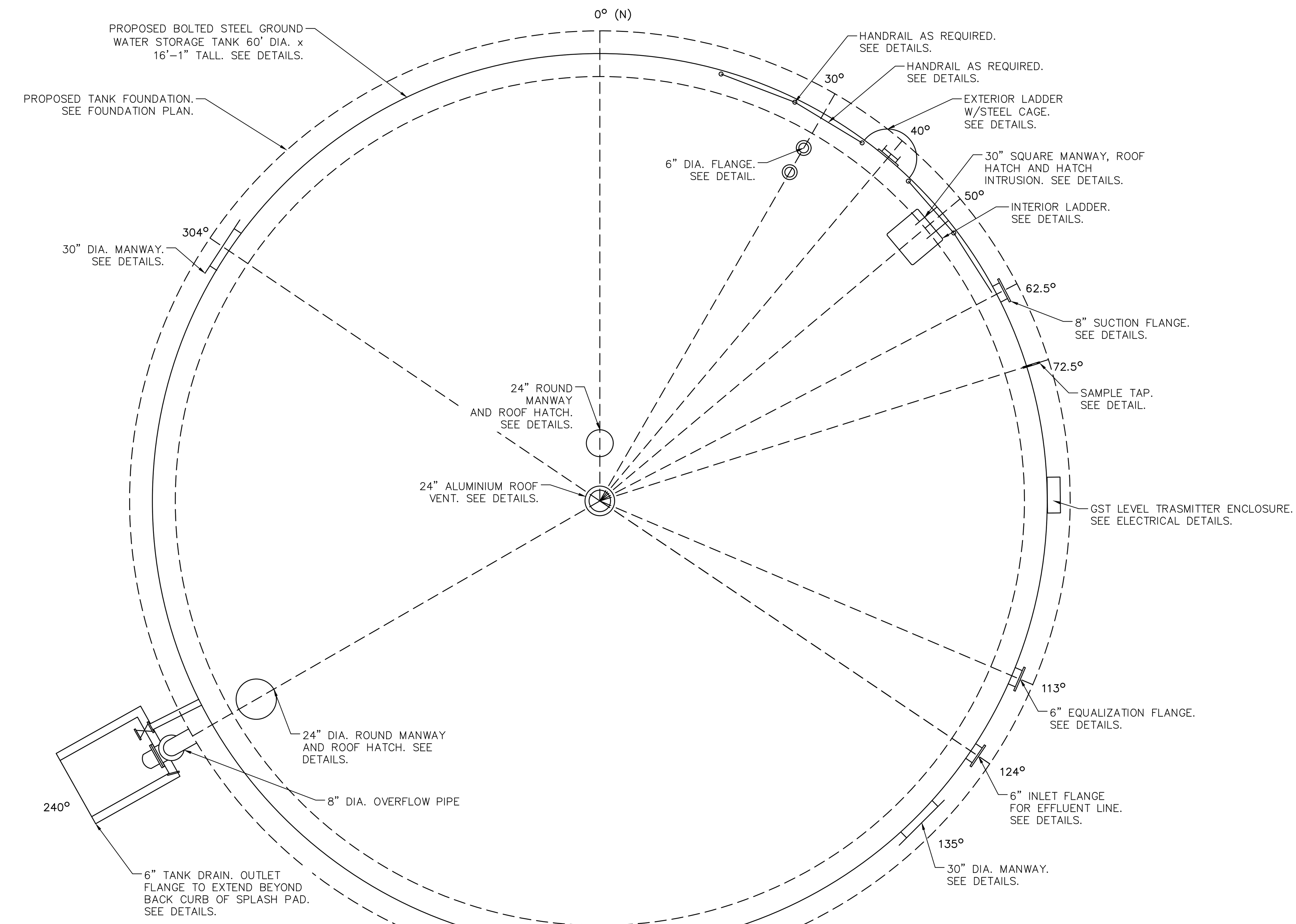
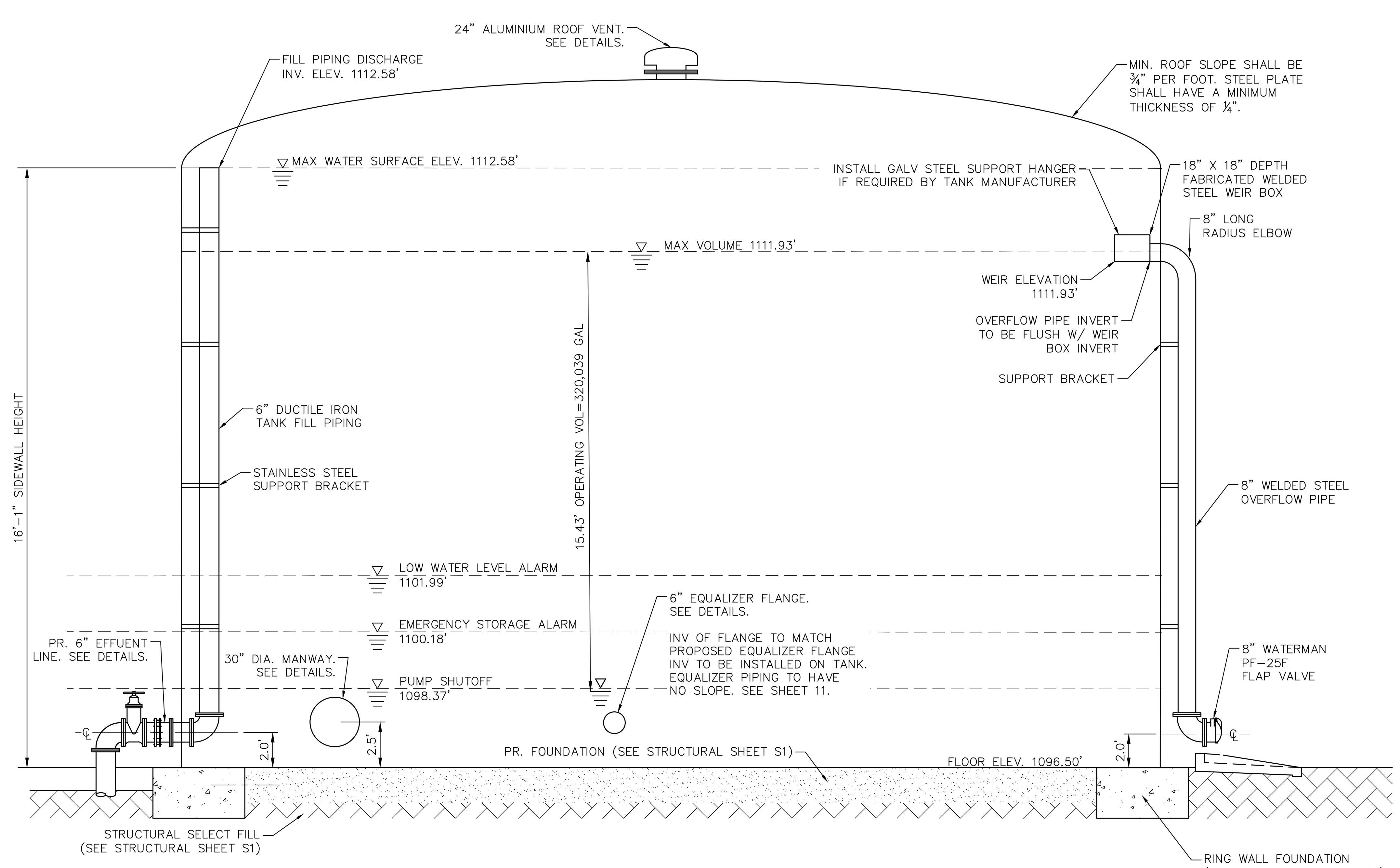


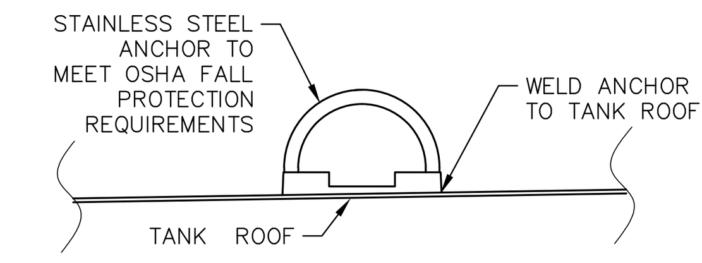
NOTE:

1. CONTRACTOR SHALL COORDINATE EXTERIOR COLOR OF THE PROPOSED TANK WITH THE OWNER.



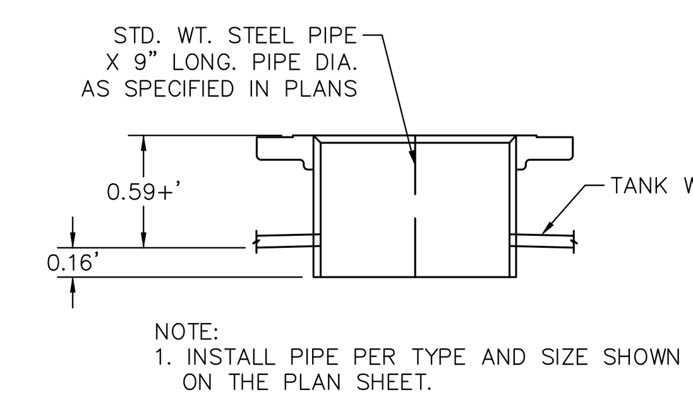
A BOLTED STEEL GROUND WATER TANK

NOT TO SCALE



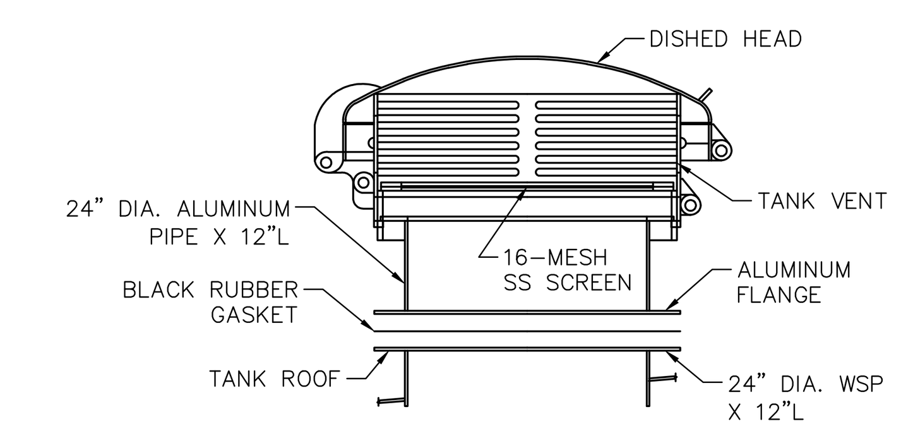
B SAFETY ANCHOR

NOT TO SCALE



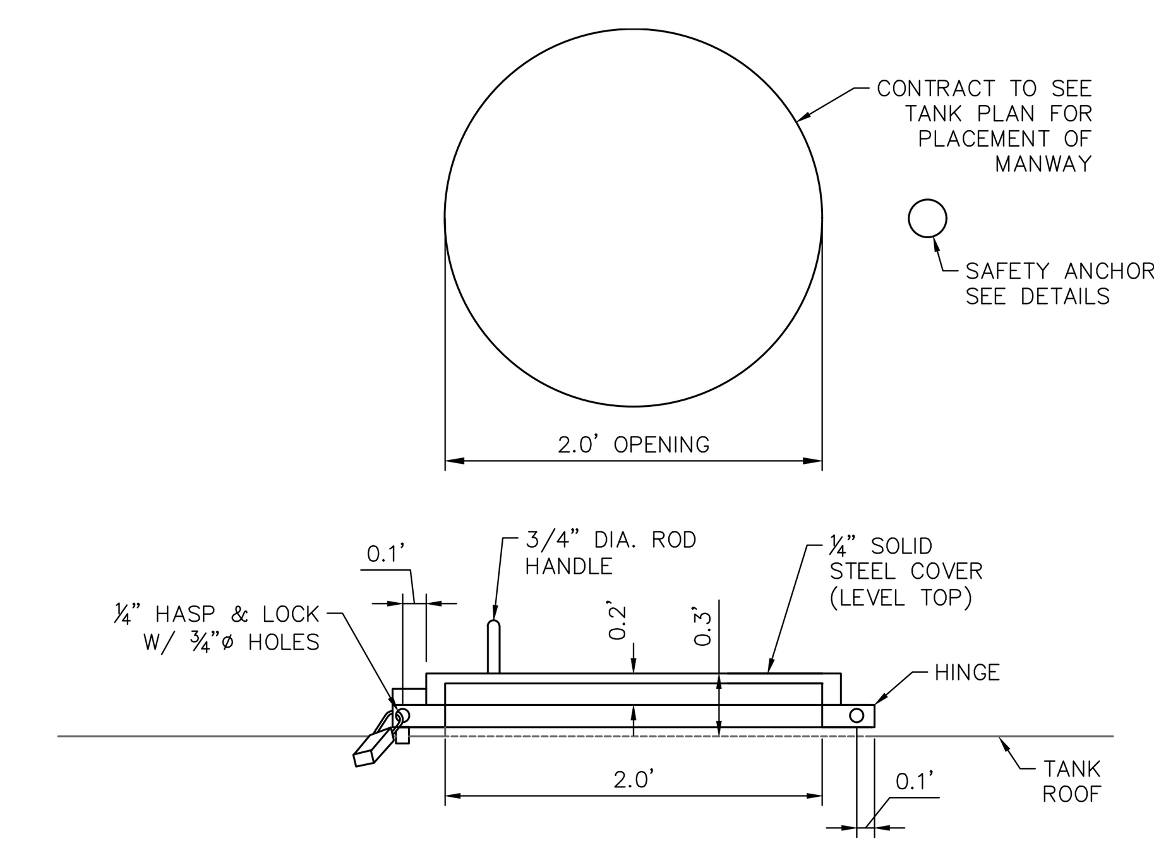
C FLANGE DETAIL

NOT TO SCALE



D ROOF VENT DETAIL

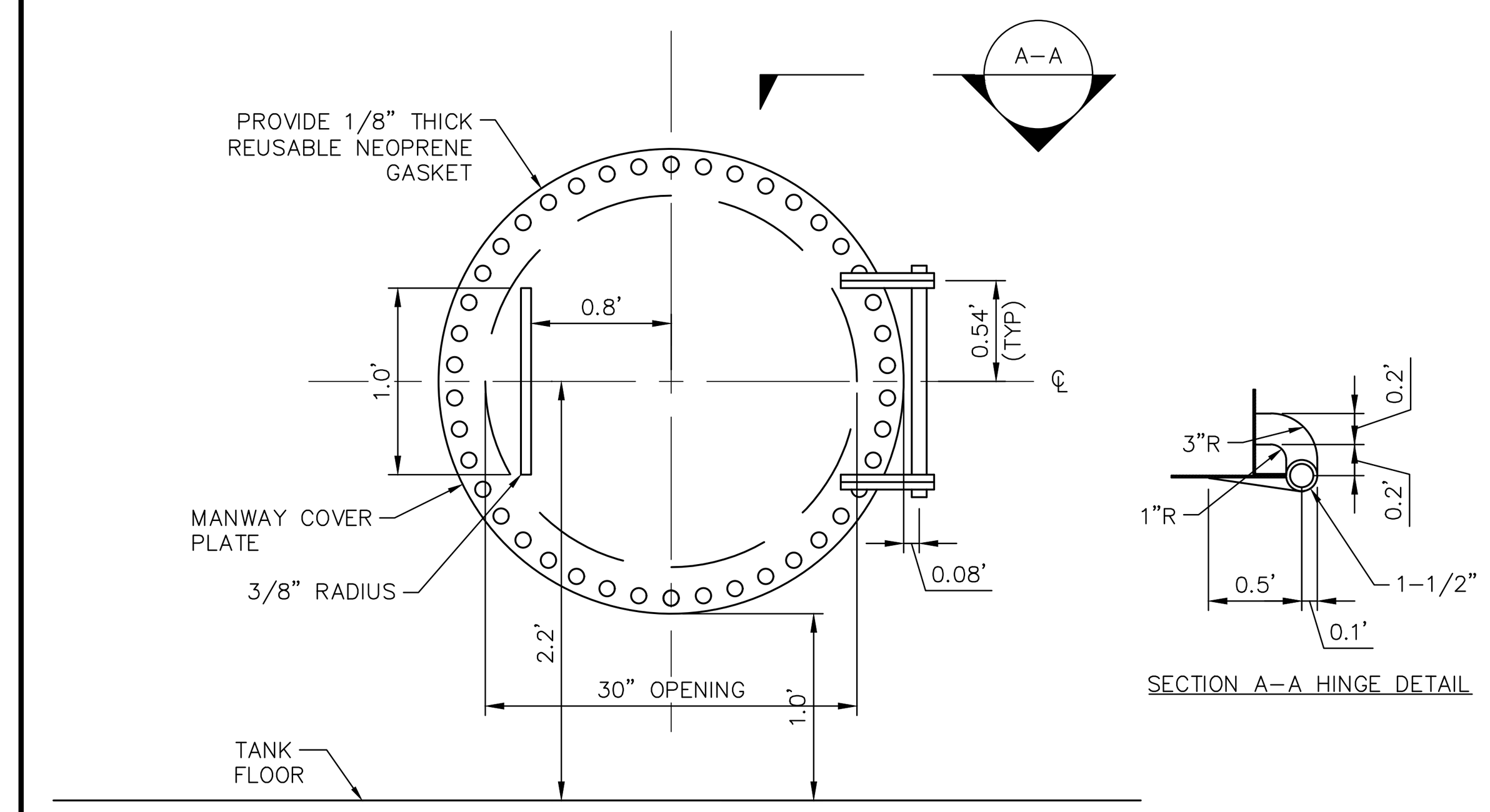
NOT TO SCALE



NOTES:
1. OPENING SHALL HAVE A RAISED CURBING AT FOUR INCHES IN HEIGHT WITH A LOCKABLE COVER THAT OVERLAPS THE CURBING AT LEAST TWO INCHES IN A DOWNWARD DIRECTION.
2. ROOF HATCHES TO BE LOCATED SO THAT HATCH OPENS AWAY FROM TANK ROOF ACCESSORIES.

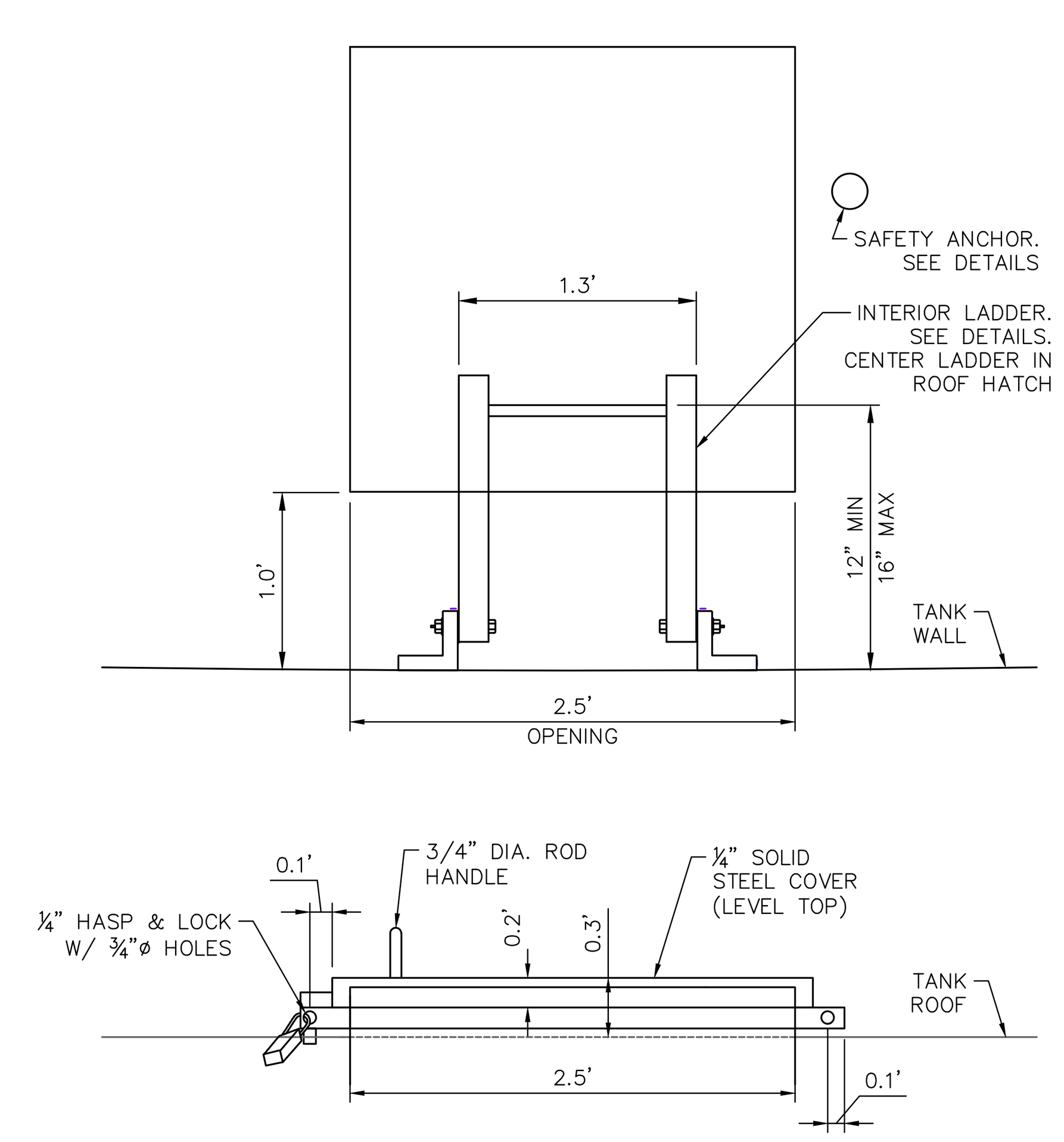
E ROUND ROOF HATCH DETAIL

NOT TO SCALE



F 30" GST SHELL MANWAY DETAIL

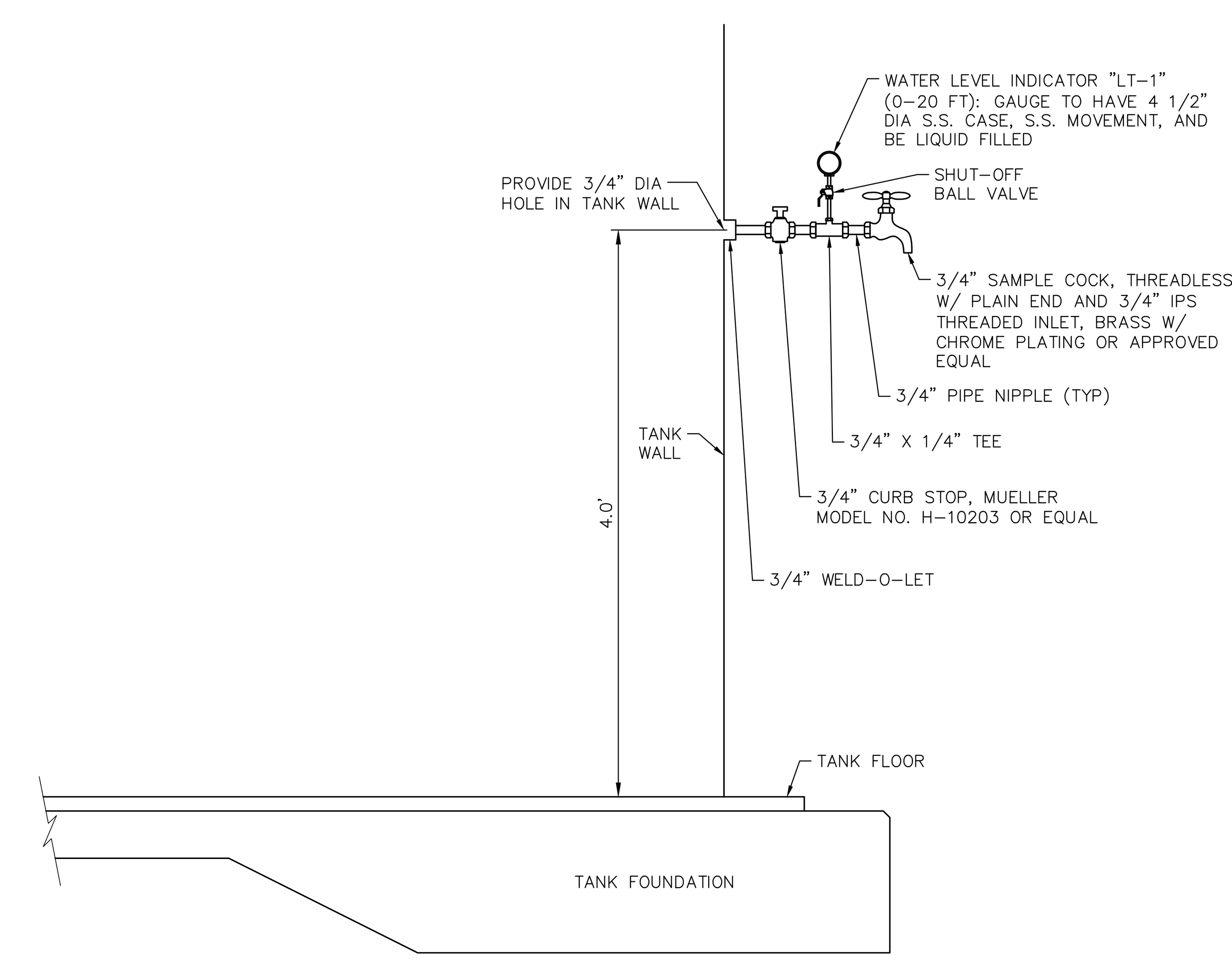
NOT TO SCALE



NOTES:
1. OPENING SHALL HAVE A RAISED CURBING AT FOUR INCHES IN HEIGHT WITH A LOCKABLE COVER THAT OVERLAPS THE CURBING AT LEAST TWO INCHES IN A DOWNWARD DIRECTION.
2. ROOF HATCHES TO BE LOCATED SO THAT HATCH OPENS AWAY FROM TANK ROOF ACCESSORIES.

G SQUARE ROOF HATCH DETAIL

NOT TO SCALE



NOTES:
1. INSULATE ENTIRE ASSEMBLY FOR FREEZE PROTECTION.
2. SEE TOP VIEW FOR ORIENTATION AND LOCATION.

H SAMPLE TAP DETAIL

NOT TO SCALE

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

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HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EFFLUENT STORAGE TANK DETAILS 1 OF 4

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV

PROJECT NO.
0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

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SHEET 12 OF 22

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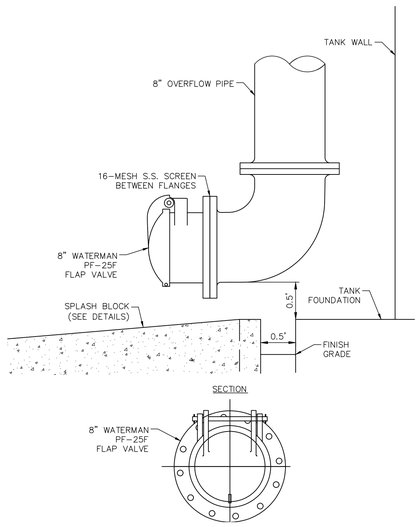

J FLAP VALVE DETAIL

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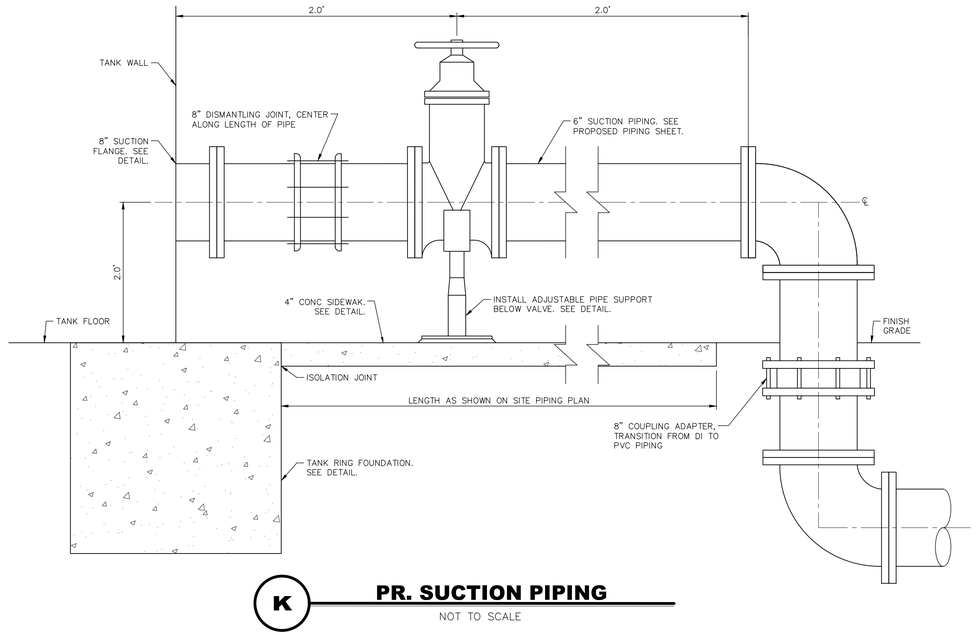

K PR. SUCTION PIPING

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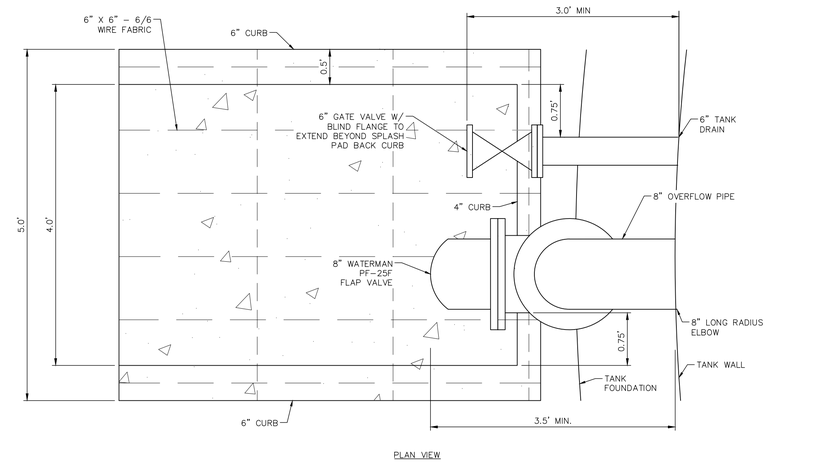
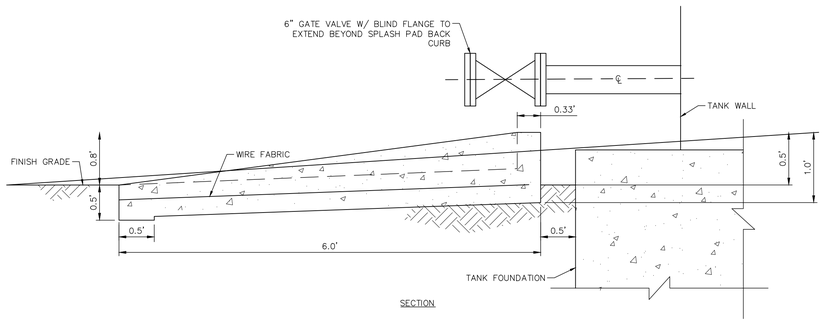
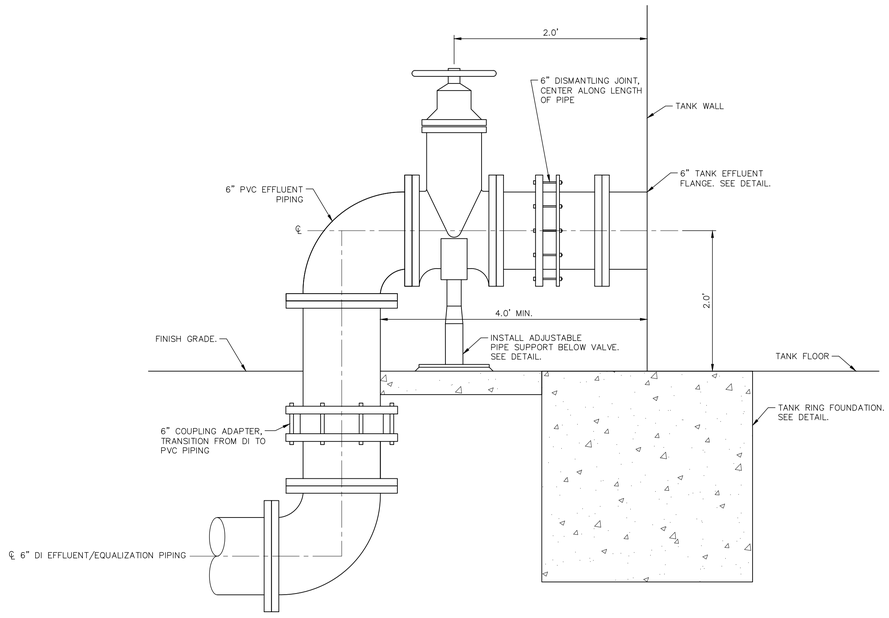




L OVERFLOW, DRAIN VALVE AND SPLASH BLOCK DETAIL

NOT TO SCALE



M PR. EFFLUENT PIPING/PR. EQUALIZATION PIPING

NOT TO SCALE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EFFLUENT STORAGE TANK DETAILS 2 OF 4

DATE:	JAN 2026
DRAFTER:	MAW
DESIGNER:	AAN
CHECKED:	JWV
PROJECT NO.	0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED PROFESSIONAL ENGINEER
1-5-2026

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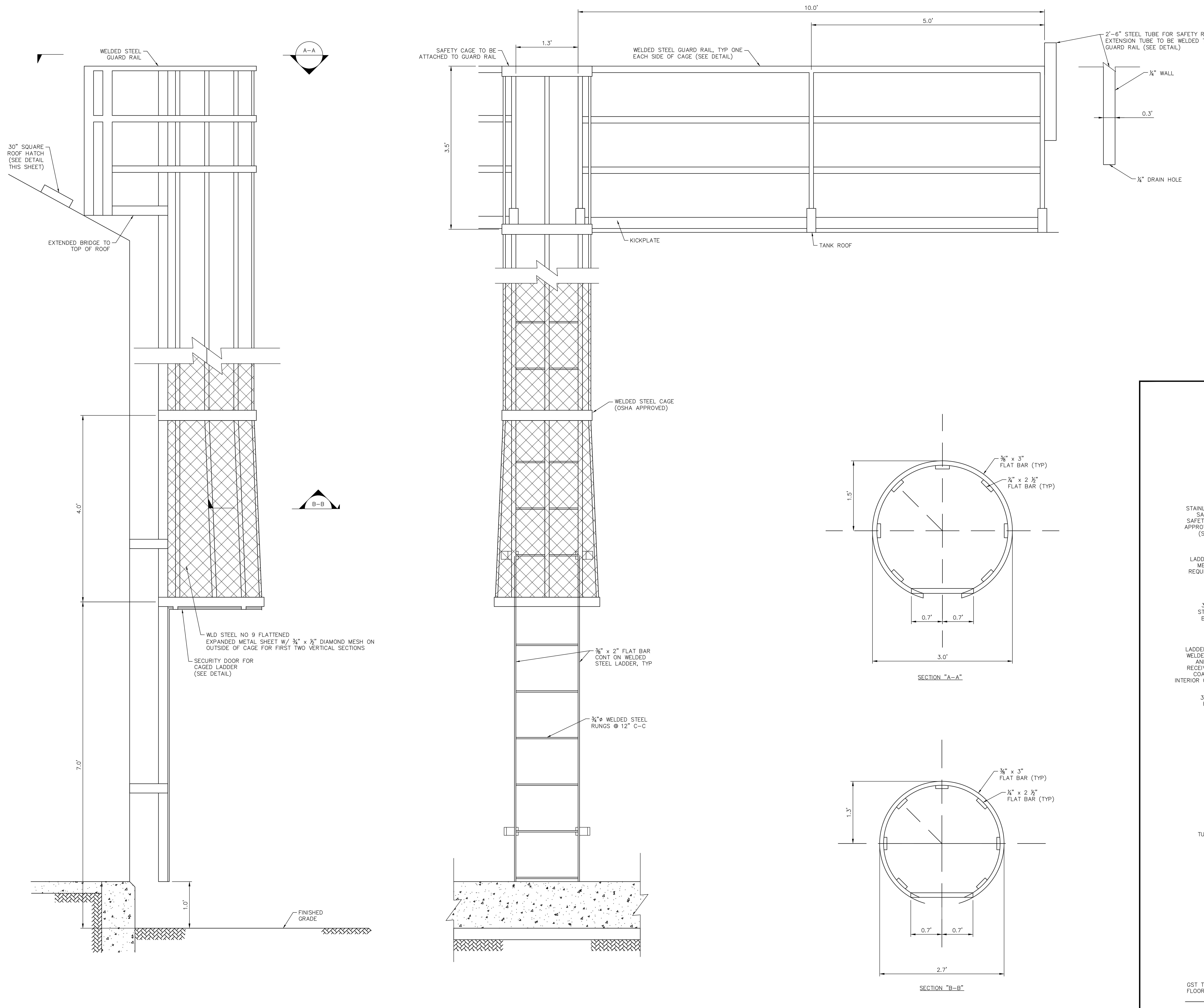
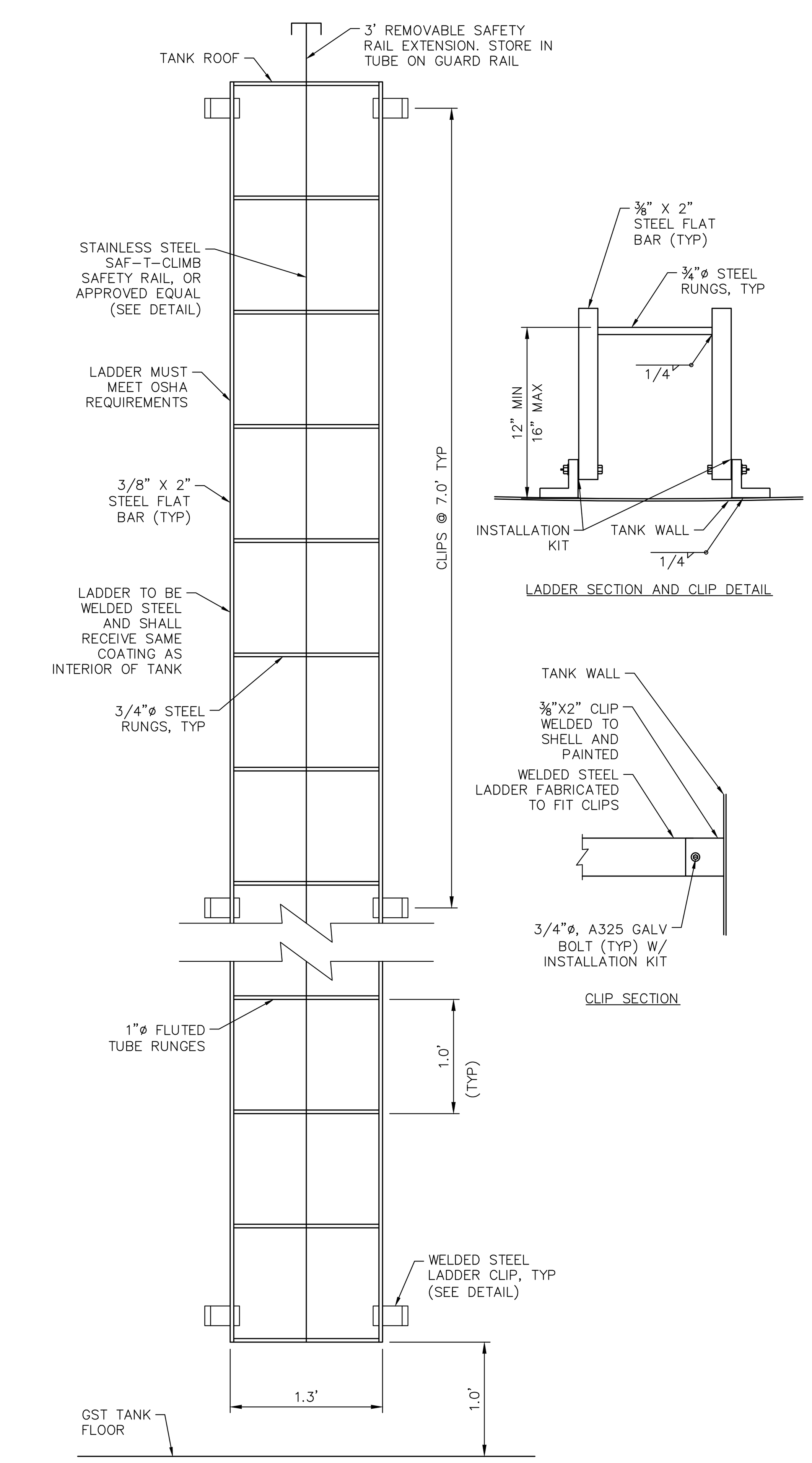


N EXTERIOR LADDER DETAIL

NOT TO SCALE



O INTERIOR LADDER DETAIL

NOT TO SCALE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EFFLUENT STORAGE TANK DETAILS 3 OF 4

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
2-5-2026

14

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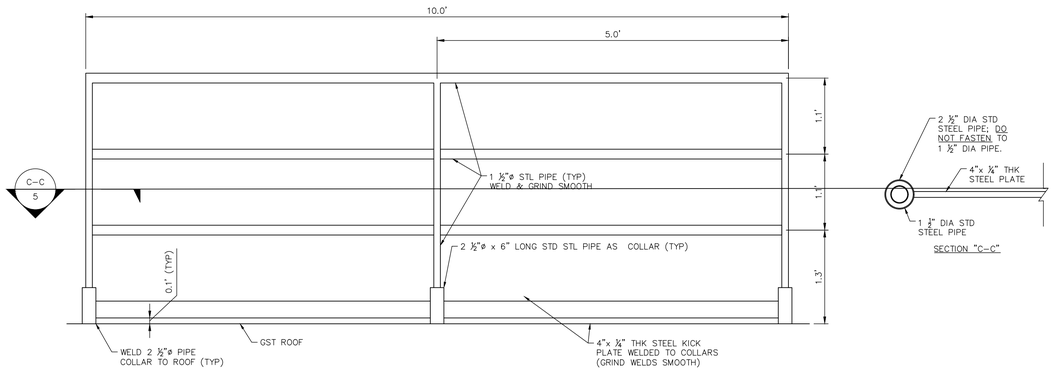
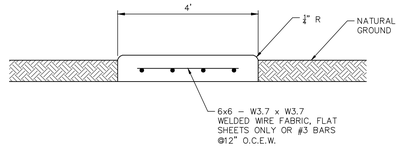


NOTES:
1. PROVIDE 6"x 6"x ¼"" GUSSET PLATE INSIDE TANK TO STIFFEN ROOF PLATES WHERE POSTS ARE WELDED TO ROOF.
2. HANDRAIL TO BE ROLLED TO CURVATURE OF TANK AND SET 1 ¾" BACK FROM EDGE.
3. ALL OPEN PIPE ENDS TO BE WATERTIGHT SEALED WITH ENGINEER APPROVED CAPS.

P TYPICAL GAURD RAIL DETAIL

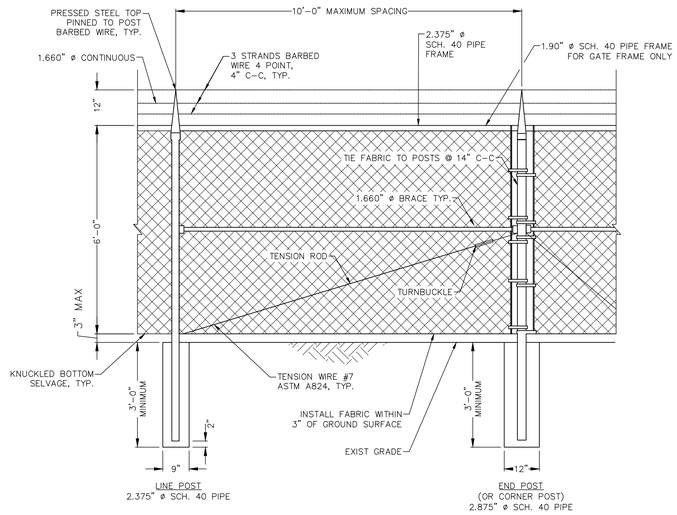
NOT TO SCALE



NOTES:
1. PROVIDE TOOL OR SAW-CUT CONTROL OR CONSTRUCTION JOINT AT EVERY 4'.

Q TYPICAL CONCRETE SIDEWALK DETAIL

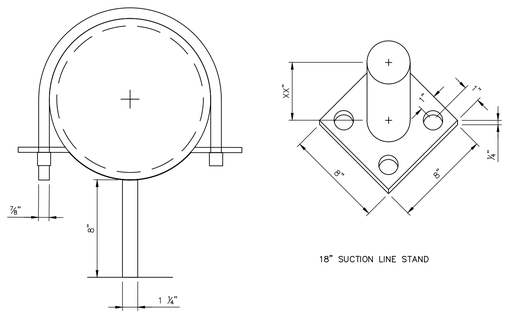
NOT TO SCALE



NOTES:
1. PR. FENCE TO MATCH EX. FENCE. CONTRACTOR TO VERIFY.

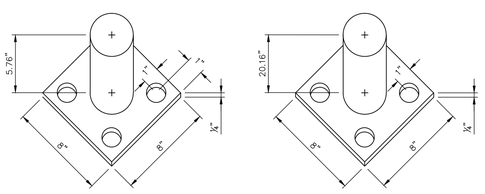
R PROPOSED 6' CHAIN LINK FENCE W/BARBED WIRE DETAIL

NOT TO SCALE



PIPE STANCHION

18" SUCTION LINE STAND



16" DISCHARGF STAND

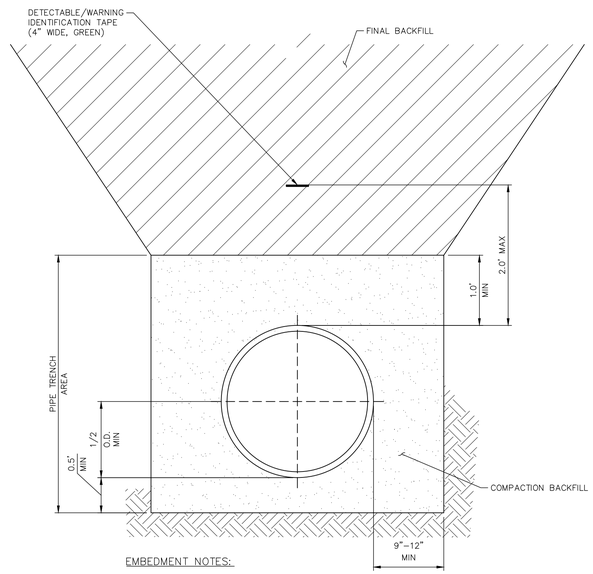
12" PUMP STAND

S PIPE SUPPORT DETAIL

NOT TO SCALE

BACKFILL NOTES:

1. FINAL BACKFILL TO BE SELECT MATERIAL FROM THE TRENCH EXCAVATION.
2. CLAY SOILS USED FOR BACKFILL WITH PLASTICITY INDEX LESS THAN 25 SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% (AT -4% TO +4% OF OPTIMUM MOISTURE) OF STANDARD PROCTOR ASTM D-698

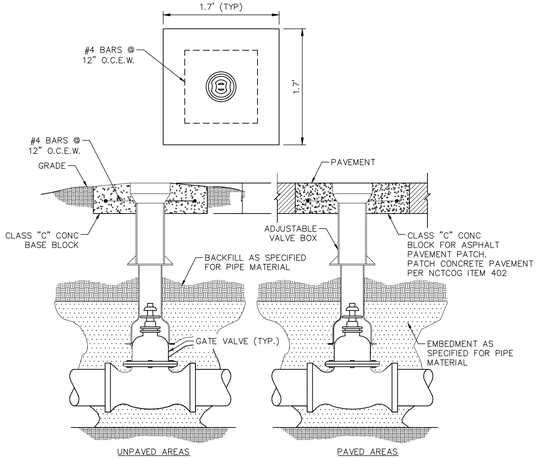


EMBEDMENT NOTES:

1. WHERE THE MAXIMUM TRENCH WIDTH IS EXCEED, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SUITABLE BEDDING THAT WILL ADEQUATELY RESIST THE ADDITIONAL EXTERNAL LOAD, AND THE ADDITIONAL COST SHALL BE BORNE BY THE CONTRACTOR.
2. THE TRENCH WALLS IN THE PIPE ZONE AREA SHALL BE MAINTAINED VERTICAL.

T TRENCH DETAIL AND WASTEWATER PIPE EMBEDMENT DETAIL

NOT TO SCALE



NOTES:

1. THE VALVE AND JOINT ASSEMBLES SHALL BE WRAPPED IN POLYETHYLENE ACCORDING TO AWWA 0105.
2. THE JOINT TYPE SHALL BE MECHANICAL JOINT UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. GATE VALE SHALL BE RESILIENT SEAT TYPE WITH A NON RISING STEM AND A 2-INCH SQUARE OPERATOR. RESILIENT SEAT GATE VALVE SHALL CONFORM TO AWWA 0509.
4. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WITH AN OPERATING NUT LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 18" – 24" OF VALVE BOX LID.
5. 16" AND LARGER GATE VALVES REQUIRE CONCRETE BLOCK UNDER THE VALVE BODY.
6. ALL VALVE COVERS SHALL BE PAINTED GREEN.
7. A "V" SHALL BE SAW CUT IN THE CURB AT ALL VALVE LOCATIONS.
8. ALL VALVE BOX EXTENSIONS SHALL BE DUCTILE IRON.
9. ADJUST VALVE BOX AND COVER TO FINISHED GRADE.
10. CONCRETE COLLAR SHALL BE CONSTRUCTED USING CLASS "A" CONCRETE.
11. VALVE BOX SHALL BE TRAFFIC RATED AND MUST BE SUBMITTED TO ENGINEER FOR APPROVAL.

U GATE VALVE AND BOX DETAIL

NOT TO SCALE

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

EFFLUENT STORAGE TANK DETAILS 4 OF 4

DATE: JAN 2026
DRAFTER: MAW
DESIGNER: AAN
CHECKED: JWV
PROJECT NO. 0052766.04

STATE OF TEXAS
Jacob W. Valentien
124993
LICENSED
PROFESSIONAL ENGINEER
1-15-2026

15

SHEET 15 OF 22

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I. GENERAL

A. ALL FOUNDATION PLAN DIMENSIONS ARE INTERPRETED FROM AND SHALL BE VERIFIED WITH THE FLOOR PLAN AND THE OWNER NOTIFIED IF DISCREPANCIES EXIST.

B. A 10 mil. POLY VAPOR BARRIER SHALL BE PLACED UNDER ALL CONCRETE. TEARS IN THE VAPOR BARRIER SHALL BE REPAIRED.

C. A 4-INCH. LAYER OF BANK SAND MAY BE PLACED UNDER SLABS TO AID WITH FINE GRADING.

D. EXTERIOR BEAMS SHALL BE AS SHOWN EXCEPT DEPTHS SHALL BE INCREASED AS NECESSARY TO PENETRATE A MINIMUM OF 12 INCHES INTO UNDISTURBED SOIL.

E. INTERIOR BEAM LOCATIONS MAY BE SHIFTED NOT MORE THAN SIX INCHES WHERE CONFLICTS WITH PLUMBING LAYOUTS OCCUR.

F. SLAB DROPS WILL REQUIRE THAT THE BEAMS INTERSECTED BY THE DROP BE DEEPENED BY THE DROP AMOUNT WITH TRANSITIONS IN DEPTH OCCURRING OVER A 1 TO 12 SLOPE.

G. BEAM TRENCHES SHALL BE CLEANED OF DEBRIS AND STANDING WATER PRIOR TO CONCRETE PLACEMENT.

II. CONCRETE

A. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39 AND SHALL HAVE AN APPROVED AIR ENTRAINMENT AGENT.

B. WHERE CONCRETE IS PLACED AGAINST FORMS OR SEAL SLABS, REINFORCING BARS SHALL HAVE A MINIMUM OF 2 INCHES CLEAR COVER UNLESS SHOWN OTHERWISE. WHERE CONCRETE IS PLACED AGAINST EARTH, REINFORCING BARS SHALL HAVE A MINIMUM OF 3 INCHES CLEAR COVER.

C. TOOL ALL EXPOSED EDGES UNLESS SHOWN OTHERWISE.

D. APPLY FLOAT FINISH TO SLAB SURFACES TO RECEIVE A TROWEL OR BROOM FINISH.

E. APPLY A TROWEL FLOOR FINISH TO SLAB SURFACES TO BE COVERED WITH A VINYL OR CARPET FINISH.

F. APPLY A LIGHT BROOM FLOOR FINISH TO EXPOSED SLAB SURFACES.

G. EXCEPT WHERE SLAB DROPS OCCUR DEPRESSIONS BETWEEN HIGH SPOTS SHALL NOT BE GREATER THAN 1/8 in. BELOW A 10 ft. LONG STRAIGHTEDGE IN ACCORDANCE WITH ACI 302.

H. CONCRETE FACES SHALL NOT DEVIATE MORE THAN 3/16" FROM THE PLAN DIMENSIONS.

I. ANCHOR BOLTS SHALL BE PLACED AT ALL EXTERIOR SILLS. THE ANCHOR BOLTS SHALL BE ONE-HALF INCH DIAMETER SPACED NOT MORE THAN SIX FOOT CENTER TO CENTER AND EMBEDDED AT LEAST SEVEN INCHES IN CONCRETE. THERE SHALL BE A MIN. OF TWO BOLTS PER SILL.

III. REINFORCING STEEL

A. ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60.

B. DETAILING OF REINFORCING SHALL BE IN ACCORDANCE WITH ACI 315, LATEST EDITION, UNLESS SHOWN OTHERWISE. PLACING OF REINFORCING SHALL BE IN ACCORDANCE WITH C.R.S.I., "RECOMMENDED PRACTICE FOR PLACING OF REINFORCING BARS", LATEST EDITION.

C. BAR LAPS AND SPLICES LENGTH SHALL BE A MIN. OF 30 BAR DIAMETERS.

D. ALL REINFORCEMENT SHALL BE SUPPORTED WITH CHAIRS OR MASONRY BRIQUETTES AT NOT MORE THAN SIX FOOT ON CENTERS.

E. REINFORCING BARS SHALL BE SECURED AT EVERY OTHER INTERSECTION MINIMUM.

F. FOUR CORNER BARS SHALL BE SECURELY TIED TO THE INTERSECTION BEAM BARS AT ALL OUTSIDE CORNERS. THE CORNER BARS SHALL BE #5 BARS WITH 2'-0" LEGS.

G. WHERE SLOPED LOTS REQUIRE DEEPER BEAMS, ADDITIONAL BARS SHALL BE ADDED. BEAMS 3'-0" TO 5'-0" DEEP, TWO NO. 5 BARS SHALL BE ADDED AT MID DEPTH OF BEAM. BEAMS GREATER THAN 5'-0" DEEP THE ENGINEER SHALL BE CONTACTED FOR SPECIAL DESIGN DETAILS.

IV. STRUCTURAL SUBGRADE

A. THE TOTAL AREA OF THE FOUNDATION SHALL HAVE THE EXISTING VEGETATION AND TOP 6" OF TOPSOIL REMOVED AND THE SUBGRADE PROOF ROLLED PRIOR TO PLACEMENT OF 18" STRUCTURAL FILL. AREAS FOUND TO BE SUBSTANDARD SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE OWNER.

B. ALL FILL PLACED UNDER THE FOUNDATION SLAB SHALL HAVE A MAXIMUM PLASTICITY INDEX OF 20 OR LESS. THE MINIMUM PLASTICITY INDEX SHALL BE 8. ALL FILL SHALL BE PLACED IN MAXIMUM LIFT THICKNESS OF SIX INCHES. EACH LIFT SHALL BE COMPACTED TO 95 % OF STANDARD PROCTOR DENSITY (ASTM D-698) AT A MOISTER CONTENT OF -2% TO +2% OF OPTIMUM. EXTEND 4 FT. PAST OUTSIDE FORMS

V. SUBSURFACE SOIL DESIGN PARAMETERS:

1. MINIMUM CLIMATIC RATING - 22
2. MINIMUM BEARING STRENGTH - 4000 psf
3. MAXIMUM PLASTICITY INDEX - 20
4. SUPPORT INDEX - 0.891

Water Ground Storage Tank
Ring Wall Foundation Calculation Sheet

Project: BUSH RANCH- HAYS COUNTY MUD NO.4 - 59'-5" DIA X 16'- 2 1/2"

Given:

D= Centerline diameter of ringwall	59.42	ft =	59 ft -	5.04 in
b= ringwall width	12.0	in		
Bolt Circle Diameter	59.87		59 ft -	10.5 in
Inside Diameter	58.42	ft =	58 ft -	5.04 in
Outside Diameter	60.42	ft =	60 ft -	5.04 in
t= ringwall thickness	36.0	in		
wt= Empty Weight of Tank	60000.0	lbs		
h=tank water height	16.00	ft		
y= allowable soil bearing Capacity(psf)	4000.0	psf		
w= Soil Unit Weight	115.0	pcf		
Ka= Coefficient of Lateral Pressure	0.4			
fc=Strength of Concrete	3000.0	psi		
As= Area of Reinforcing Steel (T&B)	1.32	in^2		
As'= Area of Ties	0.11	in^2		

Solution:

Load on Soil inside of Ringwall	1010 psf	
Precent of Allowable	25.26%	OK
Vertical Load on Ring		
Weight of Tank per foot	320.41 lbs/ft	
Weight of Water per foot	1497.60 lbs/ft	
Total	1818.01 lbs/ft	
Soil Pressure	1818.01 psf	
Precent of Allowable	45.45%	OK
Total Vertical Load	5041 kips	
Vertical Bending Moment on Ring		
Maximum Moment	36263 in-lbs	
Maximum Allowable Moment	2267548 in-lbs	
Precent of Allowable	1.60%	OK
Maximum Shear	18132 lbs	
Maximum Allowable Shear	39042 lbs	
Precent of Allowable	46.44%	OK
Horizonal Load on Ring		
Lateral Pressure at Top of Ring	404.08 psf	
Lateral Pressure at Bottom of Ring	542.08 psf	
Net Horizonal Load on Ring	1419.24 lbs/ft	
Tension in Ring	42,165.62 lbs	
Factored Tension in Ring	67,464.99 lbs	
Allowable Tension in Ring	143,056.80 lbs	
Precent of Allowable	47.16%	OK

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

BUSH RANCH- HAYS COUNTY MUD NO.4

WATER TANK RING FOUNDATION

CONSTRUCTION NOTES

DATE: 12-01-2025
DRAFTER: SAB
DESIGNER: PEM
CHECKED: PEM
PROJECT NO.
0052766.04

STATE OF TEXAS
PAUL E. MALEK
82860
LICENSED
PROFESSIONAL ENGINEER
12/08/2025

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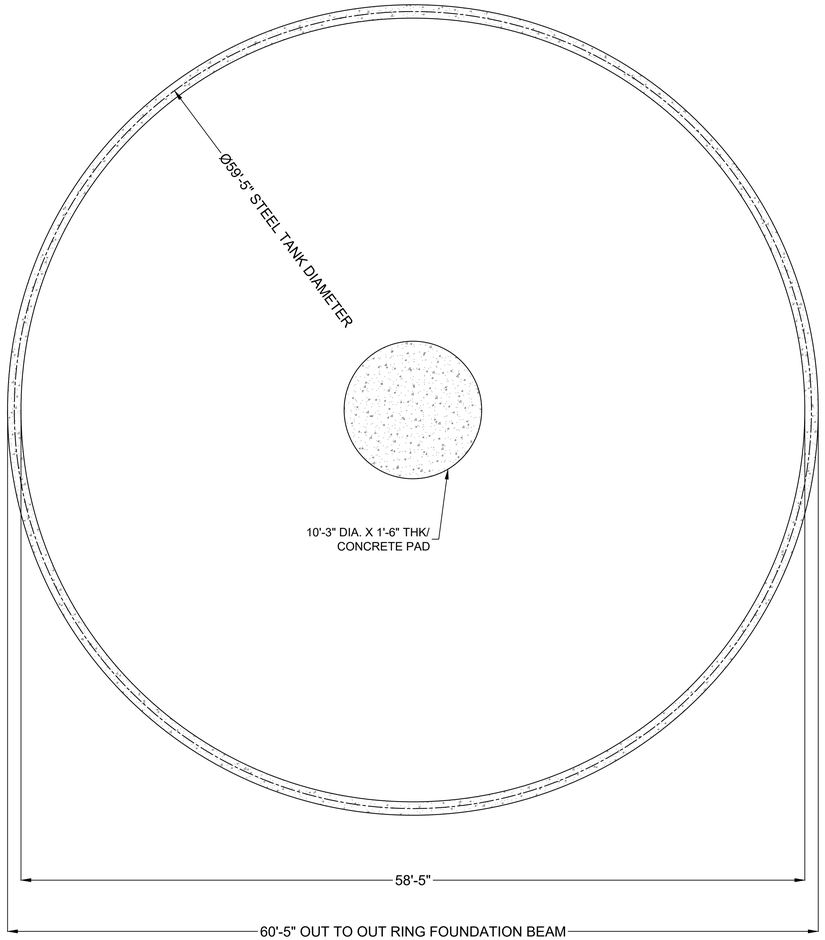
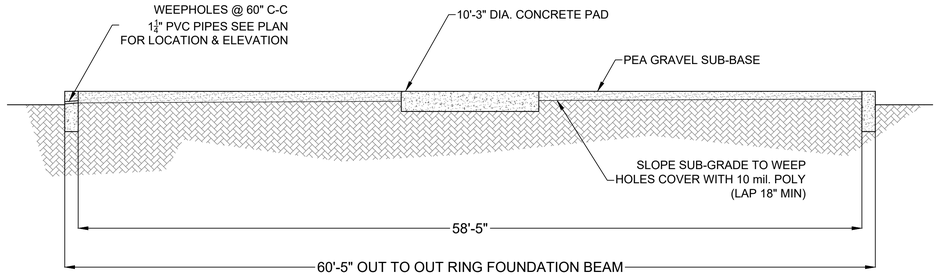
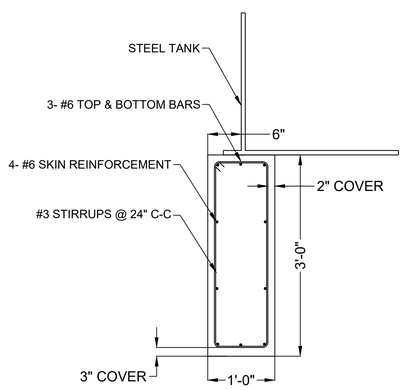


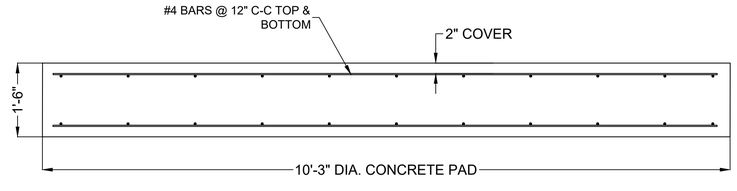
A S1 WATER TANK RING FOUNDATION PLAN
Scale: 3/16" = 1'-0"



B S1 WATER TANK RING FOUNDATION SECTION
Scale: 3/16" = 1'-0"



C S1 WATER TANK RING BEAM REINFORCEMENT DETAILS
Scale: NTS



D S1 WATER TANK CONCRETE PAD REINFORCEMENT DETAILS
Scale: NTS

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NO.	DESCRIPTION	DATE	BY	APP DATE	APP

BUSH RANCH- HAYS COUNTY MUD NO.4

WATER TANK RING FOUNDATION

RING BEAM FOUNDATION PLAN AND SECTION

DATE: 12-01-2025
DRAFTER: SAB
DESIGNER: PEM
CHECKED: PEM
PROJECT NO. 0052766.04

STATE OF TEXAS
PAUL E. MALEK
82860
LICENSED PROFESSIONAL ENGINEER
12/05/2025

S1

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PAUL MALEK, P.E. 82860

ELECTRICAL PLAN LEGEND

SYMBOL	DESCRIPTION
———	ABOVE GROUND CONDUIT
- - - - -	UNDERGROUND CONDUIT
— GND —	GROUND CONDUCTOR
	GROUND WELL
	FLOODLIGHT
$	20A, LIGHT SWITCH IN WEATHER–PROOF FS BOX
CA	SURVEILLANCE CAMERA
FIT	FLOW INDICATING TRANSMITTER
J	JUNCTION BOX
PE	PHOTO ELECTRIC SWITCH
PS	PRESSURE SWITCH
TIT	TEMPERATURE INDICATING TRANSMITTER
WP GFCI	20A, 125V, GFI RECEPTACLE IN WEATHER PROOF WHILE–IN–USE COVER
R	ALARM BEACON
	WEATHERHEAD
XXX–XXX	CONDUIT MARKER (SEE CONDUIT SCHEDULE SHEET E2)

ONE–LINE DIAGRAM LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
100AF 2P 50AT	MOLDED CASE CIRCUIT BREAKER		OILER HEATER WITH THERMOSTAT
	STARTER (SIZE NOTED)	MTS	MOTOR WINDING THERMOSTAT
HP	THREE–PHASE MOTOR (HORSEPOWER NOTED)		POWER FACTOR CORRECTION CAPACITOR
	ELECTRICAL GROUND	M	POWER QUALITY MONITOR
PFR	PHASE FAILURE RELAY	N/G	NEUTRAL/GROUND BOND
		ETM	ELAPSED TIME METER
PS	PRESSURE SWITCH		
OS	OILER SOLENOID	G	INDICATING LIGHT (COLOR AS SHOWN: G=GREEN, R=RED, A=AMBER, B=BLUE, W=WHITE
TIT	TEMPERATURE INDICATING TRANSMITTER	HOA	HAND–OFF–AUTO SWITCH
LS	LOCAL LOCK STOP	OA	OFF–AUTO SWITCH
TS	TEMPERATURE SWITCH		
VS	VIBRATION SWITCH	TD	TIME DELAY RELAY
	FLOW METER	XXX–XXX	CONDUIT MARKER (SEE CONDUIT SCHEDULE SHEET E2)
SPD	SURGE PROTECTIVE DEVICE	▲	ITEM LOCATED ON SCADA PANEL DOOR
	MOTOR SPACE HEATER	■	ITEM LOCATED ON VFD CABINET DOOR
A	SPECIAL DEVICE (SEE SCHEDULE THIS SHEET)	SPD	VARIABLE FREQUENCY DRIVE
SSOL	SOLID STATE OVERLOAD		

CONTROL DIAGRAM LEGEND

SYMBOL	DESCRIPTION
100AF 2P 50AT	MOLDED CASE CIRCUIT BREAKER
	SELECTOR SWITCH
	PUSH BUTTON
CR/TD	CONTROL/ TIME–DELAY RELAY – PLUG IN
CR CR	RELAY CONTACT (NORMALLY OPEN – NORMALLY CLOSED)
TD	TIME–DELAY RELAY CONTACT
M	MOTOR STARTER COIL
OL	MOTOR OVERLOAD
ETM	ELAPSED TIME METER
G	INDICATING LIGHT – LED TYPE – PUSH–TO–TEST (COLOR AS SHOWN: G=GREEN, R=RED, A=AMBER, B=BLUE, W=WHITE
	MOTOR SPACE HEATER
TS	TEMPERATURE SWITCH
FS	FLOAT SWITCH
A	SPECIAL DEVICE (SEE SCHEDULE THIS SHEET)
▲	ITEM LOCATED ON SCADA PANEL DOOR
■	ITEM LOCATED ON VFD CABINET DOOR

SPECIAL DEVICE SCHEDULE

ITEM	DESCRIPTION
CR	CONTROL RELAY – WITH 4 S.P.D.T. SWITCHES RATED 10 AMPS AT 120 VOLT, COIL VOLTAGE AS NEEDED, FLAG AND LED STATUS INDICATORS, REMOVABLE LOCK–DOWN DOOR, COLOR–CODED PUSH–TO–TEST BUTTON, PLUG IN BASE AND SOCKET
PR	INDUCTION RELAY – WARRICK SERIES I, 120 VOLTS, 60 HZ
TD	TIME DELAY RELAY – WITH 2 S.P.D.T. SWITCHES RATED 7 AMPS AT 120 VOLT, CONTACTS AND COIL, PLUG IN BASE AND SOCKET, 5 RANGES, 0.1 TO 100 MIN, ATC MODEL No. 319E–134

ABBREVIATIONS

#PDT – # POLE, DOUBLE THROW; WHERE # IS # OF POLES (S=SINGLE, D=DOUBLE)
A – AMPS OR AMPERES
ASP – AUTOSENSORY PANEL
BC – BARE COPPER
C – CONDUIT
CC – COPPER CLAD
CGB – CABLE GLAND BUSHING
CLR – CLEARANCE
CR – CONTROL RELAY
DTL – DETAIL
ETM – ELAPSED TIME METER
EW – EACH WAY
FG – FINISHED GRADE
FIN – FINISHED (AS IN FINISHED GRADE)
G; GND – GROUND
HDG – HOT DIPPED GALVANIZED
HTR – HEATER
M – MOTOR
MIN – MINIMUM
MLO – MAIN LUGS ONLY
MSH – MOTOR SPACE HEATER
NEMA – NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N; NEU – NEUTRAL
NG – NEUTRAL/GROUND BOND
NTS – NOT TO SCALE
OC – OFF CENTER
OL – OVERLOAD
P – POLES
PFCC – POWER FACTOR CORRECTION CAPACITOR – OSED
PVC – POLYVINYL CHLORIDE
RGS – RIGID GALVANIZED STEEL
SCH – SCHEDULE
SHT – SHEET
SPD – SURGE PROTECTIVE DEVICE
S.S.; STN STL – STAINLESS STEEL
TD – TIME DELAY RELAY
TSP – TWISTED SHIELDED PAIR
TYP – TYPICAL
V – VOLT/VOLTAGE
W/ – WITH
WIU – WHILE IN USE
WP – WEATHERPROOF OR WEATHER PROTECTED
GFCI – GROUND FAULT CIRCUIT INTERRUPTER

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH LOCAL AND NATIONAL CODES AND REQUIREMENTS.
2. CONDUITS SHALL NOT BE ROUTED ACROSS WALKWAYS, PATHS OF ACCESS, TRAVEL, OR EGRESS. ROUTE BENEATH GRATINGS, IN CONCRETE STRUCTURES, OR AROUND EQUIPMENT. DO NOT ROUTE IN CONFLICT WITH OTHER PIPING, CONDUITS, EQUIPMENT, OR STRUCTURES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS ASSOCIATED WITH THE WORK. THE COSTS OF THE PERMITS, IF ANY, SHALL BE BORNE BY THE CONTRACTOR.
4. ALL POWER AND INSTRUMENTATION CONDUCTORS SHALL BE INSTALLED IN SEPARATE CONDUITS.
5. ALL EXTERIOR ABOVE GRADE CONDUIT SHALL BE PVC COATED RIGID ALUMINUM. ALL INTERIOR CONDUITS WITHIN THE CHEMICAL ROOM SHALL BE SCH 40 PVC; ALL REMAINING INTERIOR CONDUIT SHALL BE RIGID GALVANIZED STEEL OR RIGID ALUMINUM. ALL MOUNTING HARDWARE SHALL BE GALVANIZED STEEL.

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

DATE: DECEMBER 2025
DRAFTER: CC
DESIGNER: CLB
CHECKED: JAD
PROJECT NO. 0052766.04

STATE OF TEXAS
JON–PAUL A. DIXON
112808
LICENSED PROFESSIONAL ENGINEER

E1

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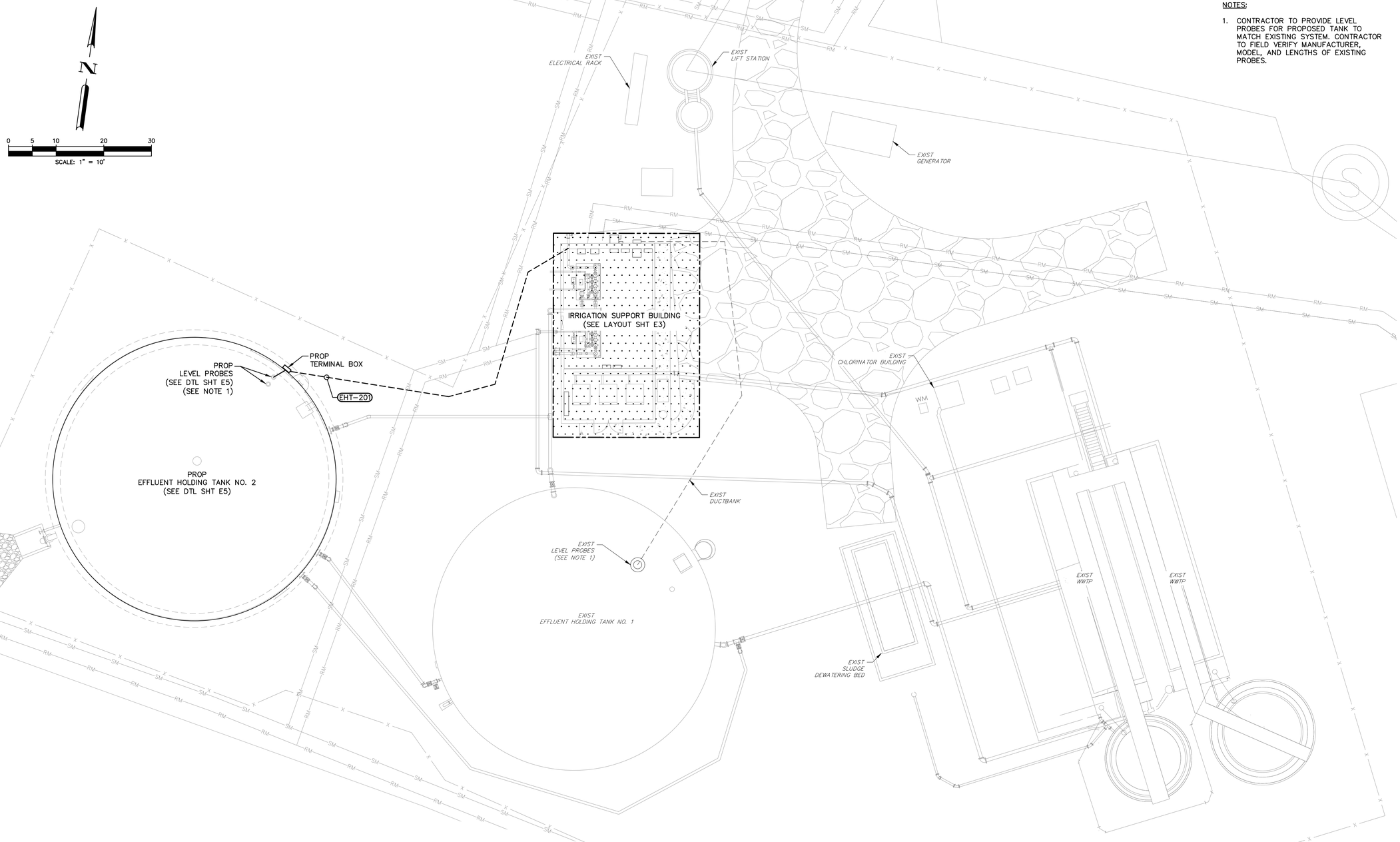


NOTES:

1. CONTRACTOR TO PROVIDE LEVEL PROBES FOR PROPOSED TANK TO MATCH EXISTING SYSTEM. CONTRACTOR TO FIELD VERIFY MANUFACTURER, MODEL, AND LENGTHS OF EXISTING PROBES.

ELECTRICAL SITE PLAN
SCALE 1"=10'

CONDUIT SCHEDULE

NO.	SIZE & CONDUCTORS	FROM	TO	HP	DESCRIPTION
EHT-201	1" C, W/10-#16 + #16 GND	EFFLUENT HOLDING TANK NO. 2	DRIP CONTROL PANEL		STATUS AND ALARMS

BAIRD GILROY & DIXON ELECTRICAL ENGINEERS
9711 S. Mason Rd.
Ste. 125 #326
Richmond, TX 77407
(281) 900-2000
www.bgdeng.com
TBPE No. F-16575
Job No. 194-0027

Westwood
Westwood Professional Services, Inc.
8701 NORTH MOPAC EXPY, SUITE 320
AUSTIN, TX 78759
T: 512.485.0831
F: 888.937.5150
TBPELS ENGINEERING FIRM NO. 11756
TBPELS SURVEYING FIRM NO. 10074301
westwoodps.com

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

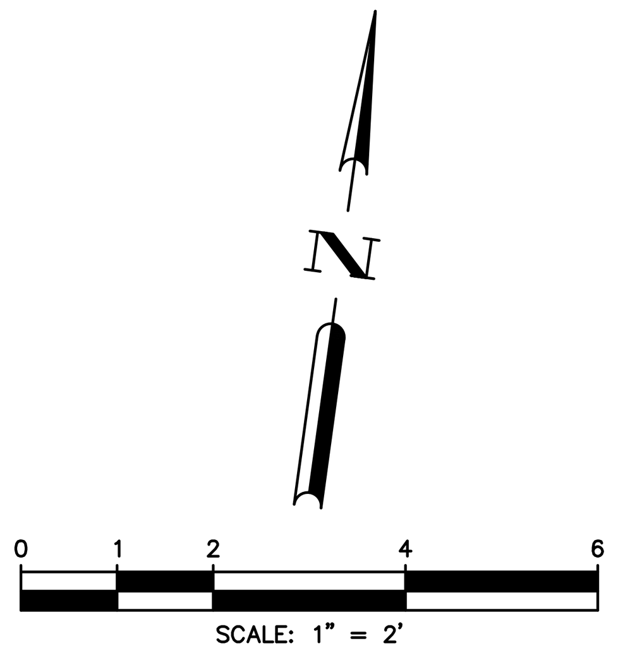
ELECTRICAL SITE PLAN

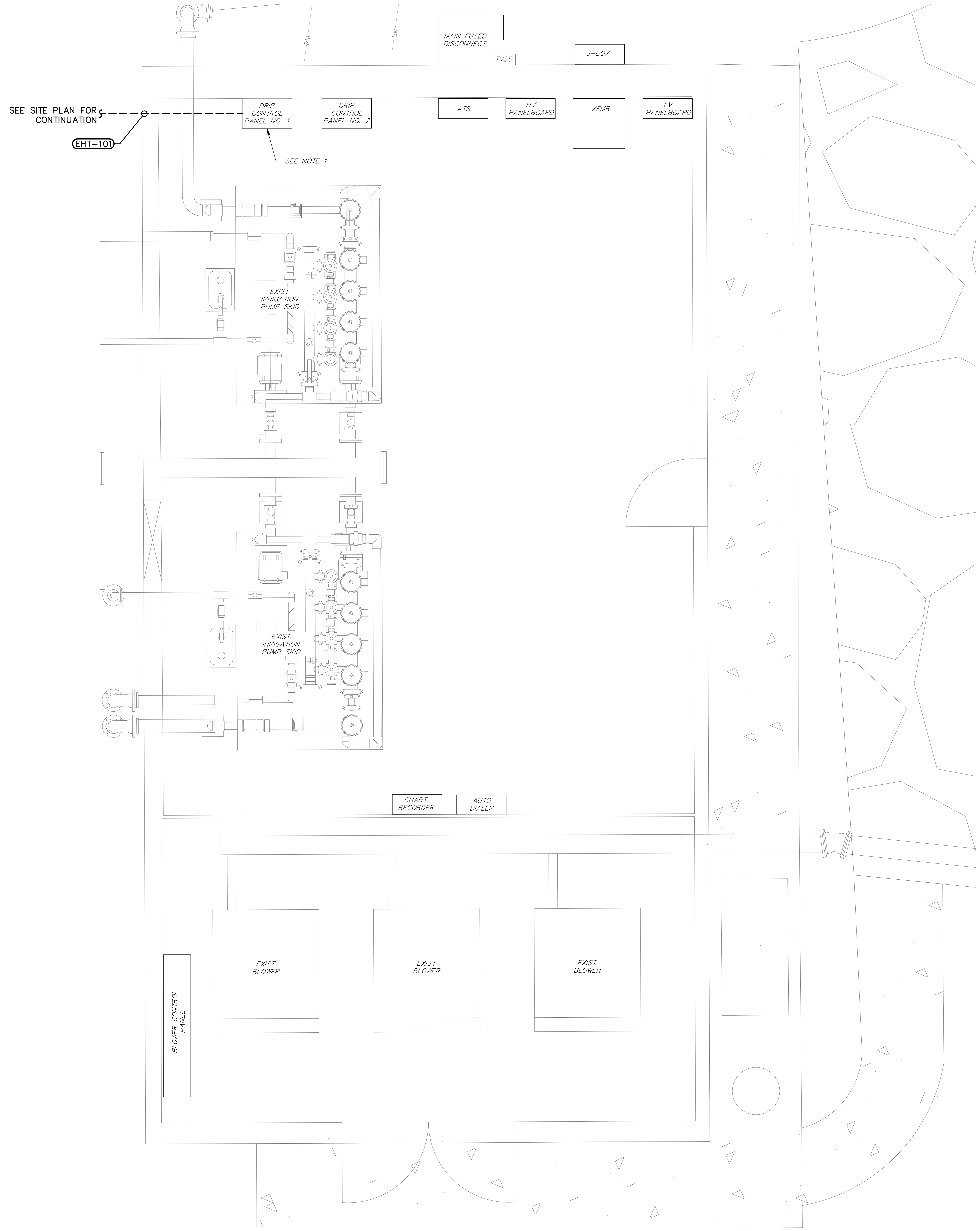
DATE: DECEMBER 2025
DRAFTER: CC
DESIGNER: CLB
CHECKED: JAD
PROJECT NO. 0052766.04

STATE OF TEXAS
JON-PAUL A. DIXON
112808
LICENSED PROFESSIONAL ENGINEER

E2

Last Saved by: CharlesBryant
Last Saved: 12/22/2025 4:41 PM
Plotted by: CharlesBryant 12/22/2025 4:42 PM
Drawing: P:\Projects\194-Westwood\PS\0027-Hays County MUD No. 4 Effluent Storage Tank Expansion\03 CAD\194-0027 Elec





BUILDING LAYOUT
SCALE 1"=2'

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONTROLS CONFIGURATION AND CONNECT TANK NO.2 AS NEEDED.

BAIRD GILROY & DIXON
ELECTRICAL ENGINEERS
9711 S. Mason Rd.
Ste. 125 #326
Richmond, TX 77407
(281) 529-5005
www.bgdeng.com
TBPE No. F-16575
Job No. 194-0027

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AUSTIN, TX 78759
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F: 888.937.5150
TBPELS ENGINEERING FIRM NO. 11756
TBPELS SURVEYING FIRM NO. 10074301
westwoodps.com

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4
WWTP EFFLUENT STORAGE TANK ADDITION
ELECTRICAL BUILDING LAYOUT

DATE: DECEMBER 2025
DRAFTER: CC
DESIGNER: CLB
CHECKED: JAD
PROJECT NO.
0052766.04

STATE OF TEXAS
JON-PAUL A. DIXON
112808
LICENSED
PROFESSIONAL ENGINEER

E3

Last Saved by: CharlesBryant
Last Saved: 12/22/2025 4:41 PM
Plot Date/Time: 12/22/2025 4:42 PM
Drawing: P:\Projects\194-WestwoodPS\0027-Hays County MUD No. 4 Effluent Storage Tank Expansion\03 CAD\194-0027 Elec

LEVEL PROBE DIAGRAM
NOT TO SCALE

BAIRD GILROY & DIXON ELECTRICAL ENGINEERS
9711 S. Mason Rd.
Ste. 125 #326
Richmond, TX 77407
(281) 935-2000
www.bgdeng.com
TBPE No. F-16575
Job No. 194-0027

Westwood
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8701 NORTH MOPAC EXPY, SUITE 320
AUSTIN, TX 78759
T: 512.485.0831
F: 888.937.5150
TBPELS ENGINEERING FIRM NO. 11756
TBPELS SURVEYING FIRM NO. 10074301
westwoodps.com

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4

WWTP EFFLUENT STORAGE TANK ADDITION

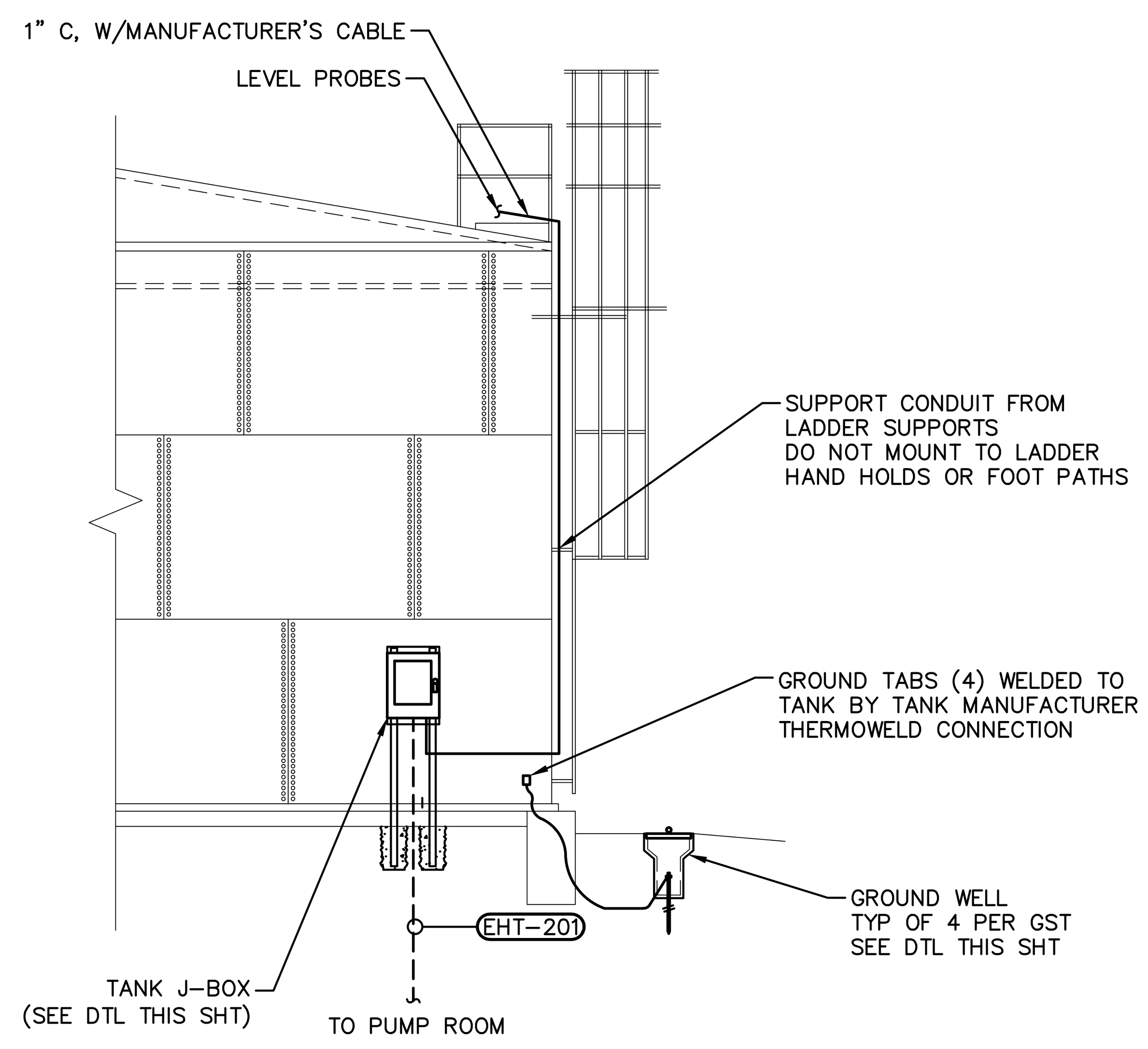
ELECTRICAL CONTROLS DIAGRAM

DATE: DECEMBER 2025
DRAFTER: CC
DESIGNER: CLB
CHECKED: JAD
PROJECT NO.
0052766.04

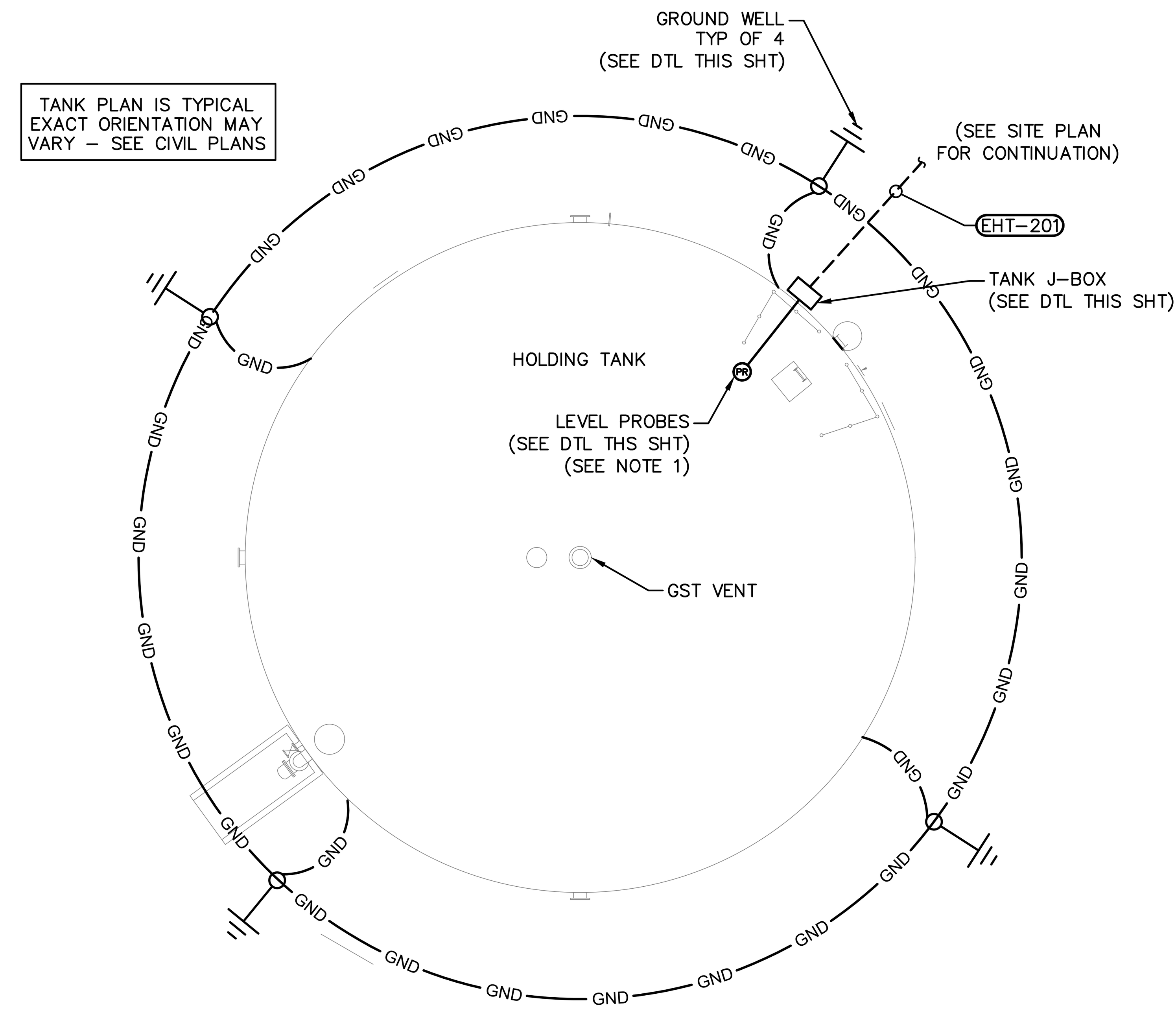
STATE OF TEXAS
JON-PAUL A. DIXON
112808
LICENSED PROFESSIONAL ENGINEER

E4

Last Saved by: CharlesBryant
Last Saved: 12/22/2025 1:43 PM
Plot Date/Time: 12/22/2025 1:44 PM
Drawing: P:\Projects\194-Westwood\PS\0027-Hays County MUD No. 4 Effluent Storage Tank Expansion\03 CAD\194-0027 Controls



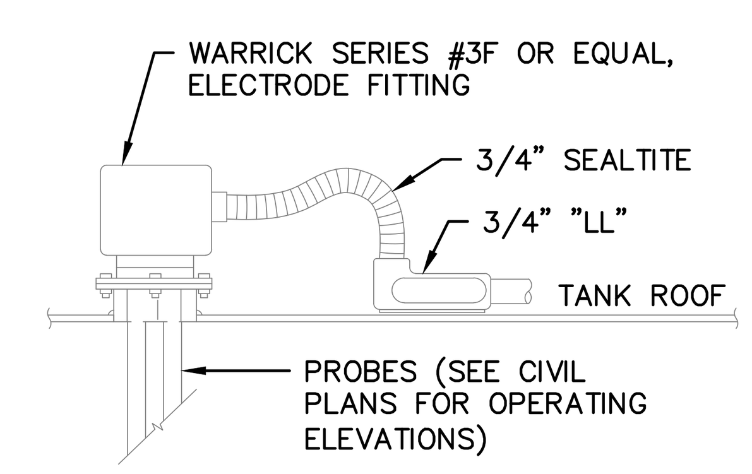
HOLDING TANK DETAIL
NOT TO SCALE



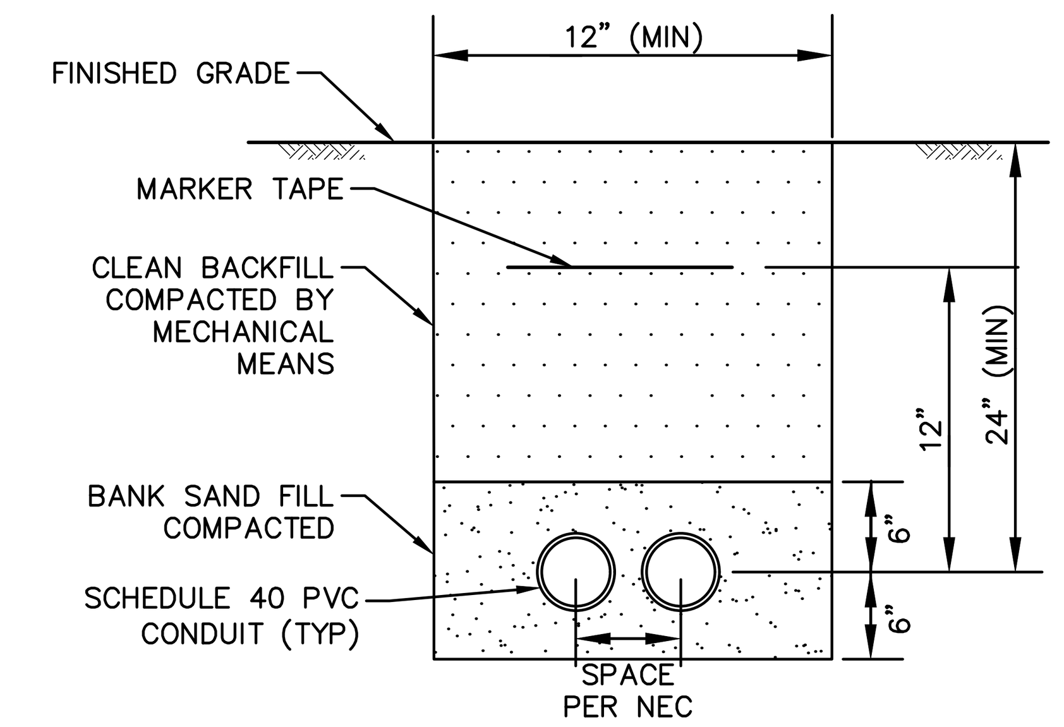
NOTES:

1. COORDINATE EXACT LOCATION OF LEVEL INSTRUMENTATION WITH TANK MANUFACTURER. COORDINATE FLANGE TYPE AND SIZES ACCORDINGLY WITH THE EQUIPMENT PROVIDED.

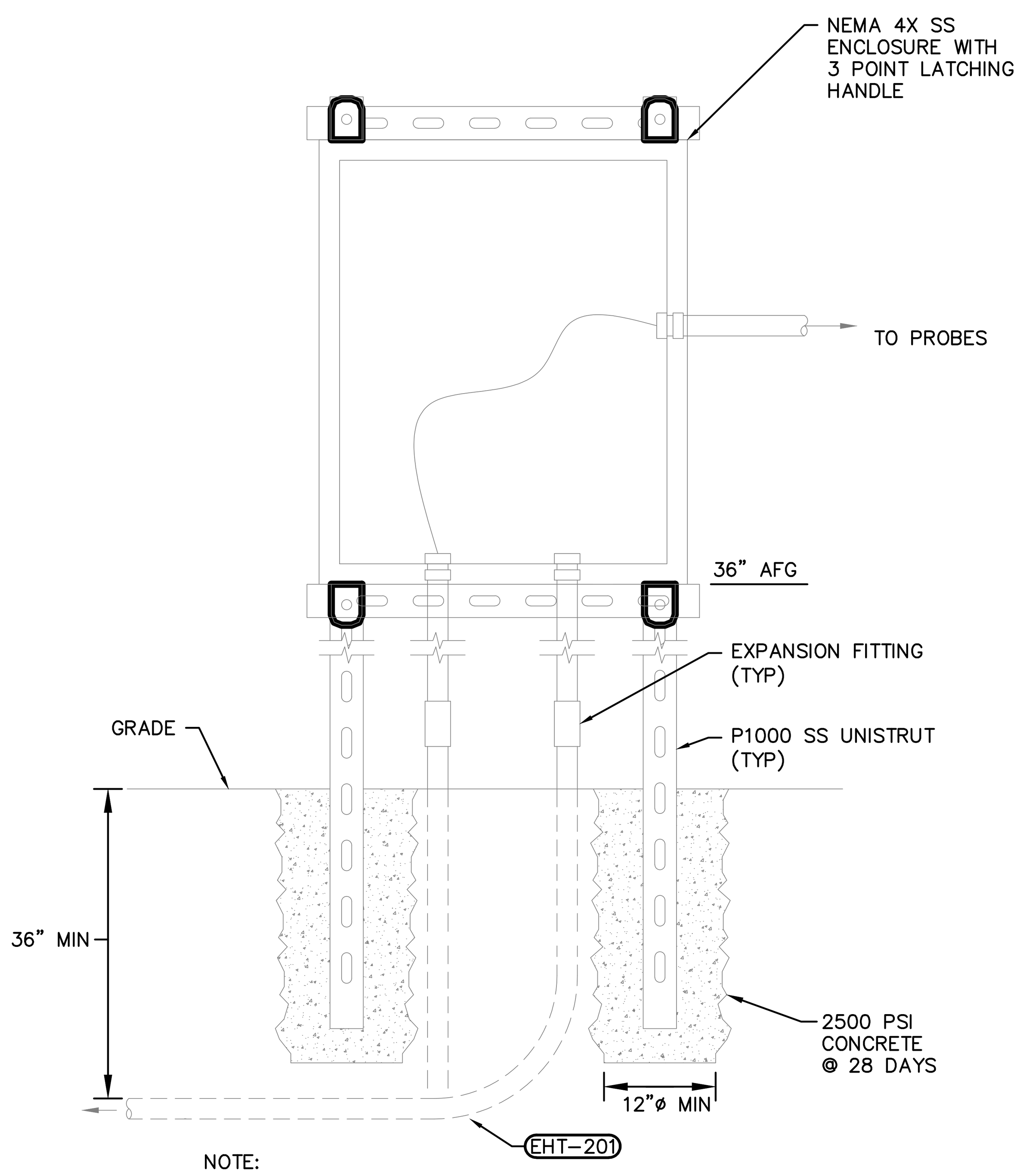
HOLDING TANK PLAN DETAIL
NOT TO SCALE
(TYP)



LEVEL PROBE DETAIL
NOT TO SCALE



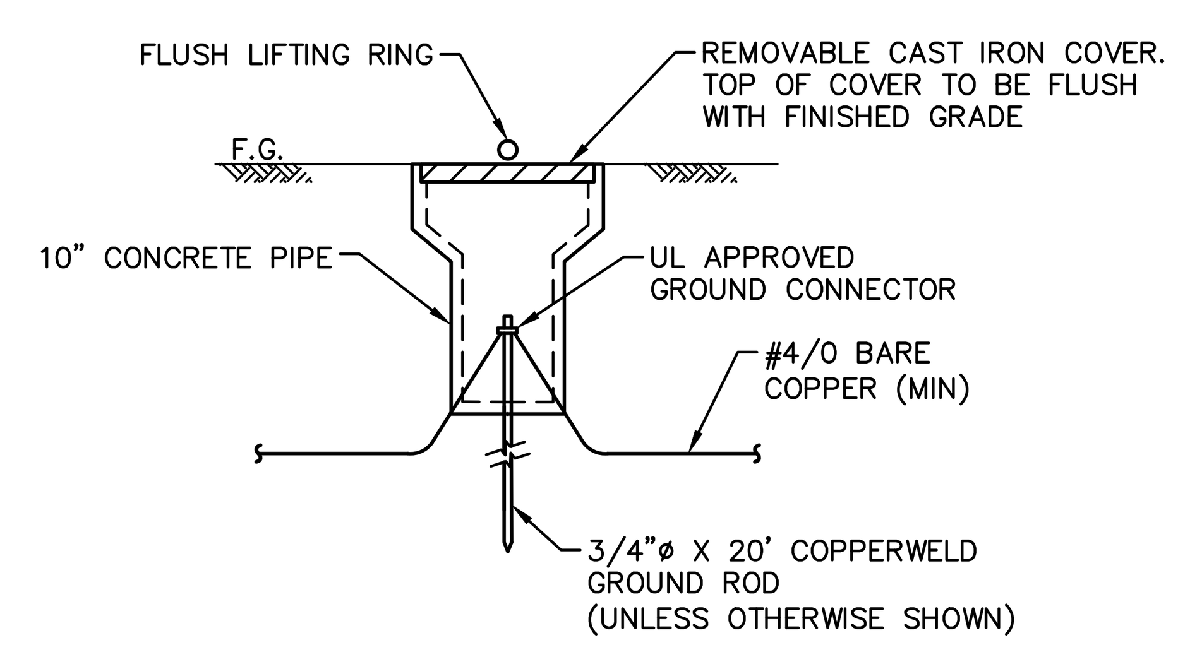
UNDERGROUND CONDUIT CONSTRUCTION
NOT TO SCALE



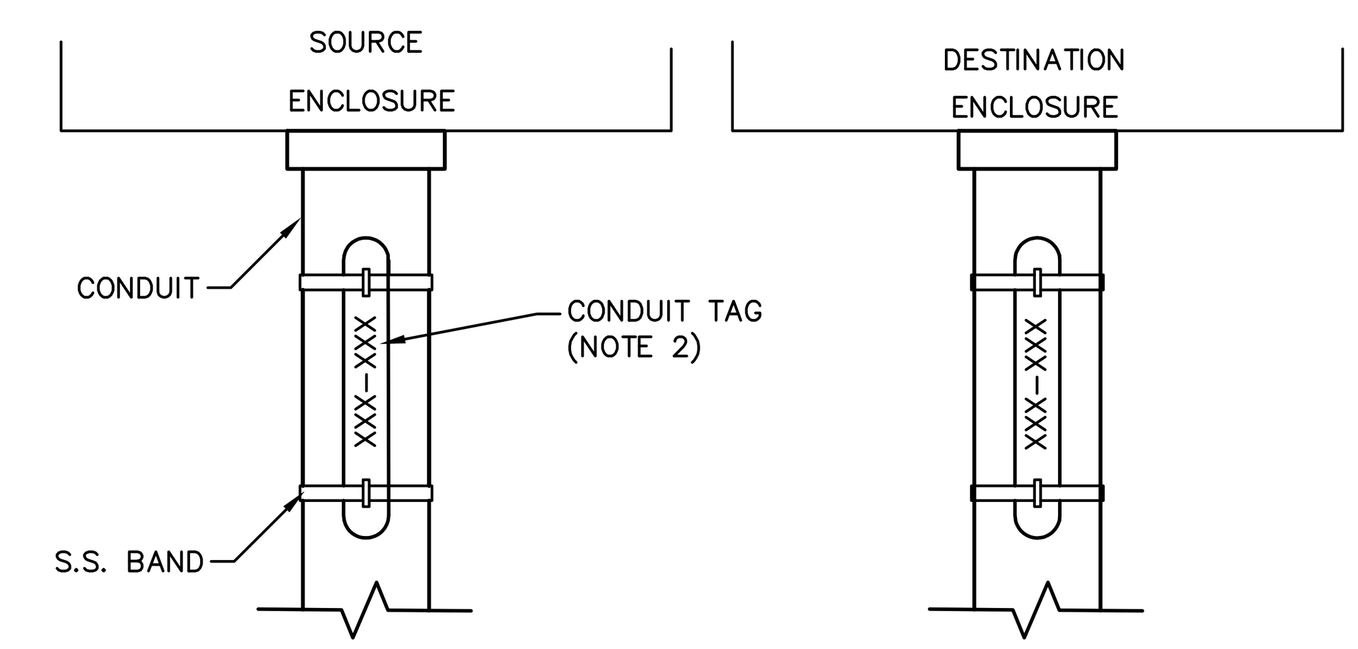
NOTE:

1. SHOWN WITH DOOR REMOVED FOR CLARITY.

TANK J-BOX DETAIL
NOT TO SCALE



GROUND WELL DETAIL
NOT TO SCALE



NOTES

1. ALL POWER, INSTRUMENTATION, AND CONTROL CONDUITS SHALL HAVE STAINLESS STEEL IDENTIFICATION TAGS. ALL EXPOSED CONDUITS INSTALLED SHALL HAVE TAGS ATTACH AT THE SOURCE AND DESIGNATION.
2. CONDUIT TAGS SHALL BE S.S. WITH THE TAG NUMBER ENGRAVED OR EMBOSSED PERMANENTLY INTO THE TAG. TAGS SHALL BE SECURED WITH S.S STRAPS AS SHOWN.
3. PROVIDE PANDUIT MMP OR APPROVED EQUAL.

CONDUIT TAG DETAIL
NOT TO SCALE

BAIRD GILROY & DIXON ELECTRICAL ENGINEERS
9711 S. Mason Rd. Ste. 125 #326 Richmond, TX 77407 (281) 529-5005 www.bgdeng.com TBPE No. F-16575 Job No. 194-0027

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NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

HAYS COUNTY MUD NO. 4
WWTP EFFLUENT STORAGE TANK ADDITION
ELECTRICAL DETAILS

DATE: DECEMBER 2025
DRAFTER: CC
DESIGNER: CLB
CHECKED: JAD
PROJECT NO. 0052766.04

STATE OF TEXAS JON-PAUL A. DIXON 112808 LICENSED PROFESSIONAL ENGINEER

E5

ATTACHMENT G

ORIGINAL APPROVED CZP

EAPP NO. 05112102

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 24, 2006

Mr. Mike Schoenfeld
290 East Bush Inc.
1300 Highway 290 West
Austin, Texas 78737

Re: Edwards Aquifer, Hays County
NAME OF PROJECT: Ledge Stone Subdivision Phase 1; North Side of Highway 290 Approximately 0.5 mile West of CR 163; Dripping Springs, Texas
TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer
Edwards Aquifer Protection Program File No. 05112102

Dear Mr. Schoenfeld:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP application for the referenced project submitted to the Austin Regional Office by CMA Engineering, Inc. on behalf of 290 East Bush, Inc. on November 21, 2005. Final review of the CZP submittal was completed after additional material was received on February 3, February 22, March 9, and March 21, 2006. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) 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 Contributing Zone 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% of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed residential subdivision project will be located on 108.53 acres and will consist of the construction of approximately 236 single family residences, associated roads and sidewalks, a wastewater treatment plant, a subsurface drip irrigation system, two extended detention water quality ponds, and a grassy swale. The proposed impervious cover for the development is approximately 24.26 acres (22.4%of the total area of the site).

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, two extended detention ponds and a grassy swale will be constructed. The individual treatment components will consist of the west pond system which has a total volume of 6.55 acre feet and the north pond system which has a total volume of 8.13 acre feet. A 415.5 feet long grassy swale with a top width of 6.67 feet and a bottom width of 2.0 feet is also proposed. The approved measures meet the required 80 percent removal of the increased load in total suspended solids caused by the project.

SPECIAL CONDITION

Intentional discharges of sediment laden stormwater during construction are not allowed. If dewatering excavated areas and/or areas of accumulated stormwater becomes necessary, the discharge shall be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.

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.

Prior to Commencement of Construction:

2. 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 Contributing Zone Plan and this notice of approval shall be maintained at the project until all regulated activities are completed.

3. 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.

4. The applicant must provide written notification of intent to commence construction 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 name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.

5. 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:

6. During the course of regulated activities related to this project, the applicant or his 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.

7. 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).

8. 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.

9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

10. 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.

11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is

transferred to the entity. 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.

12. 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.

13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% 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.

14. 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.

If you have any questions or require additional information, please contact Terry Webb of the Edwards Aquifer Protection Program of the Austin Regional Office at (512)339-2929.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/tmw

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

cc: Mr. Felix J. Manka, P. E., CMA Engineering, Inc.
The Honorable Jim Powers, County Judge, Hays County
Mr. Allen G. Walther, Director of Environmental Health, Hays County Environmental Health Dept.
Ms. Michelle Fisher, City Administrator, City of Dripping Springs
Ms. Beckie J. Morris, General Manager, Hays Trinity Groundwater Conservation District
TCEQ Central Records, Austin, Texas

TCEQ

Protecting Texas by Reducing and Preventing Pollution

FAX TRANSMITTAL

DATE: **03/24/2006** NUMBER OF PAGES *(including this cover sheet):* **5**

TO:
Name **Jacy Warwick**
Organization **CMA Engineering, Inc.**
FAX Number **512-894-3225**

FROM: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Name **Terry Webb**
Division/Region **Water Section/Region 11**
Telephone Number **(512)339-2929**
FAX Number **(512)339-3795**

NOTES:

Jacy,

Here is the approval letter for the Ledge Stone Subdivision Phase 1. The original should go be in the mail on Monday. Thank you.

Terry

PAY TO THE ORDER
OF STATE COMPTROLLER
TCEQ

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Program
Contributing Zone Fee Application Form 613915 NO 2205

NAME OF PROPOSED REGULATED ENTITY: Ledge Stone Subdivision
REGULATED ENTITY LOCATION: 13000 West Highway 290, Hays County, Texas
NAME OF CUSTOMER: 194 Bush, Ltd.
CONTACT PERSON: Felix J. Manka, P.E. PHONE: 512-894-3230
(Please Print)

Customer Reference Number (if issued): CN 601457716 (nine digits)
Regulated Entity Reference Number (if issued): RN _____ (nine digits)

AUSTIN REGIONAL OFFICE (3373)

(Hays)
Travis
Williamson

SAN ANTONIO REGIONAL OFFICE (3362)

Bexar
Comal
Kinney
Medina
Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. YOUR CANCELED CHECK WILL SERVE AS YOUR RECEIPT. **THIS FORM MUST BE SUBMITTED WITH YOUR FEE PAYMENT. THIS PAYMENT IS BEING SUBMITTED TO (CHECK ONE):**

SAN ANTONIO REGIONAL OFFICE

Mailed to TNRCC:
TNRCC - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

(AUSTIN REGIONAL OFFICE)

Overnight Delivery to TNRCC:
TNRCC - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Check one:

(Contributing Zone Plan - Fee Due $250)

Modification of a Previously Approved Contributing Zone Plan - Fee Due $250

Extension of Time Request - Fee Due $100

Felix J. Manka
Signature

11/18/5
Date

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Program
Contributing Zone Fee Application Form

NAME OF PROPOSED REGULATED ENTITY: Ledge Stone Subdivision
REGULATED ENTITY LOCATION: 13000 West Highway 290, Hays County, Texas
NAME OF CUSTOMER: 194 Bush, Ltd.
CONTACT PERSON: Felix J. Manka, P.E. PHONE: 512-894-3230
(Please Print)

Customer Reference Number (if issued): CN 601457716 (nine digits)
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(Hays)
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Bexar
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TNRCC - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Check one:

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Extension of Time Request - Fee Due $100

Felix J. Manka
Signature

11/18/15
Date

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TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*
New Contributing Zone Permit

2. Attachments ☑ Yes ☐ No

Describe Any Attachments: *(ex: Title V Application, Waste Transporter Application, etc.)*
CZP Application, TCEQ-10258, Construction Plans, TCEQ-20022

3. Customer Reference Number-*if issued*
CN 601457716 *(9 digits)*

4. Regulated Entity Reference Number-*if issued*
RN *(9 digits)*

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following: ☑ Owner ☐ Operator ☐ Owner and Operator
☐ Occupational Licensee ☐ Volunteer Cleanup Applicant ☐ Other: _____

TCEQ Use Only ☐ Superfund ☐ PST ☐ Respondent

6. General Customer Information
☐ New Customer ☐ Change to Customer Information ☐ Change in Regulated Entity Ownership ☑ No Change*
*If "No Change" and Section I is complete, skip to Section III - Regulated Entity Information.

7. Type of Customer: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation
☐ Federal Government ☐ State Government ☐ County Government ☐ City Government
☐ Other Government _____ ☐ Other _____

8. Customer Name *(If an individual, please print last name first)* *If new name, enter previous name:*

9. Mailing Address: _____

City	State	ZIP	ZIP + 4

10. Country Mailing Information *if outside USA*

11. E-Mail Address *if applicable*

12. Telephone Number ( ) -

13. Extension or Code

14. Fax Number *if applicable* ( ) -

15. Federal Tax ID *(9 digits)*

16. State Franchise Tax ID Number *if applicable*

17. DUNS Number *if applicable (9 digits)*

18. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

19. Independently Owned and Operated?
☐ YES ☐ NO

SECTION III: Regulated Entity Information

20. General Regulated Entity Information
☑ New Regulated Entity ☐ Change to Regulated Entity Information ☐ No Change*
*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*
Ledge Stone Subdivision Phase 1

22. Street Address: ~~13000 West Highway 290~~				
(No P.O. Boxes)				
	City ~~Austin~~	State ~~TX~~	ZIP ~~78737~~	ZIP + 4
23. Mailing Address ~~13000 West Highway 290~~				
	City ~~Austin~~	State ~~TX~~	ZIP ~~78737~~	ZIP + 4

24. E-Mail Address:

25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*
~~(512) 394 - 9605~~		~~(512) 394 - 9500~~

28. Primary SIC Code *(4 digits)*	29. Secondary SIC Code *(4 digits)*	30. Primary NAICS Code *(5 or 6 digits)*	31. Secondary NAICS Code *(5 or 6 digits)*
6552		236115	

32. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*
LOW DENSITY, SINGLE FAMILY FAMILY RESIDENTIAL SUBDIVISION

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County: **HAYS**

34. Description of Physical Location
~~The proposed project is located on the South~~ N side of US Highway 290 approximately 0.5 miles ~~west~~ W of ~~County~~ Road 163 ~~(Nutty Brown Road) in Hays County~~.

35. Nearest City	State	Nearest ZIP
Dripping Springs	TX	78620

36. Latitude (N)			37. Longitude (W)		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	12	07	97	59	03

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "unknown."*

☐ Animal Feeding Operation	☐ Petroleum Storage Tank	☐ Water Rights
☐ Title V – Air	☐ Wastewater Permit	☒ Edwards Aquifer
☐ Industrial & Hazardous Waste	☐ Water Districts	☐
☐ Municipal Solid Waste	☐ Water Utilities	☐ Unknown
☐ New Source Review - Air	☐ Licensing - TYPE(s)	

SECTION IV: Preparer Information

39. Name	40. Title
Felix J. Manka	Principal

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
(512) 894 - 3230		(512) 894 - 3225

44. E-Mail Address: **fmanka@cma-engineering.com**

TCEQ Core Data Form

TCEQ Use Only
3/8/06

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Describe Any Attachments: *(ex: Title V Application, Waste Transporter Application, etc.)*
CZP Application, TCEQ-10258, Construction Plans, TCEQ-20022

3. Customer Reference Number-*if issued*
CN [redacted] 602991929 *(9 digits)*

4. Regulated Entity Reference Number-*if issued*
RN 104798640 *(9 digits)*

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following: ☑ Owner ☐ Operator ☐ Owner and Operator
☐ Occupational Licensee ☐ Volunteer Cleanup Applicant ☐ Other: _____

TCEQ Use Only ☐ Superfund ☐ PST ☐ Respondent

6. General Customer Information
☐ New Customer ☐ Change to Customer Information ☐ Change in Regulated Entity Ownership ☑ No Change*
*If "No Change" and Section I is complete, skip to Section III - Regulated Entity Information.

7. Type of Customer: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation
☐ Federal Government ☐ State Government ☐ County Government ☐ City Government
☐ Other Government _____ ☐ Other _____

8. Customer Name *(If an individual, please print last name first)* *If new name, enter previous name:*
290 East Bush Inc,

9. Mailing Address: 13000 Highway 290 W

City	State	ZIP	ZIP + 4
Austin	TX	78737	9339

10. Country Mailing Information *if outside USA*

11. E-Mail Address *if applicable*

12. Telephone Number ( ) -

13. Extension or Code

14. Fax Number *if applicable* ( ) -

15. Federal Tax ID *(9 digits)*

16. State Franchise Tax ID Number *if applicable*

17. DUNS Number *if applicable (9 digits)*

18. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

19. Independently Owned and Operated?
☐ YES ☐ NO

SECTION III: Regulated Entity Information

20. General Regulated Entity Information
☑ New Regulated Entity ☐ Change to Regulated Entity Information ☐ No Change*
*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*
Ledge Stone Subdivision Phase 1

22. Street Address: (No P.O. Boxes)	13000 West Highway 290			
	City: Austin	State: TX	ZIP: 78737	ZIP + 4:
23. Mailing Address	13000 West Highway 290			
	City: Austin	State: TX	ZIP: 78737	ZIP + 4:

24. E-Mail Address:

25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*
(512) 394 - 0635		(512) 394 - 0590

28. Primary SIC Code *(4 digits)*	29. Secondary SIC Code *(4 digits)*	30. Primary NAICS Code *(5 or 6 digits)*	31. Secondary NAICS Code *(5 or 6 digits)*
6552		236115	

32. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*
LOW DENSITY, SINGLE FAMILY FAMILY RESIDENTIAL SUBDIVISION

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County: HAYS

34. Description of Physical Location
The proposed project is located on the north side of US Highway 290 approximately 0.5 miles west of County Road 163 (Nutty Brown Road) in Hays County.

35. Nearest City	State	Nearest ZIP
Dripping Springs	TX	78620

36. Latitude (N)			37. Longitude (W)		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	12	7	97	59	3

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "unknown."*

☐ Animal Feeding Operation	☐ Petroleum Storage Tank	☐ Water Rights
☐ Title V – Air	☐ Wastewater Permit	☐ _____
☐ Industrial & Hazardous Waste	☐ Water Districts	☐ _____
☐ Municipal Solid Waste	☐ Water Utilities	☐ Unknown
☐ New Source Review - Air	☐ Licensing - TYPE(s) _____	

SECTION IV: Preparer Information

39. Name	40. Title
Felix J. Manka	Principal

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
(512) 894 - 3230		(512) 894 - 3225

44. E-Mail Address: fmanka@cma-engineering.com

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 30, 2005

Ms. Michelle Fisher, City Administrator
City of Dripping Springs
P.O. Box 384
Dripping Springs, Texas 78620

Re: Edwards Aquifer, **Hays County**
PROJECT NAME: **Ledge Stone Subdivision Phase I;** North side of US 290 approximately 0.5 miles W. of CR 163; Dripping Springs, Texas.
Plan Type: Application for Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer Protection Program.

Edwards Aquifer Protection Program ID No. 05112102

Dear Ms. Fisher:

The enclosed CZP application is being forwarded to you pursuant to the Edwards Aquifer Protection Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval.

Please forward your comments to this office by **December 30, 2005.**

Should you have any questions concerning this matter, please contact a representative of the Edwards Aquifer Protection Program at the Austin regional office (512) 339-2929.

Sincerely,

Carolyn D. Runyon
Water Section Manager
Austin Regional Office

CDR/phs

Enclosure

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 30, 2005

Ms. Beckie J. Morris, General Manager
Hays Trinity Groundwater Conservation District
Clearlake Business Park
14101 Hwy 290 W, Bldg 100, Ste 212
Austin, TX 78737

Re: Edwards Aquifer, **Hays County**
PROJECT NAME: **Ledge Stone Subdivision Phase 1;** North side of US 290 approximately 0.5 miles W. of CR 163; Dripping Springs, Texas.
Plan Type: Application for Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer Protection Program.

Edwards Aquifer Protection Program ID No. 05112102

Dear Ms. Morris:

The enclosed CZP application is being forwarded to you pursuant to the Edwards Aquifer Protection Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval.

Please forward your comments to this office by **December 30, 2005.**

Should you have any questions concerning this matter, please contact a representative of the Edwards Aquifer Protection Program at the Austin Regional Office (512) 339-2929.

Sincerely,

Carolyn D. Runyon
Water Section Manager
Austin Regional Office

CDR/phs

Enclosure

Original

CMA Engineering, Inc.

Robert P. Callegari, P.E.
Felix J. Manka, P.E.

November 18, 2005

Ms. Patty Reeh
Regional Director
Texas Commission on Environmental Quality
Region 11
1921 Cedar Bend, Suite 150
Austin, Texas 78758-5336

Re: Contributing Zone Permit Application
CMA Job No. 1250-001

Dear Ms. Reeh:

Attached please find an application for a Contributing Zone Permit on behalf of 194 Bush, Ltd. This CZP application is submitted for your review and approval. If you have any questions concerning this application please call myself or Felix J. Manka at 894-3230.

Sincerely,

Craig A. Gonzalez, E.I.T.
Assistant Project Manager

Attachment: Original and three copies of Contributing Zone Permit Application

Xc: Mike Schoenfeld, DH Investment Company

ET19.

CONTRIBUTING ZONE PERMIT
for

Ledge Stone Subdivision
Phase 1

Prepared for:

DH Investments
13000 West Highway 290
Austin, Texas78737

Prepared by:

CMA Engineering, Inc.
14101 West Highway 290
Building 600
Austin, Texas 78737
(512) 894-3230

November 2005

CMA No. 1250-001

CONTRIBUTING ZONE PERMIT
for

Ledge Stone Subdivision
Phase 1

Prepared for:

DH Investments
13000 West Highway 290
Austin, Texas78737

November 2005

CMA No. 1250-001

Contributing Zone Plan Checklist

X Contributing Zone Plan Application, *TNRCC-10257*

ATTACHMENT A - Road Map
ATTACHMENT B - USGS Quadrangle Map
ATTACHMENT C - Project Narrative
ATTACHMENT D - Factors Affecting Surface Water Quality
ATTACHMENT E - Volume and Character of Stormwater
ATTACHMENT F - Suitability Letter from Authorized Agent, if OSSF is proposed
ATTACHMENT G - Alternative Secondary Containment Methods, if AST is proposed and alternative method of secondary containment is proposed
ATTACHMENT H - AST Containment Structure Drawings, if AST is proposed
ATTACHMENT I - 20% or Less Impervious Cover Waiver, if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site
ATTACHMENT J - BMPs for Upgradient Stormwater
ATTACHMENT K - BMPs for On-site Stormwater
ATTACHMENT L - BMPs for Surface Streams
ATTACHMENT M - Construction Plans
ATTACHMENT N - Inspection, Maintenance, Repair and Retrofit Plan
ATTACHMENT O - Pilot-Scale Field Testing Plan, if guidance other than the Edwards Aquifer Protection Program Guidance Manual to design Permanent BMPs
ATTACHMENT P - Measures for Minimizing Surface Stream Contamination

X Storm Water Pollution Prevention Plan (SWPPP)

X Notice of Intent (NOI)

X Agent Authorization Form, *TNRCC-0599*, if submitted by agent

X Contributing Zone Fee Application Form, *TNRCC-10258*

X Check Payable to the Texas Natural Resource Conservation Commission

X Core Data Form, *TNRCC-10400*

Contributing Zone Plan Application
for Regulated Activities
on the Contributing Zone to the Edwards Aquifer
and Relating to 30 TAC §213.24(1), Effective June 1, 1999

Regulated Entity Name: Ledge Stone Subdivision
County: Hays Stream Basin: Long Branch

1. X Regulated activities on this site will disturb at least 5 acres.
_ Regulated activities on this site will disturb less than 5 acres and are part of a larger common plan of development or sale with the potential to disturb cumulatively five or more acres.

2. Customer (Applicant):

Contact Person: Mike Schoenfeld
Entity: 194 Bush, Ltd.
Mailing Address: 13000 West Highway 290
City, State: Austin, Texas Zip: 78737
Telephone: (512) 394-0635 FAX: (512) 394-0590

Agent/Representative (If any):

Contact Person: Felix J. Manka
Title: Principal
Entity: CMA Engineering, Inc.
Mailing Address: 14101 West Highway 290
City, State: Austin, Texas Zip: 78737
Telephone: (512) 894-3230 FAX: (512) 894-3225

3. _ This project is inside the city limits of _____.
X This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Dripping Springs, Texas.
_ This project is not located within any city's limits or ETJ.

4. 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.
The proposed project is located on the north side of US Highway 290 approximately 0.5 miles west of County Road 163 (Nutty Brown Road) in Hays County.

5. X **ATTACHMENT A - Road Map.** A road map showing directions to and the location of the project site is found as at the end of this form.

6. X **ATTACHMENT B - USGS Quadrangle Map.** A copy of the a USGS Quadrangle Map (Scale: 1" = 2000') is found at the end of this form. The map(s) clearly shows:
X Project site boundaries.
X USGS Quadrangle Name(s).

7. X **ATTACHMENT C - Project Narrative.** A detailed narrative description of the proposed project is found at the end of this form.

8. Existing project site conditions are noted below:

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

PROJECT INFORMATION

9. The type of project is:
X Residential: # of Lots: 99
X Residential: # of Living Unit Equivalents: 236
__ Commercial
__ Industrial
__ Other: _____

10. Total project area (size of site): 108.53 Acres
Total disturbed area: 101.46 Acres

11. Projected population: 826

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

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	643,231	÷ 43,560 =	14.77
Parking		÷ 43,560 =	
Other paved surfaces	413,504	÷ 43,560 =	9.49
Total Impervious Cover	1,056,734	÷ 43,560 =	24.26
Total Impervious Cover ÷ Total Acreage x 100 =			22.35 %

13. X **ATTACHMENT D - Factors Affecting Surface Water Quality.** A description of factors that could affect surface water quality is found as at the end of this form. If applicable, this should included the location and description of any discharge associated with industrial activity other than construction.

14. X Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY
Complete questions 15-20 if this application is exclusively for a road project. N/A

15. 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.

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

__ Concrete

__ Asphaltic concrete pavement
__ Other: _____

17. Length of Right of Way (R.O.W.): _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

18. Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = ____% impervious cover.

19. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

20. __ 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

21. X **ATTACHMENT E - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is found at the end of this form. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. The runoff coefficient of the site for both pre-construction and post-construction conditions is included.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

22. 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 written approval is provided at the end of this form. 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, or it identifies those areas that are not suitable for the use of private sewage facilities. The system will be designed by a licensed professional engineer or a registered sanitarian and installed by a licensed installer in compliance with 30 TAC §285.

X Sewage Collection System (Sewer Lines):
Wastewater is to be disposed of by conveyance to the Hays Co. MUD No. 4 _____ (name) treatment plant for treatment and disposal. The treatment facility is :
__ existing.
X proposed.

__ 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.

FOR PERMANENT ABOVEGROUND STORAGE TANKS (ASTs) > 500 GALLONS
Complete questions 23-29 if this project includes the installation of AST(s) with volume(s) greater than 500 gallons.

23. Tanks and substance stored: N/A

AST Number	Size (Gallons)	Substance to be Stored	Tank Material
1			
2			
3			
4			
5			
Total		x 1.5 =	gallons

24. ___ 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 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.

N/A **ATTACHMENT G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are found at the end of this form.

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

Length (L) (Ft.)	Width (W) (Ft.)	Height (H) (Ft.)	L x W x H = (Ft^3)	Gallons
Total				

26. ___ 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

27. ___ 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 ___ _____.

28. **ATTACHMENT H - AST Containment Structure Drawings.** A scaled drawing of the containment structure is found at the end of this form that shows the following:

N/A 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

29. 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.
__ 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

Items 30 through 41 must be included on the Site Plan.

30. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = ___'.

31. 100-year floodplain boundaries

X 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 No.'s 4803210055E & 4803210065E

32. __ 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.
X 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.

33. X A drainage plan showing all paths of drainage from the site to surface streams.

34. N/A The drainage patterns and approximate slopes anticipated after major grading activities.

35. X Areas of soil disturbance and areas which will not be disturbed.

36. X Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

37. X Locations where soil stabilization practices are expected to occur.

38. X Surface waters (including wetlands).

39. X Locations where stormwater discharges to surface water.
__ There will be no discharges to surface water.

40. ___ Temporary aboveground storage tank facilities.
X Temporary aboveground storage tank facilities will not be located on this site.

41. ___ Permanent aboveground storage tank facilities.
X Permanent aboveground storage tank facilities will not be located on this site.

Permanent best management practices (BMPs) and measures that will be used during and after construction is completed.

42. X Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

43. X 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.

X 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 provided below

_____

_____

_____

_____

44. X 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.

45. N/A 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.

___ This site will be used for low density single-family residential development and has 20% or less impervious cover.

___ This site will be used for low density single-family residential development but has more than 20% impervious cover.

X This site will not be used for low density single-family residential development.

46. N/A 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.** This 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 found at the end of this form.

__ This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

X This site will not be used for multi-family residential developments, schools, or small business sites.

47. **ATTACHMENT J - BMPs for Upgradient Stormwater.**

N/A 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 provided as **ATTACHMENT J** at the end of this form.

__ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT J** at the end of this form.

__ If 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, an explanation is provided as **ATTACHMENT J** at the end of this form.

48. **ATTACHMENT K - BMPs for On-site Stormwater.**

N/A 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 provided as **ATTACHMENT K** at the end of this form.

__ If 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, an explanation is provided as **ATTACHMENT K** at the end of this form.

49. X **ATTACHMENT L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is provided at the end of this form.

50. X **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. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ Construction Notes, all proposed structural measures, and appropriate details must be shown on the construction plans.

51. X **ATTACHMENT N - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

52. X The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

N/A **ATTACHMENT O - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field

testing is provided at the end of this form.

53. X **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 provided at the end of this form. 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 results in water quality degradation.

Responsibility for maintenance of permanent BMPs and measures after construction is complete.

54. X 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.

55. X 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

56. X One (1) original and three (3) copies of the complete application has been provided.

57. X 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.

58. X 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.

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:

FELIX J. MANKA, P.E.

Print Name of Customer/Agent

Felix J Manka 11.18.05

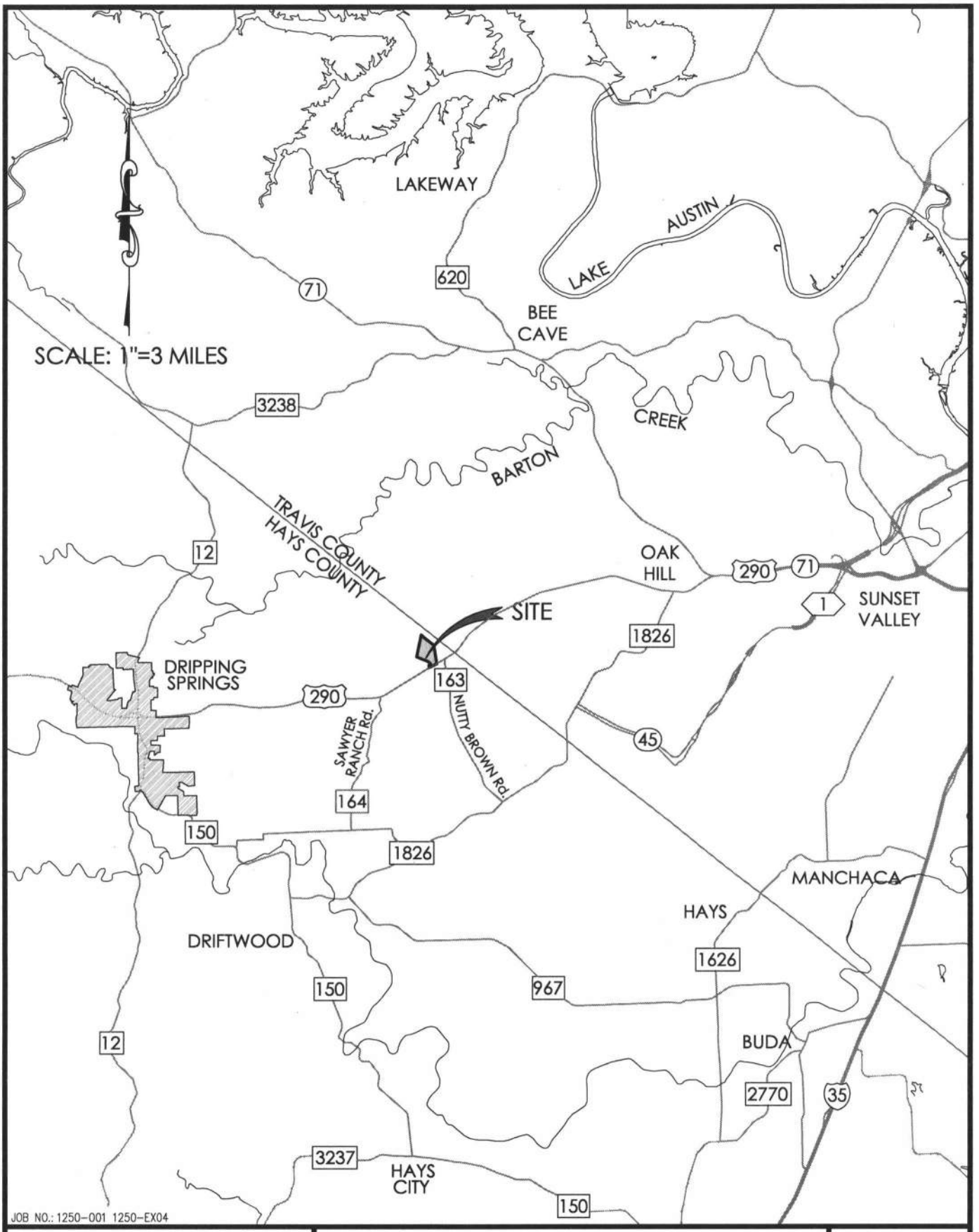
Signature of Customer/Agent Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Attachment A

Road Map



CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290
BUILDING 600
AUSTIN, TEXAS 78737
(512) 894-3230 Fax: (512) 894-3225

BUSH RANCH, PHASE I
ROAD MAP

A

Attachment B

USGS Quadrangle Map:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SIGNAL HILL QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 BUDA 15' QUADRANGLE

RECHARGE ZONE

RECHARGE ZONE

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1967. Field checked 1968. Revised from aerial photographs taken 1985. Field checked 1986. Map edited 1986

Projection: Texas coordinate system, south central zone (Lambert conformal conic)
10,000-foot grid ticks based on Texas coordinate system, south central and central zones
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 18 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence lines

Red tint indicates areas in which only landmark buildings are shown

UTM GRID AND 1986 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION

3097-223

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

SIGNAL HILL, TEX.
NW/4 BUDA 15' QUADRANGLE
30097-B8-TF-024
1986
DMA 6444 III NW-SERIES V882

Attachment C

Project Narrative

ATTACHMENT C - PROJECT NARRATIVE

This project site, totaling approximately 108.53 acres, is located at 13000 US Highway 290 West in Hays County, approximately 0.5 miles west of the intersection of US Highway 290 West, and County Road 163 (Nutty Brown Road). The project will disturb approximately 101.46 acres and consists of the construction of approximately 236 single family residences, a wastewater treatment plant with a capacity no greater than 150,000 GPD, and a 75,000 GPD subsurface drip irrigation system. The irrigation system will utilize approximately 17.2 acres for disposal of treated wastewater effluent. The total proposed impervious cover for this site will be approximately 22.35%.

Since the proposed impervious cover is greater than 20%, additional permanent BMPs are required for this project. There are two proposed extended detention water quality ponds included in the plans.

The attached construction plans include the SWPPP, the project site boundaries, limits of construction, drainage plan, water quality ponds, and temporary BMPs, including rock berms, silt fences and construction exits. The proposed temporary BMP plan is based on the TCEQ Technical Guidance Manual.

Attachment D

Factors Affecting Surface Water Quality

ATTACHMENT D – FACTORS AFFECTING SURFACE WATER QUALITY

Surface water quality can be affected in two ways, during construction, and after construction. Each is considered separately.

During Construction: Normal factors for construction affect surface water quality. They include:

- Erosion of Disturbed Areas: Soil from areas where vegetation is removed during construction tends to wash away during rainfall.

- Sedimentation in Stormwater Runoff: Soils and debris washed away during rainfall will be retained onsite by the use of silt fence and rock berms as shown in the attached construction plans.

After Construction: Factors affecting surface water quality after construction is completed include:

- Erosion of Disturbed Areas: After completion of construction, the disturbed areas will then be revegetated. Temporary controls will be maintained until revegetation is established.

Attachment E

Volume and Character of Stormwater

ATTACHMENT E – VOLUME AND CHARACTER OF STORMWATER

Drainage calculations have been provided in the attached plans for the areas to be disturbed.

Stormwater Volume and Character: Runoff coefficient (c) values were determined using the City of Austin Drainage Criteria Manual (DCM) Table 2-2. The existing condition of the site can be described as pasture/range land with 2-13% slopes. For this land description during the 100-year storm event the DCM assigns a c value range of 0.49 – 0.53. The c values determined for the 100-year storm event for developed areas range from 0.49 to 0.76. Soils for this site consist of clay loams of the Brackett-Rock outcrop – Comfort complex and Real complex, steep (BtD & BtG), which are classified as Hydrologic Soil Group "C".

Attachment L

BMPs for Surface Streams

ATTACHMENT L – BMPs FOR SURFACE STREAMS

Water quality pond design calculations have been provided in the attached construction plans.

BMPs for Surface Streams: The proposed residential development will have an impervious cover greater than 20%. Thus, in compliance with TCEQ Chapter 213 permanent BMPs are proposed. Extended detention water quality ponds will be utilized to prevent pollutants from entering surface streams. Two ponds are proposed to capture 85% of the incremental increase in the annual mass loading of TSS, which exceeds the TCEQ requirement of 80% TSS removal. Pond locations are shown in the attached construction plans.

Temporary BMPs will be provided to prevent pollutants from entering surface streams during construction. The temporary BMPs to be used are silt fence and rock berms. Temporary BMPs shall be located as shown on the attached construction plans.

Attachment M

Design Calculations

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 1
Background Load (Predevelopment)

Inputs	P	32	inches	average precipitation
	Au	43.08	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	744	lb/year	annual pollutant load

Post Development Load

Inputs	A	43.08	acres	
	P	33	inches	
	IC	17.5	%	
Output	Rv	0.10		
	Load	5682	lb/year	

Required Reduction	(80%)	3950	lb/year	

Capture Volume

Inputs	Li	5682	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	3950	lb	
Output	F	93%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**1737**	**cy**	
	46912	**cf**	1.08 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 2
Background Load (Predevelopment)

Inputs	P	32	inches	average precipitation
	Au	9.77	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	169	lb/year	annual pollutant load

Post Development Load

Inputs	A	9.77	acres	
	P	33	inches	
	IC	48.1	%	
Output	Rv	0.31		
	Load	3889	lb/year	

Required Reduction	(80%)	2977	lb/year

Capture Volume

Inputs	Li	3889	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	2977	lb	
Output	F	102%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**394**	**cy**		Total West WQ Pond Volume
	10636	**cf**	0.24 acft	1.32

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch North Pond
Background Load (Predevelopment)

Inputs	P	32	inches	average precipitation
	Au	56.33	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	973	lb/year	annual pollutant load

Post Development Load

Inputs	A	56.33	acres	
	P	33	inches	
	IC	17.1	%	
Output	Rv	0.10		
	Load	7292	lb/year	

Required Reduction	(80%)	5055	lb/year	

Capture Volume

Inputs	Li	7292	lb	
	Fraction	100%		
	TSS R	75%		89% for Sand Filters (TNRCC Manual Table 3.4)
	Lr	5055	lb	
Output	F	92%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**2272**	**cy**	
	61343	**cf**	1.41 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Bush Ranch

West Pond

Bush West Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	43.62	102.51	141.29	199.76
W2	16.66	39.79	54.49	77.12
Wout	31.99	76.88	103.29	146.70
Outfall	88.07	207.20	281.70	397.92

Developed Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	56.32	103.24	134.19	175.63
Pond W1	0.56	88.69	160.62	206.51
W2	32.21	60.80	76.79	103.34
Pond W2	14.91	77.67	138.00	227.96
Wout	46.96	86.61	111.30	146.86
Outfall	46.96	134.88	224.53	360.86
Pond W1 Elev	1117.8	1118.3	1118.5	1118.7
Pond W2 El	1106.2	1107.6	1108.3	1108.9

Required Water Quality Storage 1.32 acft

Total Pond Volume 6.55 acft

Pond W1

Maximum 100 Year Water Surface Elevation 1118.70'

3" Orifice @ 1112.00'

105' Wier @ 1118.00'

Top of Pond Elevation 1118.00'

Pond W2

Maximum 100 Year Water Surface Elevation 1108.90'

18" Orifice @ 1104.00'

10' Wier @ 1106.00'

25' Wier @ 1108.00'

Top of Pond Elevation 1110.00'

Bush Ranch
West Pond

W2 Pond WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1104	0.00	0.00	0.00	0.00
1105	6711.00	0.15	0.15	0.15
1106	17185.50	0.39	0.39	0.55
1107	27820.70	0.64	0.64	1.19
1108	35675.10	0.82	0.82	2.01
1109	40510.10	0.93	0.93	2.94
1110	42966.00	0.00	0.99	3.92

W1 Pond WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1112	0.00	0.00	0.00	0.00
1113	6206.00	0.14	0.14	0.14
1114	13689.00	0.31	0.31	0.46
1115	19180.50	0.44	0.44	0.90
1115.5	21026.00	0.48	0.24	1.14
1116	22871.50	0.53	0.26	1.40
1117	25125.00	0.58	0.58	1.98
1118	27357.00	0.63	0.63	2.61

West Pond WQ ForeBay

WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1114	1012.00	0.02	0.00	0.00
1115	5573.00	0.13	0.13	0.13
1116	7882.00	0.18	0.18	0.31

Bush Ranch

North Pond

Bush North Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
N1	42.69	104.24	141.52	200.62
N2	14.17	34.41	47.66	67.55
Nout	10.76	25.47	33.94	48.29
Outfall	63.01	151.82	208.90	295.95

Developed Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
N1	71.23	127.81	160.96	213.54
Pond N1	35.27	103.91	145.00	211.08
N2	24.92	50.52	66.12	89.31
Pond N2	23.05	115.28	177.07	273.68
Nout	15.34	31.04	39.71	54.32
Outfall	24.66	121.37	185.97	294.65
Pond N1 Elev	1093.6	1094.4	1094.8	1094.3
Pond N2 El	1081.2	1082.2	1082.4	1082.9

Required Water Quality Storage 1.41 acft

Total Pond Volume 8.13 acft

Pond N1

Maximum 100 Year Water Surface Elevation 1094.30'

3" Orifice @ 1088.00'

2" Orifice @ 1088.00'

20' Wier @ 1093.00'

Top of Pond Elevation 1094.00'

Pond N2

Maximum 100 Year Water Surface Elevation 1082.90'

18" Orifice @ 1078.00'

20' Wier @ 1081.00'

40' Wier @ 1082.00'

Top of Pond Elevation 1084.00'

Bush Ranch
North Pond

N2 Pond WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1078	0.00	0.00	0.00	0.00
1079	6922.34	0.01	0.16	0.16
1080	21858.40	0.50	0.50	0.66
1081	36808.87	0.85	0.85	1.51
1082	49553.23	1.14	1.14	2.64
1083	57739.31	1.33	1.33	3.97
1084	63744.99	1.46	1.46	5.43

N1 Pond WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1088	0.00	0.00	0.00	0.00
1089	5032.60	0.01	0.12	0.12
1090	13225.60	0.30	0.30	0.42
1091	18770.72	0.43	0.43	0.85
1092	23576.50	0.54	0.54	1.39
1093	27366.50	0.63	0.63	2.02
1094	29579.40	0.68	0.68	2.70

North Pond WQ ForeBay

WS ELEVATION	Area sqft	Area acres	VOLUME acft	Cumulative VOLUME
1091	0.00	0.00	0.00	0.00
1092	4519.00	0.10	0.10	0.10
1093	6882.90	0.16	0.16	0.26

HMS Summary

Bush West Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	43.62	102.51	141.29	199.76
W2	16.66	39.79	54.49	77.12
Wout	31.99	76.88	103.29	146.70
Outfall	88.07	207.20	281.70	397.92

Developed Flows (cfs)					
	2 Yr	10 Yr	25 Yr	100 Yr	
W1	56.32	103.24	134.19	175.63	
Pond W1	0.56	88.69	160.62	206.51	
W2	32.21	60.80	76.79	103.34	
Pond W2	14.91	77.67	138.00	227.96	
Wout	46.96	86.61	111.30	146.86	
Outfall	46.96	134.88	224.53	360.86	TOP
Pond W1 Elev	1117.8	1118.3	1118.5	1118.7	1118.0
Pond W2 El	1106.2	1107.6	1108.3	1108.9	1110.0

HMS Summary

Bush North Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
N1	42.69	104.24	141.52	200.62
N2	14.17	34.41	47.66	67.55
Nout	10.76	25.47	33.94	48.29
Outfall	63.01	151.82	208.90	295.95

Developed Flows (cfs)					
	2 Yr	10 Yr	25 Yr	100 Yr	
N1	71.23	127.81	160.96	213.54	
Pond N1	35.27	103.91	145.00	211.08	
N2	24.92	50.52	66.12	89.31	
Pond N2	23.05	115.28	177.07	273.68	
Nout	15.34	31.04	39.71	54.32	
Outfall	24.66	121.37	185.97	294.65	
Pond N1 Elev	1093.6	1094.4	1094.8	1094.3	1094.0
Pond N2 El	1081.2	1082.2	1082.4	1082.9	1084.0

Attachment N

Inspection, Maintenance, Repair and Retrofit Plan

ATTACHMENT N – Inspection, Maintenance, Repair and Retrofit Plan

The proposed extended detention water quality ponds shall be maintained in accordance with TCEQ publication RG-348, the Edwards Aquifer Technical Guidance Manual. Maintenance of full sedimentation basins for the residential development shall be by 194 Bush, Ltd. 194 Bush shall be responsible for following the management practices in the maintenance plan detailed in Section 3.5.6 below.

RG-348 Section 3.5.6 Extended Detention Basins
Extended detention basins have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and nonroutine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

There are many factors that may affect the basin's operation and that should be periodically checked. These factors can include mowing, control of pond vegetation, removal of accumulated bottom sediments, removal of debris from all inflow and outflow structures, unclogging of orifice perforations, and the upkeep of all physical structures that are within the detention pond area. One should conduct periodic inspections and after each significant storm. Remove floatables and correct erosion problems in the pond slopes and bottom. Pay particular attention to the outlet control perforations for signs of clogging. If the orifices are clogged, remove sediment and other debris. The generic aspects that must be considered in the maintenance plan for a detention facility are as follows:

- *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 times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately.

- *Mowing.* The upper stage, side slopes, embankment, and emergency spillway of an extended 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 appeal 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 extended 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 pond 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. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired.

• *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.

• *Nuisance Control.* Standing water (not desired in a extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

• *Sediment Removal.* When properly designed, dry extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins (which have a permanent pool to conceal deposited sediments), sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also 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 lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

I, Mike Schoenfeld, as representative of 194 Bush, Ltd have read and understand the above maintenance guidelines for the proposed extended detention water quality ponds, and further acknowledge the Dirstrict's responsibility for meeting the requirements listed in the maintenance plan.

x Michael J. Schoenfeld

Vice President
Title

Attachment P

Measures for Minimizing Surface Stream Contamination

ATTACHMENT P – Measures for Minimizing Surface Stream Contamination

Surface stream contamination will be minimized during construction and after construction using both temporary and permanent BMPs. During construction inlet protection, silt fence and rock berms will be used to trap sediment minimizing contaminants from entering surface streams. Permanent BMPs to be constructed include velocity dissipaters and extended detention water quality ponds. Velocity dissipaters will be installed at stormwater runoff outfalls as a means to reduce erosion due to higher velocities. Velocity dissipaters will be located as shown on the attached construction plans. Stormwater runoff will generally flow from the developed lots to the streets where curb inlets will be used to transfer the runoff into the underground stormwater system. The stormwater system diverts flow to the proposed extended detention ponds for removal of contaminants. The temporary and permanent BMPs shall be maintained in accordance with the Edwards Aquifer Technical Guidance Manual, TCEQ publication RG-348.

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

I Mike Schoenfeld,
Print Name

Vice President
Title - Owner/President/Other

of DH Investment Company
Corporation/Partnership/Entity Name

have authorized Felix J. Manka
Print Name of Agent/Engineer

of CMA Engineering, 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 applicants 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.

Michael T. Schoenfeld 11/18/05
Applicant's Signature Date

THE STATE OF TEXAS §

County of HAYS §

BEFORE ME, the undersigned authority, on this day personally appeared MICHAEL SCHOENFELD 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 18th day of NOVEMBER, 05.

Bonnie Raye Strickland
NOTARY PUBLIC

BONNIE RAYE STRICKLAND
NOTARY PUBLIC STATE OF TEXAS
COMMISSION EXPIRES:
FEBRUARY 16, 2009

BONNIE RAYE STRICKLAND
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: FEBRUARY 16, 2009

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under the TPDES General Permit

TCEQ Office Use Only
TPDES Permit Number: TXR15|__|__|__|__|__|
GIN Number: |__|__|__|__|__|__|__|__|
Fee Receipt No. _____

IMPORTANT:
- Use the attached **INSTRUCTIONS** when completing this form.
- After completing this form, use the attached **CUSTOMER CHECKLIST** to make certain all items are complete and accurate.
- Missing, illegible, or inaccurate items may delay final acknowledgment or coverage under the general permit.

Application Fee: You must submit the $100 NOI Application Fee to TCEQ under separate cover (see instructions) using the attached Application Fee submittal form. (DO NOT SEND A COPY OF THE NOI WITH THE APPLICATION FEE SUBMITTAL FORM)
Tell us how you paid for this fee:

Check/Money Order No.:	Name Printed on Check:

A. OPERATOR

1. TCEQ Issued Customer Number (CN) (if available): CN601457716

2. Legal Name (spelled exactly as filed with the Texas Secretary of State, County, or legal document that was used in forming the entity):
194 Bush, Ltd

3. Mailing Address: 13000 West Highway 290 Suite No./Bldg.No.:

City: Austin	State: TX	ZIP Code: 78737

4. Phone No.: (512) 394 - 0635	Extension:
5. FAX No. (512) 394 - 0590	E-mail Address:

6. Type of Operator: ☐ Individual ☐ Sole Proprietorship-D.B.A. ☐ Partnership ☐ Corporation ☐ Federal Government ☐ State Government ☐ County Government ☐ City Government ☐ Other: _____

7. Independent Operator: ☐ Yes ☒ No (If governmental entity or a subsidiary or part of a larger corporation, check "NO")

8. Number of Employees: ☒ 0-20; ☐ 21-100; ☐ 101-250; ☐ 251-500; or ☐ 501 or higher

9. Business Tax and Filing Numbers *(not applicable to Individuals, Government, General Partnerships, and Sole Proprietorship-D.B.A)*:
State Franchise Tax ID Number: _____ Federal Tax ID: _____
TX SOS Charter (filing) Number: 75-2933817 DUNS Number: _____ (If known)

B. BILLING ADDRESS (The Operator is responsible for paying the annual fee.)

☑ **Same As Operator** (check if address is the same, then proceed with Section C.)

1. Billing Mailing Address: Suite No./Bldg.No.:

City:	State:	ZIP Code:

2. Billing Contact (Attn or C/O):

3. Country Mailing Information (if outside USA) Territory: Country Code: Postal Code:

4. Phone No.: ( ) -	Extension:
5. FAX No.	E-mail Address:

C. APPLICATION CONTACT (If TCEQ needs additional information regarding this application, who should be contacted?)

1. Name:	Title:	Company:
2. Phone No.: ( ) -	Extension:	
3. FAX No.	E-mail Address:	

D. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

1. TCEQ Issued RE Reference Number (RN) (if available):
2. Name of Project or Site: Ledge Stone Subdivision
3. Physical Address of Project or Site: (enter in spaces below)

Street Number:	Street Name:	
City (nearest to the site):	ZIP Code (nearest to the site):	County (Counties if >1):

4. If no physical address (Street Number & Street Name), provide a written location access description that can be used for locating the site:
(Ex.: 2 miles west from intersection of Hwy 290 & IH35 on Hwy 290 South)
The proposed project is located on the north side of US Highway 290 approximately 0.5 miles west of County Road 163 (Nutty Brown Road) in Hays County.
5. Latitude: 30 12' 7" N Longitude: 97 59' 3" W
6. Standard Industrial Classification (SIC) code: 6552
7. Describe the activity related to the need for this authorization at this site *(do not repeat the SIC and NAICS code)*:
Construction of water, wastewater, drainage, and street improvements
8. Is the project/site located on Indian Country Lands? ☐ Yes ☒ No
If Yes, you must obtain authorization through EPA, Region VI.

E. SITE MAILING ADDRESS (address for receiving mail at the site)

☑ **Same As Operator** (check if address is the same, then proceed with Section F.)

Mailing Address:		Suite No./Bldg.No.:
City:	State:	ZIP Code:

F. GENERAL CHARACTERISTICS

1. Has a Pollution Prevention Plan been prepared as required in the general permit? ☒ Yes ☐ No
If No, coverage may be denied as the PPP is required at the time the NOI is submitted to TCEQ.
2. Provide the estimated area of land disturbed (to the nearest acre): 101 Acres
3. Provide the name of the receiving water body (local stream, lake, drainage ditch), MS4 Operator (if applicable) and the segment number where storm water runoff will flow from the construction site.

MS4 Operator: N/A Receiving Water Body: Long Branch Segment: N/A

C. CERTIFICATION

I, Mike Schoenfeld — *Typed or printed name*

Vice President — *Title (Required)*

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

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature: Michael J. Schoenfeld *(Use Blue Ink)* Date: 11/18/05

CMA Engineering, Inc.

Robert P. Callegari, P.E.
Felix J. Manka, P.E.

Via Facsimile

March 20, 2006

Mr. Terry Web
Texas Commission on Environmental Quality
Region 11
1921 Cedar Bend, Suite 150
Austin, Texas 78758-5336

Re: Contributing Zone Permit Application
CMA Job No. 1250-001

Dear Mr. Webb:

In response to your third set of comments concerning this project, from an email dated March 17, 2006:

Item 1. Please provide tables in 0.5 feet increments.

After discussing this with Mike Daniels this morning, it was decided this was not necessary as it would be an interpolation of existing data since we have no 0.5-foot contours.

Item Number 2. Please recalculate according to the pond sizing calculations (see items 3 and 5 below). Orifice sizes may need to be adjusted according to these results. For example, if West Pond water quality volume is 1.36 ac ft, how long would it take to drain from 1.36 ac ft to 0.68 ac ft.

Revised rating tables are shown, and based on our drawdown calculations, Pond W1 releases 0.98 acre feet in 24 hours (less than half the required water quality volume of 2.06 acre feet) and Pond N1 releases 0.6 acre feet in 24 hours (less than half the required water quality volume of 1.69 acre feet).

Item 3. Please revise calculations for W1. The runoff depth (RD) should be about 0.497 inches based on an F of 0.98 at 28.5% IC. If you want credit for additional load removal, then F would have to be equal to 1 and the RD would have to be recalculated. Note: runoff depth on your spreadsheet was 0.25 inches and the required water quality volume was 0.69 ac ft. Both of these values appear to be incorrect.

Runoff depths have been revised for changed impervious cover. Required water quality volume for Pond W1 is now 2.06 acre feet with a RD of 0.75 inches, and for Pond N1 is 1.69 acre feet with a RD of 0.3 inches.

14101 West Highway 290, Bldg. 600
Phone: (512)894-3230

Austin, Texas 78737
Fax (512)894-3225

Item 5. Please reread. Remember to get 75% removal of the post developed load, then F has to be 1.0.

Pond W1 has been recalculated with F of 1.0 and revised RD and required water quality volume. Total calculations for load removal are shown below:

	Post Developed Load	Efficiency %	F	Potential Removal (lb/yr)	Required Removal (lb/yr)	
Pond W1	5848	75%	1.0	4386	4287	+99
Pond W2A	1203	75%	1.0	902	910	-8
Channel	1094	70%		766	828	-62
Subtotal				**6054**	**6025**	+29
Pond N1 & N2	7518	75%	0.92	5187	5211	-24
Site Total				**11241**	**11236**	+5

The runoff depth for W2 needs to be recalculated. It should be 1 inch and the required water quality volume should be 0.37 ac ft.

Calculations for W2 have been revised, and required water quality volume has been determined to be 0.37 acre feet, 20% of which is contained in the sediment forebay.

The grassy swale calculations look good upon initial review. We recommend check dams at the two slope changes to assure the optimal TSS removal. See page 3-42 of the TGM. A grassy swale inspection plan signed by the owner will be required. See page 3-71 of the TGM.

A signed revised Inspection Plan for both Extended Detention Basins and Grassy Swales has been attached. Please replace previous copy.

If you have any questions concerning this application please call me or Felix J. Manka at 894-3230.

Sincerely,

Jacy Warwick

Jacy Warwick, E.I.T.
Assistant Project Manager

Felix J. Manka

Felix J. Manka, P.E.
Principal

STATE OF TEXAS
FELIX J. MANKA
66104
LICENSED
PROFESSIONAL ENGINEER

Attachments

Xc: Mike Schoenfeld, DH Investment Company

Pond W1

West Ponds System

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW					
Qty: 1		Weir Eqn.		Weir Eqn.							
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5							
ORIFICE BOTTOM ELEV											
1112.00	**Orifice Dimensions**	**Weir Dimensions**		**Weir Dimensions**						**Incremental**	**Cumulative**
ORIFICE CENTER ELEV	**Diam. (inches)**	**WEIR ELEV**	**L (ft)**	**WEIR ELEV**	**L (feet)**	**W.S. ELEV**	**FLOW**	**Volume**	**Volume**	**Drawdown**	**Drawdown**
1112.125	**3**	**1118.00**	**105**	**0.00**	**0**			acft	cf	hrs	hrs
WATER SURFACE ELEV	**FLOW (CFS)**										
1112.00	0.0000	1112.00	0.0000		0.0000	1112.00	0.00	0.00	0		
1113.00	0.2211	1113.00	0.0000		0.0000	1113.00	0.22	0.14	6206	13.96	56.87
1114.00	0.3236	1114.00	0.0000		0.0000	1114.00	0.32	0.46	19895	14.71	42.91
1115.00	0.4007	1115.00	0.0000	1115.00	0.0000	1115.00	0.40	0.90	39075.5	7.00	28.20
1115.50	0.4342	1115.50	0.0000	1115.50	0.0000	1115.50	0.43	1.14	49588.5	7.06	21.20
1116.00	0.4653	1116.00	0.0000	1116.00	0.0000	1116.00	0.47	1.40	61024.25	14.14	14.14
1117.00	0.5218	1117.00	0.0000	1117.00	0.0000	1117.00	0.52	1.98	86149.25		0.00
1118.00	0.5729	1118.00	0.0000	1118.00	0.0000	1118.00	0.57			WQ Elevation=1117.12	
1119.00	0.6197	1119.00	315.0000	1119.00	0.0000	1119.00	315.62				

Pond W2

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW	
Qty: 1		Weir Eqn.		Weir Eqn.			
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5			
ORIFICE BOTTOM ELEV							
1104.00	**Orifice Dimensions**	**Weir Dimensions**		**Weir Dimensions**			
ORIFICE CENTER ELEV	**Diam. (inches)**	**WEIR ELEV**	**L (ft)**	**WEIR ELEV**	**L (feet)**	**W.S. ELEV**	**FLOW**
1104.750	**18**	**1106.00**	**10**	**1108.00**	**25**		
WATER SURFACE ELEV	**FLOW (CFS)**						
1104.00	0.0000	1104.00	0.0000		0.0000	1104.00	0.00
1105.00	4.2543	1105.00	0.0000		0.0000	1105.00	4.25
1106.00	9.5128	1106.00	0.0000		0.0000	1106.00	9.51
1107.00	12.7628	1107.00	30.0000	1107.00	0.0000	1107.00	42.76
1108.00	15.3389	1108.00	84.8528	1108.00	0.0000	1108.00	100.19
1109.00	17.5408	1109.00	155.8846	1109.00	75.0000	1109.00	248.43
1110.00	19.4955	1110.00	240.0000	1110.00	212.1320	1110.00	471.63

North Ponds System

Pond N1

ORIFICE #1		ORIFICE #1		WEIR #2		TOTAL FLOW					
Qty: 1		Qty: 1		Weir Eqn.							
Orifice Eqn. Q= 0.6A√2gh		Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5							
ORIFICE BOTTOM ELEV		ORIFICE BOTT									
1088.00	Orifice Dimensions	1088.00	ifice Dimensio	Weir Dimensions						Incremental	Cumulative
ORIFICE CENTER ELEV	Diam. (inches)	ORIFICE CEN	Diam. (inches)	WEIR ELEV	L (ft)	W.S. ELEV	FLOW	Volume	Volume	Drawdown	Drawdown
1088.125	3	1088.000	0	1093.00	20			acft	cf	hrs	hrs
WATER SURFACE ELEV	FLOW (CFS)	WATER SURFFLOW (CFS)									
1088.00	0.0000	1088.00	0.0000	1088.00	0.0000	1088.00	0.00	0	0		
1089.00	0.2211	1089.00	0.0000	1089.00	0.0000	1089.00	0.22	0.14247	6206	13.96	42.04
1090.00	0.3236	1090.00	0.0000	1090.00	0.0000	1090.00	0.32	0.46	19895	14.71	28.08
1091.00	0.4007	1091.00	0.0000	1091.00	0.0000	1091.00	0.40	0.89705	39075.5	6.74	13.36
1092.00	0.4653	1092.00	0.0000	1092.00	0.0000	1092.00	0.47	1.138395	49588.5	6.62	6.62
1092.50	0.4944	1092.50	0.0000	1092.50	0.0000	1092.50	0.49	1.400924	61024.25		0.00
1093.00	0.5218	1093.00	0.0000	1093.00	0.0000	1093.00	0.52			WQ Elevation=1092.4	
1094.00	0.5729	1094.00	0.0000	1094.00	60.0000	1094.00	60.57				
1095.00	0.6197	1095.00	0.0000	1095.00	169.7056	1095.00	170.33				

Pond N2

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW	
Qty: 1		Weir Eqn.		Weir Eqn.			
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5			
ORIFICE BOTTOM ELEV							
1078.00	Orifice Dimensions	Weir Dimensions		Weir Dimensions			
ORIFICE CENTER ELEV	Diam. (inches)	WEIR ELEV	L (ft)	WEIR ELEV	L (feet)	W.S. ELEV	FLOW
1078.750	18	1081.00	20	1082.00	40		
WATER SURFACE ELEV	FLOW (CFS)						
1078.00	0.0000	1078.00	0.0000	1078.00	0.0000	1078.00	0.00
1079.00	4.2543	1079.00	0.0000	1079.00	0.0000	1079.00	4.25
1080.00	9.5128	1080.00	0.0000	1080.00	0.0000	1080.00	9.51
1081.00	12.7628	1081.00	0.0000	1081.00	0.0000	1081.00	12.76
1082.00	15.3389	1082.00	60.0000	1082.00	0.0000	1082.00	75.34
1083.00	17.5408	1083.00	169.7056	1083.00	120.0000	1083.00	307.25
1084.00	19.4955	1084.00	311.7691	1084.00	339.4113	1084.00	670.68

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 1
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	27.44	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	489	lb/year	annual pollutant load

Post Development Load

Inputs	A	27.44	acres	
	P	33	inches	
	IC	28.5	%	= 7,82 ac
Output	Rv	0.17		
	Load	5848	lb/year	4385.64

Required Reduction	(80%)	4287	lb/year ✓

Capture Volume

Inputs	Li	5848	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	4287	lb	
Output	F	100%		
Inputs	Runoff	0.75	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**3321**	**cy**	
	89658	**cf**	2.06 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 2A
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	3.70	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	66	lb/year	annual pollutant load

Post Development Load

Inputs	A	3.70	acres	
	P	33	inches	
	IC	41.1	%	=1.5ac
Output	Rv	0.26		
	Load	1203	lb/year	902.46

Required Reduction	(80%)	910	lb/year

Capture Volume

Inputs	Li	1203	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	910	lb	
Output	F	101%		
Inputs	Runoff	1	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**596**	**cy**	
	16099	**cf**	0.37 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch North Pond
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	56.33	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	1004	lb/year	annual pollutant load

Post Development Load

Inputs	A	56.33	acres	
	P	33	inches	
	IC	17.7	%	
Output	Rv	0.11		
	Load	7518	lb/year	5638.25

Required Reduction	(80%)	5211	lb/year	

Capture Volume

Inputs	Li	7518	lb	
	Fraction	100%		
	TSS R	75%		89% for Sand Filters (TNRCC Manual Table 3.4)
	Lr	5211	lb	
Output	F	92%		
Inputs	Runoff	0.3	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**2726**	**cy**	
	73612	**cf**	1.69 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Bush Ranch

West Pond

Bush West Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	43.62	102.51	141.29	199.76
W2	16.66	39.79	54.49	77.12
Wout	31.99	76.88	103.29	146.70
Outfall	88.07	207.20	281.70	397.92

Developed Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	56.32	103.24	134.19	175.63
Pond W1	0.56	88.69	160.62	206.51
W2	38.03	71.26	90.76	121.50
Pond W2	22.93	95.12	165.75	256.04
Wout	46.96	86.60	111.30	110.49
Outfall	58.27	149.74	250.23	346.58
Pond W1 Elev	1117.8	1118.3	1118.5	1118.7
Pond W2 El	1106.4	1107.9	1108.4	1109.0

Required Water Quality Storage Pond W1 2.06 acft
Required Water Quality Storage Pond W2 0.37 acft

Total Pond Volume 6.55 acft

Pond W1

Maximum 100 Year Water Surface Elevation 1118.70'
3" Orifice @ 1112.00'
105' Wier @ 1118.00'
Water Quality Elevation 1117.12'
Top of Pond Elevation 1118.00'

Pond W2

Maximum 100 Year Water Surface Elevation 1109.00'
18" Orifice @ 1104.00'
10' Wier @ 1106.00'
25' Wier @ 1108.00'
Top of Pond Elevation 1110.00'

Bush Ranch

North Pond

Bush North Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
N1	42.69	104.24	141.52	200.62
N2	14.17	34.41	47.66	67.55
Nout	10.76	25.47	33.94	48.29
Outfall	63.01	151.82	208.90	295.95

Developed Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
N1	71.23	127.81	160.96	213.54
Pond N1	35.27	103.91	145.00	211.08
N2	24.92	50.52	66.12	89.31
Pond N2	23.05	115.28	177.07	273.68
Nout	15.34	31.04	39.71	54.32
Outfall	24.66	121.37	185.97	294.65
Pond N1 Elev	1093.6	1094.4	1094.8	1094.3
Pond N2 El	1081.2	1082.2	1082.4	1082.9

Required Water Quality Storage 1.69 acft

Total Pond Volume 8.13 acft

Pond N1

Maximum 100 Year Water Surface Elevation 1094.30'

3" Orifice @ 1088.00'

2" Orifice @ 1088.00'

20' Wier @ 1093.00'

Water Quality Elevation 1092.4'

Top of Pond Elevation 1094.00'

Pond N2

Maximum 100 Year Water Surface Elevation 1082.90'

18" Orifice @ 1078.00'

20' Wier @ 1081.00'

40' Wier @ 1082.00'

Top of Pond Elevation 1084.00'

ATTACHMENT N – Inspection, Maintenance, Repair and Retrofit Plan

The proposed extended detention water quality ponds and grassy swale shall be maintained in accordance with TCEQ publication RG-348, the Edwards Aquifer Technical Guidance Manual. Maintenance of full sedimentation basins for the residential development shall be by 290 East Bush, Inc. 290 East Bush, Inc. shall be responsible for following the management practices in the maintenance plans detailed below.

RG-348 Section 3.5.6 Extended Detention Basins

Extended detention basins have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and nonroutine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

There are many factors that may affect the basin's operation and that should be periodically checked. These factors can include mowing, control of pond vegetation, removal of accumulated bottom sediments, removal of debris from all inflow and outflow structures, unclogging of orifice perforations, and the upkeep of all physical structures that are within the detention pond area. One should conduct periodic inspections and after each significant storm. Remove floatables and correct erosion problems in the pond slopes and bottom. Pay particular attention to the outlet control perforations for signs of clogging. If the orifices are clogged, remove sediment and other debris. The generic aspects that must be considered in the maintenance plan for a detention facility are as follows:

• *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 times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately.

• *Mowing.* The upper stage, side slopes, embankment, and emergency spillway of an extended 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 appeal 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 extended 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 pond 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. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired.

• *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.

• *Nuisance Control.* Standing water (not desired in a extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

• *Sediment Removal.* When properly designed, dry extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins (which have a permanent pool to conceal deposited sediments), sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also 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 lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

RG-348 Section 3.5.7 Grassy Swales

Maintenance for grassy swales is minimal and is largely aimed at keeping the grass cover dense and vigorous. Maintenance practices and schedules should be developed and included as part of the original plans to alleviate maintenance problems in the future. Recommended practices include (modified from Young et al., 1996):

• *Pest Management.* An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be

controlled with minimal or no use of insecticides and herbicides.

• *Seasonal Mowing and Lawn Care.* Lawn mowing should be performed routinely, as needed, throughout the growing season. Grass height should not exceed 18 inches. Grass cuttings should be collected and disposed of offsite, or a mulching mower can be used. Regular mowing should also include weed control practices; however, herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients.

• *Inspection.* Inspect swales at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The swale should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections should be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

• *Debris and Litter Removal.* Trash tends to accumulate in swale areas, particularly along highways. Any swale structures (i.e. check dams) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than two times per year (Urbonas et al., 1992).

• *Sediment Removal.* Sediment accumulating near culverts and in channels needs to be removed when they build up to 3 inches at any spot, or cover vegetation. Excess sediment should be removed by hand or with flat-bottomed shovels. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level with the bottom of the swale. Sediment removal should be performed periodically, as determined through inspection.

• *Grass Reseeding and Mulching.* A healthy dense grass should be maintained in the channel and side slopes. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during swale establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established.

• *Public Education.* Private homeowners are often responsible for roadside swale maintenance. Unfortunately, overzealous lawn care on the part of homeowners can present some problems. For example, mowing the swale too close to the ground, or excessive application of fertilizer and pesticides will all be detrimental to the performance of the swale. Pet waste can also be a problem in swales, and should be removed to avoid contamination from fecal coliform and other waste-associated

bacteria. The delegation of maintenance responsibilities to individual landowners is a cost benefit to the locality. However, localities should provide an active educational program to encourage the recommended practices.

I, Michael L. Schoenfeld as representative of 290 East Bush, Inc. have read and understand the above maintenance guidelines for the proposed extended detention water quality ponds and grassy swale, and further acknowledge the District's responsibility for meeting the requirements listed in the maintenance plan.

x Michael L. Schoenfeld Vice President
Title

CMA Engineering, Inc.

Robert P. Callegari, P.E.
Felix J. Manka, P.E.

March 6, 2006

Fax

Mr. Terry Web
Texas Commission on Environmental Quality
Region 11
1921 Cedar Bend, Suite 150
Austin, Texas 78758-5336

Re: Contributing Zone Permit Application
CMA Job No. 1250-001

Dear Mr. Webb:

In response to your second set of comments concerning this project, from an email dated March 1, 2006:

1) Provide tables showing volume/elevation for the extended detention ponds.

Elevation/Area/Volume tables are included in the original submittal in Attachment M – Design Calculations.

2) No more than 50% of the water quality volume should drain from the facility within the first 24 hours. Refer to page 3-39 in the 06/99 Technical Guidance Manual. Please provide additional information on sizing the outflow structures.

Rating tables for the outlet structures of all ponds are attached. For Pond W1, the 50% water quality volume is 0.66 acft, which is drained in 30 hours, and for Pond N1, the 50% water quality volume is 0.71 acft, which is drained in 30 hours.

3) The future commercial lots as well as other undeveloped areas to the west and northwest of the entrance road drain to the extended detention pond, but have no assumed impervious cover (IC). If development is assumed for these areas, then an IC for these areas must be included in the pond sizing. If these areas will be treated separately in the future, then they should be removed from the drainage area and sizing calculations.

The future commercial lots and future Phase 2 will both have detention and water quality features to handle development when a site plan is created. The 4 future commercial lots were not included in the 43.08 acres of WQ Drainage.
The section of Phase 2 (15.6 ac) that was included in the drainage area W1 has been taken out and calculations have been revised and are attached.

Revise - W1 again - wrong runoff depth calculated appears to be 0.467 inches

W2A should be runoff depth of 1 inch

14101 West Highway 290, Bldg. 600
Phone: (512)894-3230

Austin, Texas 78737
Fax (512)894-3225

4) Instead of assuming 2,500 ft2 of impervious cover per lot for Drainage Area W2, a minimum of 3,000 ft2 per lot should be assumed. The load calculations should be re-calculated using 3,000 ft2 per lot for Drainage Area 2.

The assumed impervious cover for all drainage areas has been changed to 3,000 per lot and calculations have been revised and are attached.

5) Even though the extended detention ponds may have been oversized, it appears the ponds will not treat the equivalent load from Drainage Area W2. Assuming F = 1, an extended detention basin removes 75% of the post development load which would be 4,261 lbs for the West Pond Area 1 and 5,469 lbs for the North Pond Area for a total load removal of 9,730 lbs. The total load removal required for the site is 5,030 lbs (north) + 3,932 lbs (W1) + 2,972 lbs (W2) = 11,934 lbs, and this is without recalculating the load for W2 assuming 3000 ft2 IC per lot. Treatment is required for W2.

Revised impervious cover calculations and the addition of Storm System B discharge to Pond W2 have changed the load calculations for each area in the West System. Revised analysis is attached, along with a revision of the Storm System B Plan and Profile with discharge into Pond W2. Load and treatment calculations for the Grassy Swale for Storm System C are also attached.

Total System and Site summary table.

	Post Developed Load	Efficiency %	Potential Removal (lb/yr)	Required Removal (lb/yr)
Pond W1	5848	75%	4386	4287
Pond W2A	1203	75%	902	910
Channel	1094	70%	766	828
Subtotal			**6054**	**6025**
Pond N1 & N2	7518	75%	5638	5211

11,692 - 11,236
11,265

6) During the site assessment last Friday, there did not appear to be any natural grassy swales in the W2 area. If grassy swales are proposed to achieve load removal, calculations should be submitted. The swales would have to be designed and constructed accordingly.

There are no existing natural grassy swales on the site. A grass channel is proposed in the construction plans to carry flow from drainage areas 17, 18, 19, and 20. The west pond system is oversized to compensate for those areas, and the flow will be dually treated with the grass channel.

As discussed on Friday, March 3, 2006, the ownership of this project has been changed from the parent company of DH Investment Company and 194 Bush, Ltd. officially to 290 East Bush, Inc. Please let me know if you need any more information to make this change.

If you have any questions concerning this application please call myself or Felix J. Manka at 894-3230.

Sincerely,

Jacy Warwick, E.I.T.
Assistant Project Manager

Felix J. Manka, P.E.
Principal

STATE OF TEXAS
FELIX J. MANKA
66104
LICENSED
PROFESSIONAL ENGINEER

Attachments

Xc: Mike Schoenfeld, DH Investment Company

Bush Ranch

Pond Drainage Areas

Pond Drainage Area	WQ Drainage Area (sqft)	WQ Drainage Area (ac)	Lots	Impervious		Pervious	IC
				Lots (ac)	Roadway (ac)	(ac)	
West 1	1195442.5	27.44	64	4.71	3.12	19.61	0.29
West 2A	160988.66	3.70	13	0.90	0.62	2.18	0.41
West 2B	179463.45	4.12	10	0.69	1.04	2.39	0.42
North	2453729.2	56.33	129	7.40	2.58	46.34	0.18

7.83IC + 19.61P = 27.44
1.52IC + 2.18P = 3.7
1.73IC + 2.39P = 4.12
9.98IC + 46.34P = 56.32

21.06 70.52 91.58

23%

Notes:
1. DA 'Q' Assummed 50% Impervious, Assume treatment will be w/ Vegetative Strips
2. Assummed 3000 sf impervious per lot (TCEQ RG-349)

Lots	Lot	Condo 1	Condo 5	Condo 7	Condo 8	Total Pad Area	Roadway	Amenity Center /Commercial (ac)	Total IC	
West 1	26	10	8	20	0	170018.98	135990.94	0.81	341293.5	7.84
West 2A	13	0	0	0	0	39000	27143.95		66143.95	1.52
West 2B	10	0	0	0	0	30000	45163.24		75163.24	1.73
North	30	8	42	46	3	322458.76	112583.5		435042.3	9.99
	79	18	50	66	3	561477.74	320881.63			
										7.37

Condos Type	Quantity	Area Each (sf)
1	18	2051
5	50	2635
7	66	2522
8	3	2293

Bush Ranch Water Quality
TSS Removal Summary

	Post Developed Load	Efficiency %	Potential Removal	Required Removal	
Pond W1	5848	75%	4386	4287	
Pond W2A	1203	75%	902	910	
Channel	1094	70%	766	828	
Subtotal			**6054**	**6025**	lb/yr
Pond N1 & N2	7518	75%	5638	5211	
Total			**11692**	**11236**	lb/yr

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 1
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	27.44	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	489	lb/year	annual pollutant load

Post Development Load

Inputs	A	27.44	acres	
	P	33	inches	
	IC	28.5	% = 7.82 ac	
Output	Rv	0.17		
	Load	5848	lb/year	4385.64 = 75%

Required Reduction	(80%)	4287	lb/year	

Capture Volume

Inputs	Li	5848	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	4287	lb	
Output	F	98%		
		0.497 in		
Inputs	Runoff	~~0.25~~	in	(TNRCC Manual Figure 3.8)

$\frac{.497}{12} \times 27.44 \times \frac{1.2}{43560} = 1.36$ acre ft

Required Water Quality Volume	**1107 cy**	
	29886 cf	0.69 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

4287 W1
902 W2

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 2A
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	3.70	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	66	lb/year	annual pollutant load

Post Development Load

Inputs	A	3.70	acres	
	P	33	inches	
	IC	41.1	%	
Output	Rv	0.26		
	Load	1203	lb/year	902.46

Required Reduction	(80%)	910	lb/year

Capture Volume

Inputs	Li	1203	lb
	Fraction	100%	
	TSS R	75%	75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	910	lb
Output	F	101%	
Inputs	Runoff	0.25	in (TNRCC Manual Figure 3.8)

wrong runoff depth should be 1 inch

x1.2

$\frac{1}{12} \times 3.7 = 0.37$ acre ft

Required Water Quality Volume	**149 cy**	
	4025 cf	0.09 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Actual Load Removed = 1203 x 0.75 = 902 lbs

Grassy Swale Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Grassy Swale
Background Load (Predevelopment)

	Inputs	P	33	inches	average precipitation
		Au	3.28	acres	undeveloped contributing drainage area
		Ad	0	acres	developed contributing drainage area
		IC	0.00	%	impervious cover
	Output	Rv	0.03		runoff coefficient
		Load	58	lb/year	annual pollutant load

Post Development Load

	Inputs	A	3.28	acres	
		P	33	inches	
		IC	41.9	%	
	Output	Rv	0.26		
		Load	1094	lb/year	765.63

Required Reduction (80%) 828 lb/year

Swale 1 (SS C)

Flow Q=CIA

C	0.62		
I	1	in/hr	
A	171,637	sqft	
	3.94	acres	
Q	**2.46**	cfs	

Width Q=1.49/n*A*R2/3*s.5

			trapezoidal	
			bottom W	2
A req	**3.37**	sqft	side	3/1
Wetted P	**6.92**		top W	**6.67**
R	**0.49**	ft	depth	0.78
S	0.03			
n	0.20			
			Q	**2.46**

Velocity Q=V/A less than 1

V	0.73	ft/s

Length L=V*540 (9 min)

		L Provided	415.5
L req	**393.68**	**lf**	

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch North Pond
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	56.33	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	1004	lb/year	annual pollutant load

Post Development Load

Inputs	A	56.33	acres	
	P	33	inches	
	IC	17.7	%	
Output	Rv	0.11		
	Load	7518	lb/year	5638.25 = F=1 and RD of 0.353 inches
Required Reduction	(80%)	5211	lb/year	actual WQV should be $\frac{.353}{12} \times 56.33 \times 1.2$ = 1.989 acre ft

Capture Volume

Inputs	Li	7518	lb	
	Fraction	100%		
	TSS R	75%		89% for Sand Filters (TNRCC Manual Table 3.4)
	Lr	5211	lb	
Output	F	92%		100% → RD = 0.305
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**2272**	**cy**	
	61343	**cf**	1.41 acft

$\frac{.305}{12} \times 56.33 \times 1.2 = 1.72$ ac ft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Bush Ranch

West Pond

Bush West Ponds System

Undeveloped Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	43.62	102.51	141.29	199.76
W2	16.66	39.79	54.49	77.12
Wout	31.99	76.88	103.29	146.70
Outfall	88.07	207.20	281.70	397.92

Developed Flows (cfs)				
	2 Yr	10 Yr	25 Yr	100 Yr
W1	56.32	103.24	134.19	175.63
Pond W1	0.56	88.69	160.62	206.51
W2	38.03	71.26	90.76	121.50
Pond W2	22.93	95.12	165.75	256.04
Wout	46.96	86.60	111.30	110.49
Outfall	58.27	149.74	250.23	346.58
Pond W1 Elev	1117.8	1118.3	1118.5	1118.7
Pond W2 El	1106.4	1107.9	1108.4	1109.0

Required Water Quality Storage 0.69 acft

Total Pond Volume 6.55 acft = 285,318 ft²

Pond W1

Maximum 100 Year Water Surface Elevation 1118.70'

3" Orifice @ 1112.00'

105' Wier @ 1118.00'

Top of Pond Elevation 1118.00'

Pond W2

Maximum 100 Year Water Surface Elevation 1109.00'

18" Orifice @ 1104.00'

10' Wier @ 1106.00'

25' Wier @ 1108.00'

Top of Pond Elevation 1110.00'

Pond W1

West Ponds System

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW					
Qty: 1		Weir Eqn.		Weir Eqn.							
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5							
ORIFICE BOTTOM ELEV											
1112.00	**Orifice Dimensions**	**Weir Dimensions**		**Weir Dimensions**						**Increment**	**Cumulative**
ORIFICE CENTER ELEV	**Diam. (inches)**	**WEIR ELEV**	**L (ft)**	**WEIR ELEV**	**L (feet)**	**W.S. ELEV**	**FLOW**	**Volume**	**Volume**	**Drawdown**	**Drawdown**
1112.125	**3**	**1118.00**	**105**	**0.00**	**0**			acft	cf	hrs	hrs
WATER SURFACE ELEV	**FLOW (CFS)**										
1112.00	0.0000	1112.00	0.0000		0.0000	1112.00	0.00	0	0		
1113.00	0.2211	1113.00	0.0000		0.0000	1113.00	0.22	0.14247	6206	13.96	13.96
1114.00	0.3236	1114.00	0.0000		0.0000	1114.00	0.32	0.46	19895	14.71	28.67
1115.00	0.4007	1115.00	0.0000	1115.00	0.0000	1115.00	0.40	0.89705	39075.5	7.00	35.67
1115.50	0.4342	1115.50	0.0000	1115.50	0.0000	1115.50	0.43	1.138395	49588.5	7.06	42.73
1116.00	0.4653	1116.00	0.0000	1116.00	0.0000	1116.00	0.47	1.400924	61024.25	14.14	56.87
1117.00	0.5218	1117.00	0.0000	1117.00	0.0000	1117.00	0.52	1.977715	86149.25	13.88	70.75
1118.00	0.5729	1118.00	0.0000	1118.00	0.0000	1118.00	0.57	2.605745	113506.3		
1119.00	0.6197	1119.00	315.0000	1119.00	0.0000	1119.00	315.62				

30 hrs
28750 ft³

Pond W2

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW	
Qty: 1		Weir Eqn.		Weir Eqn.			
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5			
ORIFICE BOTTOM ELEV							
1104.00	**Orifice Dimensions**	**Weir Dimensions**		**Weir Dimensions**			
ORIFICE CENTER ELEV	**Diam. (inches)**	**WEIR ELEV**	**L (ft)**	**WEIR ELEV**	**L (feet)**	**W.S. ELEV**	**FLOW**
1104.750	**18**	**1106.00**	**10**	**1108.00**	**25**		
WATER SURFACE ELEV	**FLOW (CFS)**						
1104.00	0.0000	1104.00	0.0000		0.0000	1104.00	0.00
1105.00	4.2543	1105.00	0.0000		0.0000	1105.00	4.25
1106.00	9.5128	1106.00	0.0000		0.0000	1106.00	9.51
1107.00	12.7628	1107.00	30.0000	1107.00	0.0000	1107.00	42.76
1108.00	15.3389	1108.00	84.8528	1108.00	0.0000	1108.00	100.19
1109.00	17.5408	1109.00	155.8846	1109.00	75.0000	1109.00	248.43
1110.00	19.4955	1110.00	240.0000	1110.00	212.1320	1110.00	471.63

North Ponds System

Pond N1

ORIFICE #1		ORIFICE #1		WEIR #2		TOTAL FLOW					
Qty: 1		Qty: 1		Weir Eqn.							
Orifice Eqn. Q= 0.6A√2gh		Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5							
ORIFICE BOTTOM ELEV		ORIFICE BOTT									
1088.00	Orifice Dimensions	1088.00	ifice Dimensio		Weir Dimensions					Increment	Cumulative
ORIFICE CENTER ELEV	Diam. (inches)	ORIFICE CEN	Diam. (inches)	WEIR ELEV	L (ft)	W.S. ELEV	FLOW	Volume	Volume	Drawdown	Drawdown
1088.125	3	1088.000	0	1093.00	20			acft	cf	hrs	hrs
WATER SURFACE ELEV	FLOW (CFS)	WATER SURF	FLOW (CFS)								
1088.00	0.0000	1088.00	0.0000	1088.00	0.0000	1088.00	0.00	0	0		
1089.00	0.2211	1089.00	0.0000	1089.00	0.0000	1089.00	0.22	0.14247	6206	13.96	13.96
1090.00	0.3236	1090.00	0.0000	1090.00	0.0000	1090.00	0.32	0.46	19895	14.71	28.67
1091.00	0.4007	1091.00	0.0000	1091.00	0.0000	1091.00	0.40	0.89705	39075.5	6.74	35.42
1092.00	0.4653	1092.00	0.0000	1092.00	0.0000	1092.00	0.47	1.138395	49588.5	6.62	42.04
1092.50	0.4944	1092.50	0.0000	1092.50	0.0000	1092.50	0.49	1.400924	61024.25	13.74	55.77
1093.00	0.5218	1093.00	0.0000	1093.00	0.0000	1093.00	0.52	1.977715	86149.25	0.25	56.02
1094.00	0.5729	1094.00	0.0000	1094.00	60.0000	1094.00	60.57	2.605745	113506.3		
1095.00	0.6197	1095.00	0.0000	1095.00	169.7056	1095.00	170.33				

30 hr
30,927 ft³

Pond W2

ORIFICE #1		WEIR #2		WEIR #3		TOTAL FLOW	
Qty: 1		Weir Eqn.		Weir Eqn.			
Orifice Eqn. Q= 0.6A√2gh		Q= 3.0LH**1.5		Q= 3.0LH**1.5			
ORIFICE BOTTOM ELEV							
1078.00	Orifice Dimensions	Weir Dimensions		Weir Dimensions			
ORIFICE CENTER ELEV	Diam. (inches)	WEIR ELEV	L (ft)	WEIR ELEV	L (feet)	W.S. ELEV	FLOW
1078.750	18	1081.00	20	1082.00	40		
WATER SURFACE ELEV	FLOW (CFS)						
1078.00	0.0000	1078.00	0.0000	1078.00	0.0000	1078.00	0.00
1079.00	4.2543	1079.00	0.0000	1079.00	0.0000	1079.00	4.25
1080.00	9.5128	1080.00	0.0000	1080.00	0.0000	1080.00	9.51
1081.00	12.7628	1081.00	0.0000	1081.00	0.0000	1081.00	12.76
1082.00	15.3389	1082.00	60.0000	1082.00	0.0000	1082.00	75.34
1083.00	17.5408	1083.00	169.7056	1083.00	120.0000	1083.00	307.25
1084.00	19.4955	1084.00	311.7691	1084.00	339.4113	1084.00	670.68

CMA Engineering, Inc.

Robert P. Callegari, P.E.
Felix J. Manka, P.E.

February 21, 2006

Email

Mr. Terry Web
Texas Commission on Environmental Quality
Region 11
1921 Cedar Bend, Suite 150
Austin, Texas 78758-5336

Re: Contributing Zone Permit Application
CMA Job No. 1250-001

Dear Mr. Webb:

In response to your comments concerning this project, from an email dated Feb 16, 2006:

1) **What part of the 116.80 acres (from plat) is included in the 108.53 acres listed as the total site project in the CZP application? Are lots A1, E1, E2, E3, and E4 included? If not, and those lots are developed later, a CZP will be required then. Do those lots drain toward the water quality basin?**

Future commercial lots (Block E lots 1-4) are not included in this CZP. They do drain toward the water quality/detention ponds, but are not included in impervious cover calculations, and will be examined in a future Contributing Zone Permit. Lots 1 and 2 in Block A are included in this submittal.

2) **It appears that runoff from most of DEV #W2 (including drainage areas 14, 15, 17, 18, 19, and 20) is not treated. Grassy swales or some other treatment is recommended for that area.**

Drainage areas 17-20 are discharged into a grassy swale and conveyed to the natural discharge point of the site. Drainage areas 14-16 do not reach the water quality pond, however the pond was sized to overcompensate for those areas, per conversation with Heather Beaty at TCEQ in November 2005.

3) **Is the runoff from the entry road to the subdivision draining to the WQ pond?**

The runoff from the entry way flows down Ledge Stone Drive into the low-point inlets A1 and A2 shown on the Drainage Plan. The flow then enters the culvert and drains down natural channels into the Water Quality/Detention Pond.

14101 West Highway 290, Bldg. 600
Phone: (512)894-3230

Austin, Texas 78737
Fax (512)894-3225

4) **How were the percentages of impervious cover used in the Water Quality Volume Calculations (West Pond Area 1 = 17.5%, West Pond Area 2 = 48.1%, and North Pond Area = 17.1%) calculated?**

Please see attached spreadsheet for Water Quality Impervious Cover calculations.

5) **In the WQ Volume calculations, 33" was used for average precipitation in the pre-development and 32" was used in the post-development.**

The average yearly rainfall for Hays County is 33", which should have been used for both pre and post developed. Revised Water Quality Volume Calculation worksheets are attached and the difference is negligible, with required volumes remaining the same for all ponds.

If you have any questions concerning this application please call myself or Felix J. Manka at 894-3230.

Sincerely,

Jacy Warwick, E.I.T.
Assistant Project Manager

Felix J. Manka, P.E.
Principal

Attachments

Xc: Mike Schoenfeld, DH Investment Company

14 1.16 A
15 0.25 A
16 1.87 A
3.28

17 1.19
18 0.30
19 1.87
20 0.58
3.94

Bush Ranch

Pond Drainage Areas

Pond Drainage Area	WQ Drainage Area (sqft)	WQ Drainage Area (ac)	Lots	Impervious		Pervious	IC
				Lots (ac)	Roadway (ac)	(ac)	
West 1	1876471.8	43.08	64	4.41	3.12	35.54	0.17
West 2	425433.17	9.77	54	3.10	1.60	5.07	0.48
North	2453729.2	56.33	129	7.06	2.58	46.69	0.17

7.53+4.7

Notes:
1. DA 'Q' Assummed 50% Impervious, Assume treatment will be w/ Vegetative Strips
2. Assummed 2500 sf impervious per lot (TCEQ Appendix RG-348a, Table 4-1)

Lots	Lot	Condo 1	Condo 5	Condo 7	Condo 8	Total Pad Area	Roadway	Amenity Center (ac)	Total IC	
West 1	26	10	8	20	0	157018.98	135990.94	0.81	328293.5	7.54
West 2	54	0	0	0	0	135000	69719.57			
North	30	8	42	46	3	307458.76	112583.5		420042.3	9.64
	110	18	50	66	3	599477.74	318294.01			
							7.31			

Condos Type	Quantity	Area Each (sf)
1	18	2051
5	50	2635
7	66	2522
8	3	2293

110
137

Condos 137

West 1 $\frac{4.41(a) \times 43560}{64} = 3000\,sf/lot$

45 West 2 $\frac{3.1(a) \times 43560}{54} = 2500\,sf/lot$ → FOR 3000 sq ft/lot = 3.72(a) IC
(1.60(a))
5.32(a) IC
9.77 DA
IC % = 54.5%

North $\frac{7.06 \times 43560}{129} = 2384\,sf/lot$

65 x 120 = 7800

West 1 Pond includes future areas and no assumed impervious cover

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch North Pond
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	56.33	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	1004	lb/year	annual pollutant load

Post Development Load

Inputs	A	56.33	acres	
	P	33	inches	
	IC	17.1	%	
Output	Rv	0.10		
	Load	7292	lb/year	

Required Reduction	(80%)	5030	lb/year

Capture Volume

Inputs	Li	7292	lb	
	Fraction	100%		
	TSS R	75%		89% for Sand Filters (TNRCC Manual Table 3.4)
	Lr	5030	lb	
Output	F	92%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**2272**	**cy**	
	61343	**cf**	1.41 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 1
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	43.08	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	768	lb/year	annual pollutant load

Post Development Load

Inputs	A	43.08	acres	
	P	33	inches	
	IC	17.5	%	
Output	Rv	0.10		
	Load	5682	lb/year	F=1, 0.75 x 5682 = 4261 lbs remove

Required Reduction	(80%)	3932	lb/year

Capture Volume

Inputs	Li	5682	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	3932	lb	
Output	F	92%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**1737**	**cy**	
	46912	**cf**	1.08 acft

* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

If W_2 is included, $A_u = 43.08 + 9.77 = 52.85$
Background Load = 942 lbs/yr

$W_p = 7.53/12.23 = .615$
$W_2 = 4.7$
By Area $\frac{43.08}{52.85} = .815$

$A_D = 52.85$
$P = 33$
$I C = \frac{12.23}{52.85} = .23$
$R_V = 0.134$
$L = 52.85 \times 33 \times 0.134 \times 38.4 = 8974.18$
Reqd Removal $= (8974 - 942) \times 0.8 = 6425.6$
$F = \frac{L_R}{L_I} \Big/ 0.75 = \frac{6426}{8974} \times 0.75 = 0.9547$
$F = \frac{.9547}{.815} = 1.17$
$F = \frac{.9547}{.615} = 1.55$

Water Quality Volume Calculations (TNRCC RG-348 Section 3.3)

Bush Ranch West Pond Area 2
Background Load (Predevelopment)

Inputs	P	33	inches	average precipitation
	Au	9.77	acres	undeveloped contributing drainage area
	Ad	0	acres	developed contributing drainage area
	IC	0.00	%	impervious cover
Output	Rv	0.03		runoff coefficient
	Load	174	lb/year	annual pollutant load

Post Development Load

Inputs	A	9.77	acres	
	P	33	inches	
	IC	48.1	%	
Output	Rv	0.31		
	Load	3889	lb/year	

Required Reduction	(80%)	2972	lb/year

Capture Volume

Inputs	Li	3889	lb	
	Fraction	100%		
	TSS R	75%		75% for Extended Detention (TNRCC Manual Table 3.4)
	Lr	2972	lb	
Output	F	102%		
Inputs	Runoff	0.25	in	(TNRCC Manual Figure 3.8)

Required Water Quality Volume	**394**	**cy**		Total West WQ Pond Volume
	10636	**cf**	0.24 acft	1.32

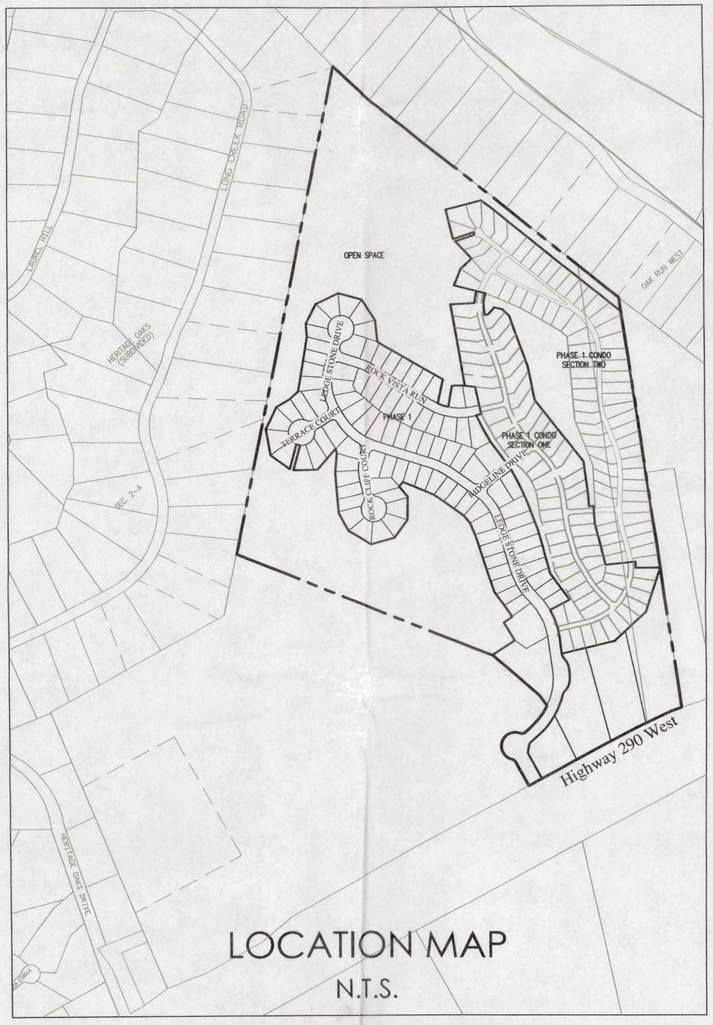
* The Required WQV includes 20% increase to accommodate reductions in available storage volume due to deposition of solids.

Load Removed assuming F=1
is West Pond area 1 = 4261
North Pond area = 5469
9730 lbs

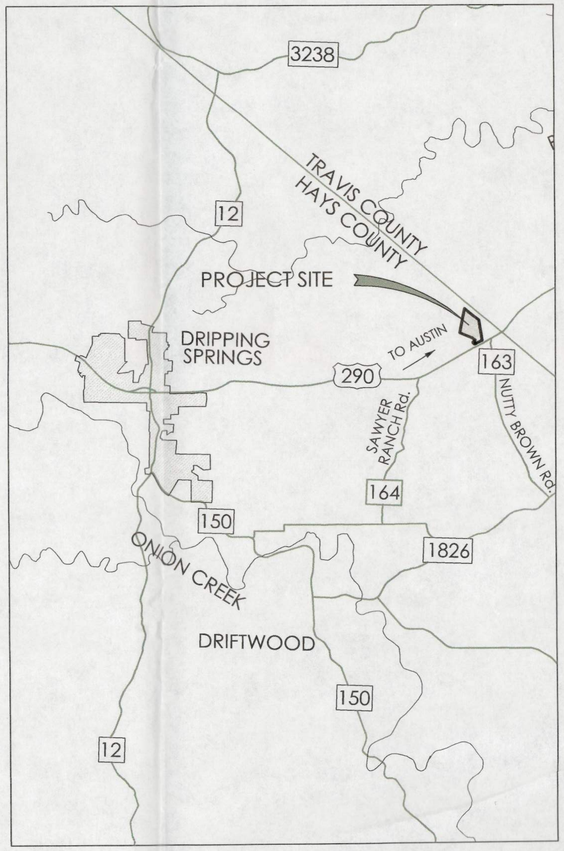
Actual Reqd Red = 2972 + 3932 + 5030 = 11,934

Assuming F=1 To treat WPond 2 = 11,934 - 9730 = 2204
for WPI & N

PLANS FOR CONTRIBUTING ZONE PERMIT
FOR
LEDGE STONE SUBDIVISION, PHASE 1
HAYS COUNTY, TEXAS



LOCATION MAP
N.T.S.



VICINITY MAP
N.T.S.

PREPARED BY:

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

PREPARED BY:

STATE OF TEXAS
FELIX J. MANKA
66104
LICENSED PROFESSIONAL ENGINEER

Felix J. Manka
FELIX J. MANKA, PE #66104

11-18-05
DATE

SHEET NO.	SHEET DESCRIPTION
1	COVER SHEET
2	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
3	EROSION AND SEDIMENTATION CONTROL PLANS
4	DRAINAGE PLAN AND CALCULATIONS
5	WEST WATER QUALITY/DETENTION POND SYSTEM
6	WEST POND DETAILS AND CROSS SECTIONS
7	NORTH WATER QUALITY/DETENTION POND SYSTEM
8	NORTH POND DETAILS AND CROSS SECTIONS
9	DETAILS

NO.	DESCRIPTION	INITIALS	DATE

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
COVER SHEET

DESIGNED:	JW
DRAWN BY:	JW/MK
APPROVED:	FJM
FILE:	1250-C01-CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

GENERAL NOTES:

THE CONTRACTOR SHALL COMPLY WITH ALL OF THE REQUIREMENTS SET FORTH IN THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (TCEQ) "TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM" (TPDES). INFORMATION ON THE TPDES CONSTRUCTION GENERAL PERMITS MAY BE OBTAINED BY CONTACTING THE TCEQ AT 512-339-2929. INFORMATION IS ALSO AVAILABLE THROUGH TCEQ WEB SITE AT "www.tnrcc.state.tx.us/waterperm/wwperm/construct.html". DISCLAIMER: INFORMATION CONTAINED IN THIS PARAGRAPH IS BASED UPON THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY FORMS AND DOCUMENTATION AND COMPLY WITH THE PROVISIONS OF THE TPDES.

THE CONTRACTOR WILL BE REQUIRED TO FOLLOW BEST MANAGEMENT PRACTICES AND TO USE AND MAINTAIN SEDIMENTATION AND WATER POLLUTION CONTROL DEVICES AS REQUIRED.

THE CONTRACTOR SHALL PROVIDE THE OWNER 48 HOURS NOTICE PRIOR TO DISTURBING ANY VEGETATION OR BEGINNING ANY SITE PREPARATION IN ADVANCE OF THE EARTHWORK OPERATION. THE 48 HOUR NOTICE PROVIDES THE OWNER THE REQUIRED TIME TO FILE AND POST THE "NOTICE OF INTENT" (NOI) WITH THE TCEQ.

THE CONTRACTOR SHALL NOT RECEIVE FINAL PAYMENT FOR THE PROJECT UNTIL THE UNPAVED AREAS HAVE ACHIEVED 70% VEGETATIVE COVER WITH PERMANENT GRASSES, AND THE OWNER HAS FILED THE "NOTICE OF TERMINATION" (NOT) WITH THE TCEQ.

IN AREAS THAT HAVE ACHIEVED 70% VEGETATIVE COVER (WHEN COMPARED TO THE SURROUNDING, UNDISTURBED, VEGETATIVE COVER), THE CONTRACTOR MAY REMOVE AND REUSE ANY TEMPORARY EROSION CONTROL DEVICES (THAT ARE IN REASONABLE CONDITION) ON OTHER LOCATIONS IN THE DEVELOPMENT. ADDITIONAL SEEDING MAY BE REQUIRED TO VEGETATE THE AREAS WHERE THE STRUCTURAL CONTROLS WERE REMOVED.

PRIOR TO ACCEPTANCE AND FINAL PAYMENT, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO CONSTRUCTION IN ANY AREA, OR AS SOON AS PRACTICAL.

THE CONTRACTOR SHALL PROVIDE FOR ALL INTERIM DRAINAGE ON THE PROJECT. THE INTERIM DRAINAGE SHALL ENSURE THAT ALL RUNOFF IS CHANNELED TO THE TEMPORARY CONTROL DEVICES.

THE CONTRACTOR SHALL TAKE THE STEPS NECESSARY TO ENSURE THAT ALL CONSTRUCTION TRAFFIC LEAVING THE PROJECT SHALL NOT TRACK MUD OR OTHER DEBRIS ONTO ANY ROADWAY, PUBLIC STREET OR ANY ROADWAY WITHIN THE DEVELOPMENT. SHOULD MUD OR OTHER DEBRIS BE TRACKED ONTO ANY ROADWAY, THE CONTRACTOR SHALL TAKE IMMEDIATE STEPS TO REMOVE IT TO THE SATISFACTION OF THE OWNER AND/OR ANY REGULATORY AUTHORITY.

TEMPORARY CONSTRUCTION ENTRANCES SHALL BE UTILIZED WHERE NECESSARY.

SPRINKLING OF ROADWAYS SHALL BE REQUIRED TO CONTROL DUST.

THE CONTRACTOR SHALL MODIFY, AS NECESSARY, ANY TEMPORARY EROSION CONTROL DEVICES SO THAT THEY SERVE THEIR INTENDED PURPOSE.

THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION DEVICES TO A CONDITION SIMILAR TO THAT OF WHEN IT WAS ORIGINALLY INSTALLED.

THE CONTRACTOR SHALL KEEP ALL TEMPORARY EROSION CONTROL DEVICES FREE OF SILT AND/OR ANY OTHER MATERIAL THAT MAY ACCUMULATE. REMOVAL SHALL OCCUR AS SOON AS PRACTICAL AFTER A RAINFALL. IN NO INSTANCE SHALL SILT BE PERMITTED TO ACCUMULATE TO A DEPTH ABOVE, OR IN EXCESS OF 50% OF THE DESIGN CAPACITY OF THE DEVICE.

AS REQUIRED BY THE OWNER, THE CONTRACTOR SHALL ACCOMPANY THE OWNER DURING THE INSPECTION OF THE EROSION CONTROL DEVICES TO DISCUSS MODIFICATIONS TO ENSURE THE DEVICES SERVE THEIR INTENDED PURPOSE.

THE CONTRACTOR SHALL PROTECT ALL AREAS (TREES AND MATURE VEGETATION), WHETHER WITHIN OR OUTSIDE OF THE ACTUAL LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION AS GOOD AS, OR BETTER THAN, THAT PRESENT PRIOR TO THE CONSTRUCTION.

ALL CONSTRUCTION AND CONSTRUCTION EQUIPMENT SHALL REMAIN WITHIN THE ESTABLISHED STREET RIGHT OF WAY AND DRAINAGE EASEMENTS UNLESS THE OWNER HAS GRANTED PRIOR AUTHORIZATION.

IN THE EVENT THE CONTRACTOR ESTABLISHES A YARD ON THE PROJECT, HE SHALL BE RESPONSIBLE FOR ESTABLISHING HIS OWN STORM WATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REQUIREMENTS THEREOF.

THE CONTRACTOR SHALL KEEP THE DEVELOPMENT FREE FROM LITTER.

TEMPORARY AND PERMANENT EROSION CONTROL AND SEDIMENTATION CONTROL NOTES
PERMANENT EROSION AND SEDIMENTATION CONTROL

1. ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW (FOR SPECIFICS REFERENCE CITY OF AUSTIN STANDARD SPECIFICATIONS – SERIES 600, ENVIRONMENTAL ENHANCEMENT). A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ALL DISTURBED AREAS (EXCEPT ROCK) BETWEEN THE CURB AND THE R.O.W.

THE CONTRACTOR SHALL HYDROMULCH OR SOD ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION, EXCEPT WHERE CUTS ARE MADE IN SOLID ROCK. THE SEEDING OR EROSION CONTROL SHALL BE APPLIED AT THE SPECIFIC RATE OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS UNLESS AN ALTERNATIVE SEED MIX IS APPROVED BY THE OWNER:

FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF 1 POUND PER 1000 SQUARE FEET OF UNHULLED BERMUDA AND 1 POUND PER 1000 SQUARE FEET OF WINTER RYE WITH A PURITY OF 95% GERMINATION.

FROM MARCH 1 TO SEPTEMBER 15, SEEDING SHALL BE WITH HULLED BERMUDA GRASS (CYNODEN DACTOLYN) AT A RATE OF 1 POUND PER 1000 SQUARE FEET WITH A PURITY OF 95% WITH 85% GERMINATION.

FERTILIZER SHALL HAVE AN ANALYSIS OF 15-15-15 AND SHALL BE APPLIED AT A RATE OF 1 LB. PER 1000 SQUARE FEET. MULCH TYPE TO BE STRAW OR HAY APPLIED AT A RATE OF 500 POUNDS PER ACRE. RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS REACHED A HEIGHT OF AT LEAST 1-1/2" (95%) COVERAGE AND NO BARE SPOTS LARGER THEN 16 SQUARE FEET EXIST.

2. THE SEEDED OR PLANTED AREA IS TO BE IRRIGATED OR SPRINKLED IN A MANNER WHICH WILL NOT ERODE THE TOPSOIL BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT TEN DAY INTERVALS FOR THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF AT LEAST 1/2 INCH SHALL POSTPONE THE WATERING OPERATIONS FOR ONE WEEK.

3. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH SECTION 604.6 (NATIVE GRASS SEEDING) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS – SERIES 600, ENVIRONMENTAL ENHANCEMENT.

SITE DESCRIPTION

A) THE PROJECT SHALL CONSIST OF THE CONSTRUCTION OF PAVING AREAS, DRAINAGE, AND UTILITY IMPROVEMENTS.

B) SEQUENCE OF MAJOR ACTIVITIES:
1. INSTALLATION OF EROSION/ SEDIMENTATION CONTROLS.
2. INITIAL GRADE TO ACHIEVE GENERAL SHAPE OF ACCESS ROAD.
3. INSTALLATION OF UNDERGROUND UTILITIES.
4. CONSTRUCTION OF ACCESS ROAD.
5. CONSTRUCTION OF WATER QUALITY PONDS.
6. CONSTRUCTION OF LIFT STATION.
7. CONSTRUCTION OF WWTP SITE. (WWTP, EFF. TANK, & BUILDING)
8. CLEANING OF TREES AND ROCKS IN IRRIGATION AREA.
9. PLACEMENT OF SOILS IN DRIP IRRIGATION AREA.
10. INSTALLATION OF DRIP IRRIGATION LINES.
11. CONSTRUCTION OF PAVED AREAS.
12. REVEGETATION OF DISTURBED AREAS.
13. REMOVAL AND PROPER DISPOSAL OF EROSION/SEDIMENTATION CONTROLS ONCE PERMANENT VEGETATION IS ESTABLISHED

C) ESTIMATE OF SITE AREA:
TOTAL SIZE: 108.53 ACRES
TOTAL DISTURBED AREA: 101.46 ACRES

D) ESTIMATED RUNOFF COEFFICIENTS FOR THE 100 YEAR STORM AND DESCRIPTION OF RUNOFF:
SEE DRAINAGE PLAN AND CALCULATIONS SHEETS OF THESE CONSTRUCTION PLANS.

THE SOIL IS BRACKETT– COMFORT– REAL: SHALLOW, UNDULATING TO STEEP SOILS OVER LIMESTONE OR STRONGLY CEMENTED CHALK.

E) LOCATION MAP (COVER SHEET)

F) THERE IS NO INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION ACTIVITIES

G) RECEIVING WATERS:
RUNOFF FROM THE SITE DISCHARGES TO AN UNNAMED CREEK, WHICH FLOWS TO LONG BRANCH A TRIBUTARY OF BARTON CREEK, WHICH DISCHARGES TO THE COLORADO RIVER, FLOWING TO THE GULF OF MEXICO.
NOTE:
DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN FOURTEEN (14) DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME AND DO SO WITHIN TWENTY –ONE (21) DAYS THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.

REQUIREMENTS

THE FOLLOWING RECORDS SHALL BE KEPT BY THE CONTRACTOR, WITH THE SWPPP:
–DATES WHEN MAJOR GRADING ACTIVITIES OCCUR
–DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY CEASE
–DATES WHEN CONSTRUCTION ACTIVITIES PERMANENTLY CEASE
–DATES WHEN STABILIZATION MEASURES ARE INITIATED

THE SWPPP SHALL BE AMENDED WHEN:
–THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE SYSTEM OR SITE
–INSPECTIONS INDICATE THE PLAN IS NOT MEETING THE DESIRED OBJECTIVES

THE OWNER/OPERATOR SHALL POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION:
–TPDES PERMIT NUMBER OR A COPY OF THE NOI IF THE PERMIT NUMBER HAS NOT YET BEEN ASSIGNED
–THE NAME AND TELEPHONE NUMBER OF A LOCAL CONTACT PERSON
–A BRIEF DESCRIPTION OF THE PROJECT
–THE LOCATION OF THE SWPPP

TCEQ CONTRIBUTING ZONE PLAN GENERAL NOTES:

1. WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TNRCC REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR WITH THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TNRCC LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

3. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM MAY BE INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL.

4. PRIOR TO COMMENCING CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARD AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

5. 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).

6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

7. 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).

8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE AND STORED ON-SITE MUST HAVE PROPER E&S CONTROLS INSTALLED.

9. 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.

10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TNRCC 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.

11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE 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 BEST MANAGEMENT PRACTICES OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR

D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS UNDEVELOPED.

STRUCTURAL PRACTICES

X	SILT FENCES
	HAY BALES
X	ROCK BERMS
	DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
	DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
	DIVERSION DIKE AND SWALE COMBINATION
	BRUSH BERMS
	CONCRETE FLUMES
X	STABILIZED (ROCK) CONSTRUCTION ENTRANCES
	SEDIMENT TRAPS
X	SEDIMENT BASINS
	STONE OUTLET STRUCTURES CURB AND GUTTERS
X	STORM SEWERS
X	VELOCITY CONTROL DEVICES

STABILIZATION PRACTICES

X	TEMPORARY VEGETATION
X	PERMANENT VEGETATION
	CELLULOSE FIBER MULCHING
	VEGETATIVE BUFFER STRIPS
X	PROTECTION OF TREES
	PROTECTION OF MATURE VEGETATION
	GEOTEXTILES
	SOD STABILIZATION

NOTES:

–MEASURES WILL BE REVISED AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE PROJECT SITE
–ANY SEDIMENT THAT ESCAPES THE SITE WILL BE REMOVED IMMEDIATELY AND CORRECTIVE ACTION TAKEN TO PREVENT ITS RECURRENCE
–LITTER AND OTHER DEBRIS WILL BE COLLECTED FROM THE SITE ROUTINELY
–ALL ON-SITE AND OFF-SITE MATERIAL STORAGE AREAS SHALL BE PROTECTED

INSPECTIONS

QUALIFIED PERSONNEL SHALL INSPECT DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED, STORAGE AREAS, STRUCTURAL CONTROLS, AND AREAS WHERE CONSTRUCTION AND OTHER VEHICLES LEAVE THE SITE AT LEAST ONCE EVERY FOURTEEN (14) DAYS AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM EVENT OF ½ INCHES OR GREATER.

DISTURBED AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR POTENTIAL FOR, SEDIMENT ENTERING THE DRAINAGE SYSTEM.

AFTER THE INSPECTIONS, THE SWPPP SHALL BE MODIFIED AS NECESSARY TO INCLUDE ADDITIONAL BMP'S (BEST MANAGEMENT PRACTICES) DESIGNED TO CORRECT DEFICIENCIES IDENTIFIED.

REVISIONS (MODIFICATIONS) SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE INSPECTION, IF POSSIBLE IMPLEMENT BEFORE NEXT STORM EVENT.

IF EXISTING BMP'S NEED TO BE MODIFIED OR ADDITIONAL BMP'S ARE REQUIRED, IMPLEMENTATIONS SHALL BE COMPLETED PRIOR TO THE NEXT ANTICIPATED STORM EVENT OR AS SOON AS PRACTICAL.

A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWPPP SHALL BE MADE AND RETAINED AS PART OF THE SWPPP FOR AT LEAST THREE (3) YEARS FROM THE DATE THE "NOTICE OF TERMINATION" (NOT) IS SUBMITTED.

THE OBSERVATIONS SHOULD INCLUDE:
–SEDIMENT DISCHARGES FROM THE SITE
–LOCATION OF BMP'S THAT SHOULD BE MAINTAINED
–LOCATION OF BMP'S THAT WERE INADEQUATE
–LOCATION WHERE ADDITIONAL BMP'S SHALL BE INSTALLED

WHERE AN INSPECTION DOES NOT INDICATE THAT MODIFICATIONS TO EXISTING BMP'S ARE NECESSARY OR ADDITIONAL BMP'S ARE REQUIRED, A REPORT SHALL BE PREPARED WITH A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPPP AND THE TPDES PERMIT.

STANDARD PERMIT CONDITIONS

1. THE PERMITTEE HAS A DUTY TO COMPLY WITH ALL PERMIT CONDITIONS. FAILURE TO COMPLY WITH ANY PERMIT CONDITION IS A VIOLATION OF THE PERMIT AND STATUTES UNDER WHICH IT WAS ISSUED, AND IS GROUNDS FOR ENFORCEMENT ACTION, FOR TERMINATING COVERAGE UNDER THIS GENERAL PERMIT, OR FOR REQUIRING A DISCHARGER TO APPLY FOR AND OBTAIN AN INDIVIDUAL TPDES PERMIT.

2. AUTHORIZATION UNDER THIS GENERAL PERMIT MAY BE SUSPENDED OR REVOKED FOR CAUSE. FILING A NOTICE OF PLANNED CHANGES OR ANTICIPATED NON-COMPLIANCE BY THE PERMITTEE DOES NOT STAY ANY PERMIT CONDITION. THE PERMITTEE MUST FURNISH TO THE EXECUTIVE DIRECTOR, UPON REQUEST AND WITHIN A REASONABLE TIME, ANY INFORMATION NECESSARY FOR THE EXECUTIVE DIRECTOR TO DETERMINE WHETHER CAUSE EXISTS FOR REVOKING, SUSPENDING, OR TERMINATING AUTHORIZATION UNDER THIS PERMIT. ADDITIONALLY, THE PERMITTEE MUST PROVIDE TO THE EXECUTIVE DIRECTOR, UPON REQUEST, COPIES OF ALL RECORDS THAT THE PERMITTEE IS REQUIRED TO MAINTAIN AS A CONDITION OF THIS GENERAL PERMIT.

3. IT IS NOT A DEFENSE FOR A DISCHARGER IN AN ENFORCEMENT ACTION THAT IT WOULD HAVE BEEN NECESSARY TO HALT OR REDUCE THE PERMITTED ACTIVITY TO MAINTAIN COMPLIANCE WITH THE PERMIT CONDITIONS.

4. INSPECTION AND ENTRY SHALL BE ALLOWED UNDER TEXAS WATER CODE CHAPTERS 26-28, HEALTH AND SAFETY CODE §§ 361.032-361.033 AND 361.037, AND 40 CODE OF FEDERAL REGULATIONS (CFR) § 122.41(i). THE STATEMENT IN TEXAS WATER CODE § 26.014 THAT COMMISSION ENTRY OF A FACILITY SHALL OCCUR ACCORDING TO AN ESTABLISHMENT'S RULES AND REGULATIONS CONCERNING SAFETY, INTERNAL SECURITY, AND FIRE PROTECTION IS NOT GROUNDS FOR DENIAL OR RESTRICTION OF ENTRY TO ANY PART OF THE FACILITY OR SITE, BUT MERELY DESCRIBES THE COMMISSION'S DUTY TO OBSERVE APPROPRIATE RULES AND REGULATIONS DURING AN INSPECTION.

5. THE DISCHARGER IS SUBJECT TO ADMINISTRATIVE, CIVIL, AND CRIMINAL PENALTIES, AS APPLICABLE, UNDER TEXAS WATER CODE §§ 26.136, 26.212, AND 26.213 FOR VIOLATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

a. NEGLIGENTLY OR KNOWINGLY VIOLATING CWA, §§ 301, 302, 306, 307, 308, 318, OR 405, OR ANY CONDITION OR LIMITATION IMPLEMENTING ANY SECTIONS IN A PERMIT ISSUED UNDER CWA § 402, OR ANY REQUIREMENT IMPOSED IN A PRETREATMENT PROGRAM APPROVED UNDER CWA, §§ 402(a)(3) OR 402(b)(8);

b. KNOWINGLY MAKING ANY FALSE STATEMENT, REPRESENTATION, OR CERTIFICATION IN ANY RECORD OR OTHER DOCUMENT SUBMITTED OR REQUIRED TO BE MAINTAINED UNDER A PERMIT, INCLUDING MONITORING REPORTS OR REPORTS OF COMPLIANCE OR NONCOMPLIANCE.

6. ALL REPORTS AND OTHER INFORMATION REQUESTED BY THE EXECUTIVE DIRECTOR MUST BE SIGNED BY THE PERSON AND IN THE MANNER REQUIRED BY 30TAC § 305.128 (RELATING TO SIGNATORIES TO REPORTS).

7. AUTHORIZATION UNDER THIS GENERAL PERMIT DOES NOT CONVEY PROPERTY OR WATER RIGHTS OF ANY SORT AND DOES NOT GRANT ANY EXCLUSIVE PRIVILEGE.

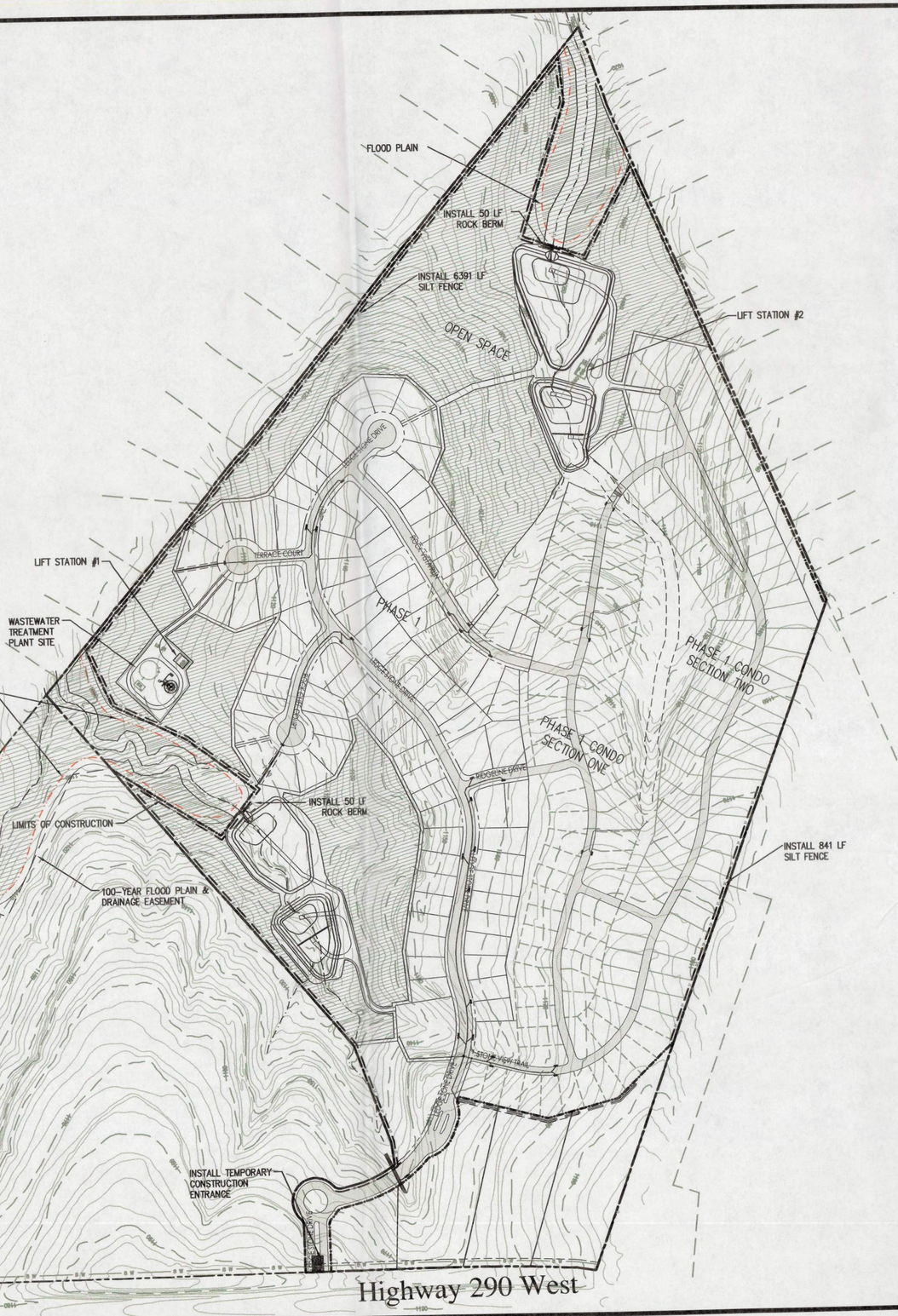
NO.	DESCRIPTION	INITIALS	DATE

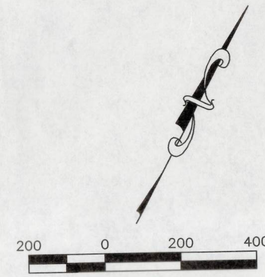
FELIX J. MANKA
92284
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
STORMWATER POLLUTION
PREVENTION PLAN (SWPPP)

DESIGNED:	
DRAWN BY:	
APPROVED:	FJM
FILE:	1250-C02-CZP
JOB NO:	1250-001
DATE:	NOVEMBER 2005





LEGEND

- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED STORM SEWER LINE
- PROPOSED RIGHT OF WAY LINE
- PROPOSED LOT LINE
- PROPOSED LCE LINE
- PROPOSED ASPHALT
- APPROXIMATE LIMITS OF FEMA FLOODPLAIN
- PROPOSED DRAINAGE EASEMENT
- LIMITS OF CONSTRUCTION
- SILT FENCE
- ROCK BERM
- CONSTRUCTION ENTRANCE
- TREE PROTECTION
- OHE — EX. OVERHEAD ELECTRIC
- EXISTING FENCE
- SUBSURFACE DRIP IRRIGATION AREA

NO.	DESCRIPTION	INITIALS	DATE

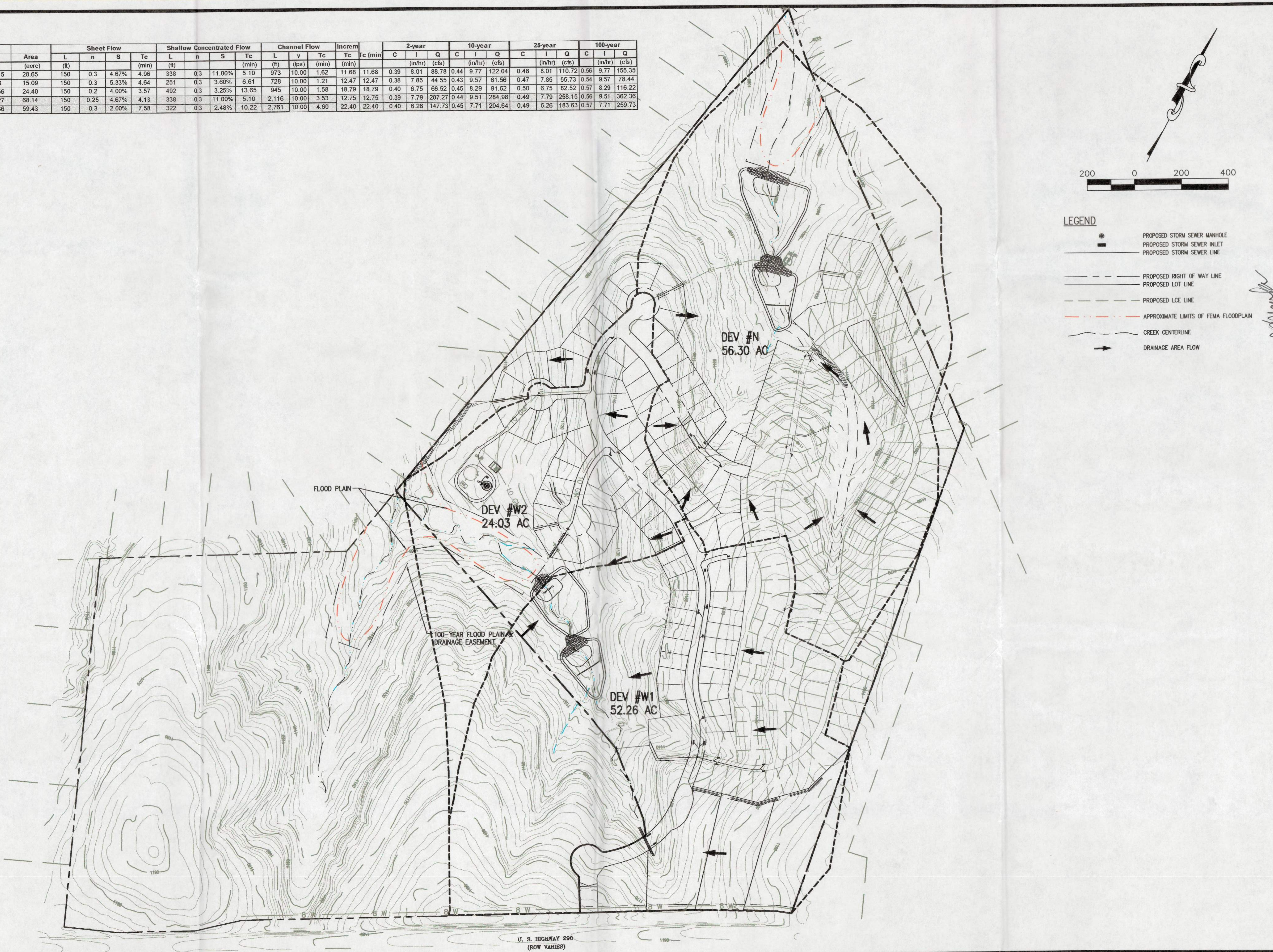
CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT

EROSION AND SEDIMENT CONTROL PLAN

DESIGNED:	
DRAWN BY:	
APPROVED:	FJM
FILE:	1250-C03-CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

Basin	Area	Area	Sheet Flow				Shallow Concentrated Flow				Channel Flow			Increm		2-year			10-year			25-year			100-year		
			L	n	S	Tc	L	n	S	Tc	L	v	Tc	Tc	Tc (min	C	I	Q	C	I	Q	C	I	Q	C	I	Q
	(sqft)	(acre)	(ft)			(min)	(ft)			(min)	(ft)	(fps)	(min)	(min)			(in/hr)	(cfs)		(in/hr)	(cfs)		(in/hr)	(cfs)		(in/hr)	(cfs)
D-W1	1,247,915	28.65	150	0.3	4.67%	4.96	338	0.3	11.00%	5.10	973	10.00	1.62	11.68	11.68	0.39	8.01	88.78	0.44	9.77	122.04	0.48	8.01	110.72	0.56	9.77	155.35
D-W2	657,356	15.09	150	0.3	5.33%	4.64	251	0.3	3.60%	6.61	728	10.00	1.21	12.47	12.47	0.38	7.85	44.55	0.43	9.57	61.56	0.47	7.85	55.73	0.54	9.57	78.44
D-Wout	1,062,756	24.40	150	0.2	4.00%	3.57	492	0.3	3.25%	13.65	945	10.00	1.58	18.79	18.79	0.40	6.75	66.52	0.45	8.29	91.62	0.50	6.75	82.52	0.57	8.29	116.22
D-W Total	2,968,027	68.14	150	0.25	4.67%	4.13	338	0.3	11.00%	5.10	2,116	10.00	3.53	12.75	12.75	0.39	7.79	207.27	0.44	9.51	284.98	0.49	7.79	258.15	0.56	9.51	362.36
D-N Total	2,588,636	59.43	150	0.3	2.00%	7.58	322	0.3	2.48%	10.22	2,761	10.00	4.60	22.40	22.40	0.40	6.26	147.73	0.45	7.71	204.64	0.49	6.26	183.63	0.57	7.71	259.73



NO.	DESCRIPTION	INITIALS	DATE

FELIX J. MANKA 66104 LICENSED PROFESSIONAL ENGINEER

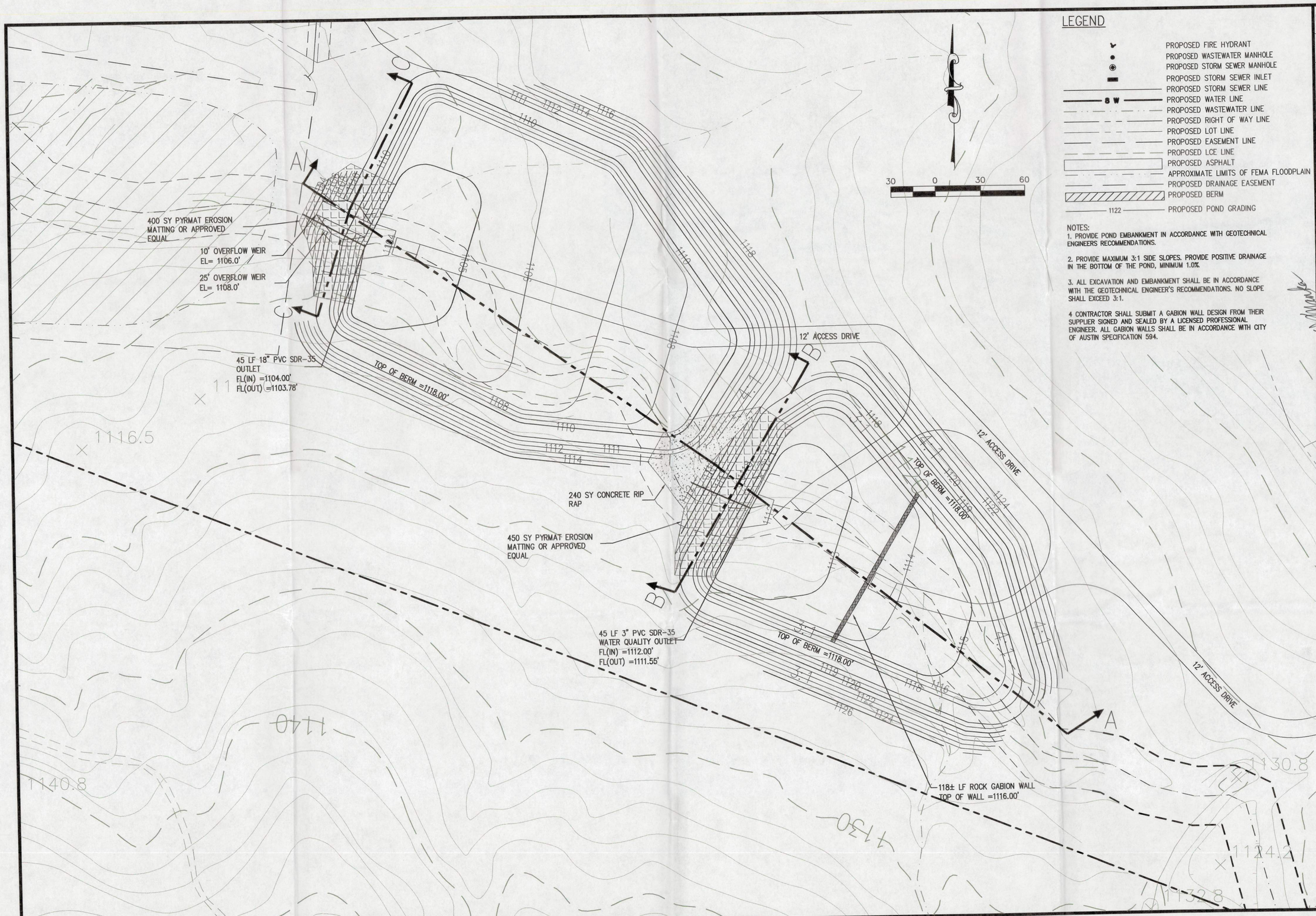
CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1 CONTRIBUTING ZONE PERMIT

DRAINAGE PLAN & CALCULATIONS

DESIGNED:
DRAWN BY:
APPROVED: FJM
FILE: 1250-C04-CZP
JOB NO.: 1250-001
DATE: NOVEMBER 2005

4 OF 9



LEGEND

- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED STORM SEWER LINE
- S W — PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED RIGHT OF WAY LINE
- PROPOSED LOT LINE
- PROPOSED EASEMENT LINE
- PROPOSED LCE LINE
- PROPOSED ASPHALT
- APPROXIMATE LIMITS OF FEMA FLOODPLAIN
- PROPOSED DRAINAGE EASEMENT
- PROPOSED BERM
- 1122 — PROPOSED POND GRADING

NOTES:

1. PROVIDE POND EMBANKMENT IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
2. PROVIDE MAXIMUM 3:1 SIDE SLOPES. PROVIDE POSITIVE DRAINAGE IN THE BOTTOM OF THE POND, MINIMUM 1.0%.
3. ALL EXCAVATION AND EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. NO SLOPE SHALL EXCEED 3:1.
4. CONTRACTOR SHALL SUBMIT A GABION WALL DESIGN FROM THEIR SUPPLIER SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER. ALL GABION WALLS SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN SPECIFICATION 594.

NO.	DESCRIPTION	INITIALS	DATE

STATE OF TEXAS ** FELIX J. MANKA 86104 LICENSED PROFESSIONAL ENGINEER

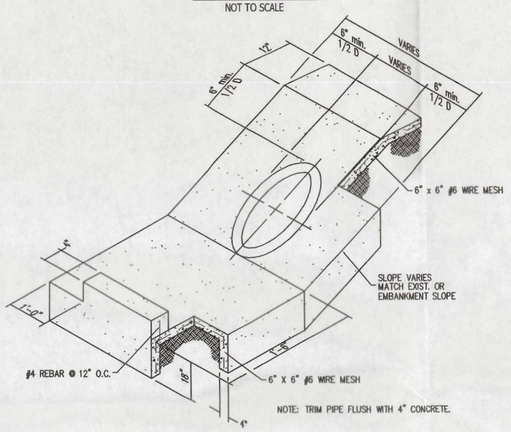
CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
WEST WATER QUALITY/DETENTION POND SYSTEM

DESIGNED:	JW
DRAWN BY:	AN
APPROVED:	FJM
FILE:	1250-C05 CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

OUTLET DETAIL

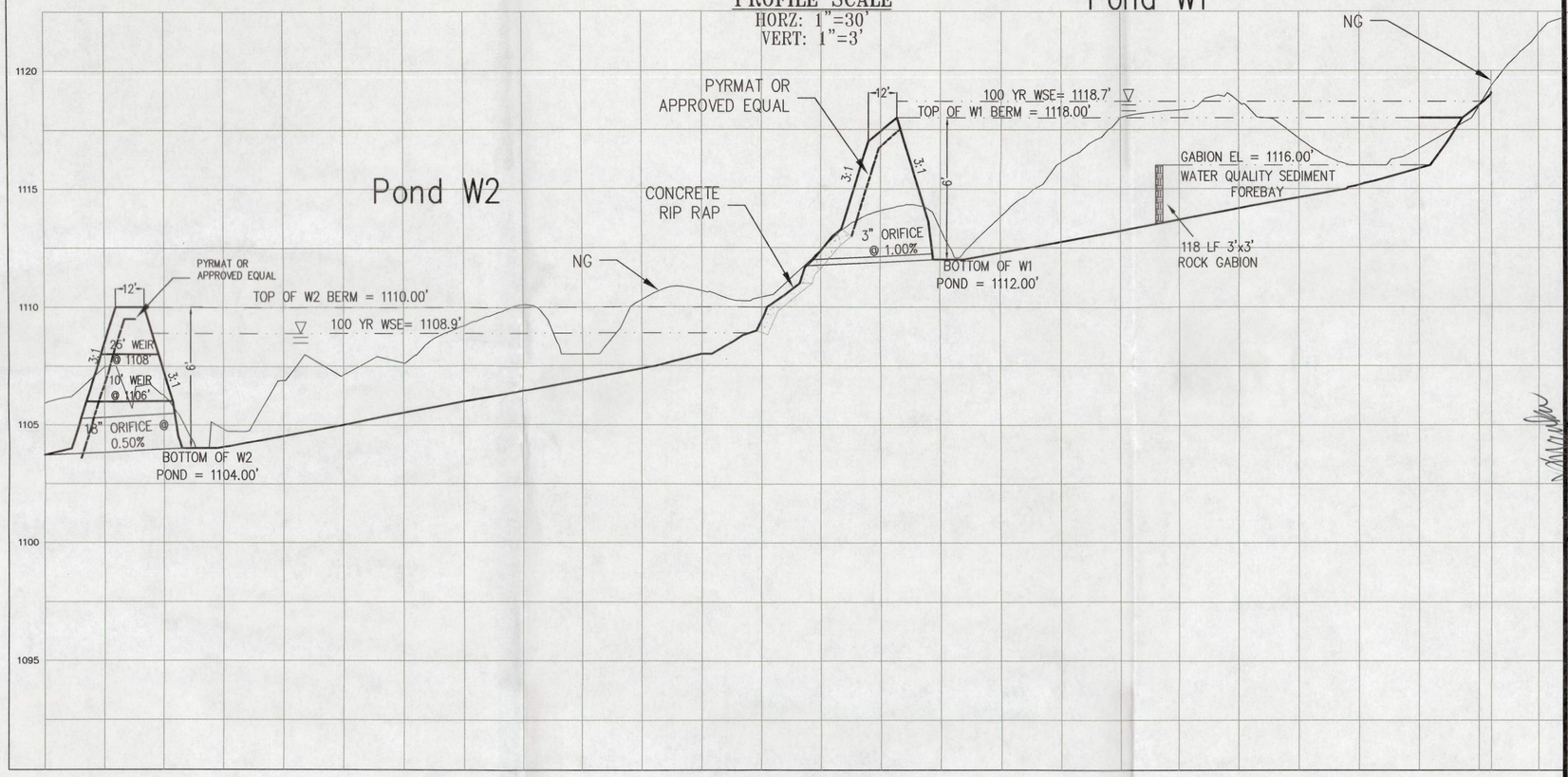
NOT TO SCALE



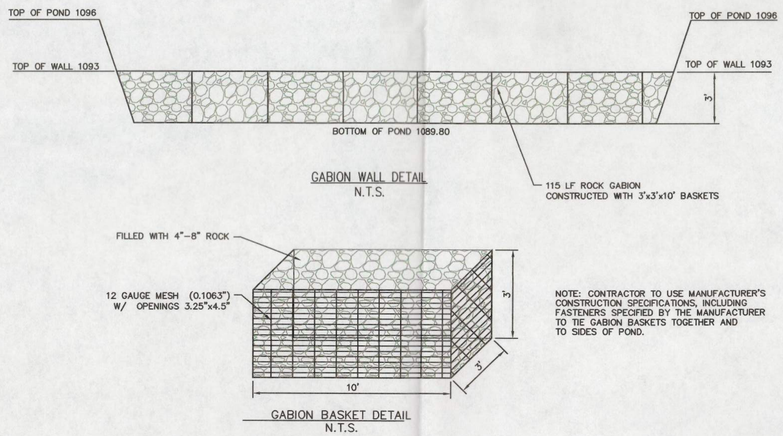
NOTE: TRIM PIPE FLUSH WITH 4" CONCRETE.

PROFILE SCALE

HORZ: 1"=30'
VERT: 1"=3'



SECTION A-A



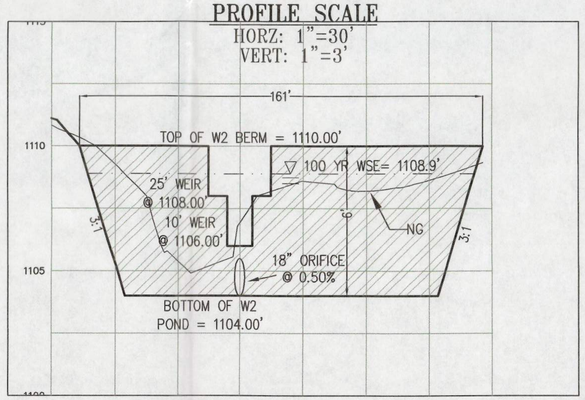
GABION WALL DETAIL
N.T.S.

GABION BASKET DETAIL
N.T.S.

NOTE: CONTRACTOR TO USE MANUFACTURER'S CONSTRUCTION SPECIFICATIONS, INCLUDING FASTENERS SPECIFIED BY THE MANUFACTURER TO TIE GABION BASKETS TOGETHER AND TO SIDES OF POND.

PROFILE SCALE

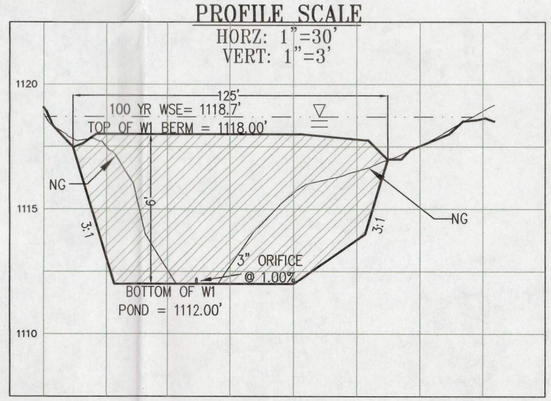
HORZ: 1"=30'
VERT: 1"=3'



POND W2

PROFILE SCALE

HORZ: 1"=30'
VERT: 1"=3'



POND W1

NO.	DESCRIPTION	INITIALS	DATE

FELIX J. MANKA
86705
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
WEST POND DETAILS AND CROSS SECTIONS

DESIGNED:	JW
DRAWN BY:	JW
APPROVED:	FJM
FILE:	1250 C06 CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

730 SY PYRMAT EROSION MATTING OR APPROVED EQUAL

20' OVERFLOW WEIR
EL= 1081.0'

40' OVERFLOW WEIR
EL= 1082.0'

45 LF 18" PVC SDR=35
OUTLET
FL(IN) =1078.00'
FL(OUT) =1077.55'

12' ACCESS DRIVE

TOP OF BERM =1084.00'

345 SY CONCRETE RIP RAP

600 SY PYRMAT EROSION MATTING OR APPROVED EQUAL

50 LF 2" & 3" PVC SDR-35 WATER QUALITY OUTLETS
FL(IN) =1088.00'
FL(OUT) =1087.75'

12' ACCESS DRIVE

TOP OF BERM =1094.00'

98± LF ROCK GABION WALL
TOP OF WALL
=1093.00'

8 GM

LS #2

LCE #50

30 0 30 60

LEGEND

- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED RIGHT OF WAY LINE
- PROPOSED LOT LINE
- PROPOSED EASEMENT LINE
- PROPOSED LCE LINE
- PROPOSED ASPHALT
- APPROXIMATE LIMITS OF FEMA FLOODPLAIN
- PROPOSED DRAINAGE EASEMENT
- PROPOSED BERM
- 1122 PROPOSED POND GRADING

NOTES:
1. PROVIDE POND EMBANKMENT IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS RECOMMENDATIONS.

2. PROVIDE MAXIMUM 3:1 SIDE SLOPES. PROVIDE POSITIVE DRAINAGE IN THE BOTTOM OF THE POND, MINIMUM 1.0%.

3. ALL EXCAVATION AND EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. NO SLOPE SHALL EXCEED 3:1.

4 CONTRACTOR SHALL SUBMIT A GABION WALL DESIGN FROM THEIR SUPPLIER SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER. ALL GABION WALLS SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN SPECIFICATION 594.

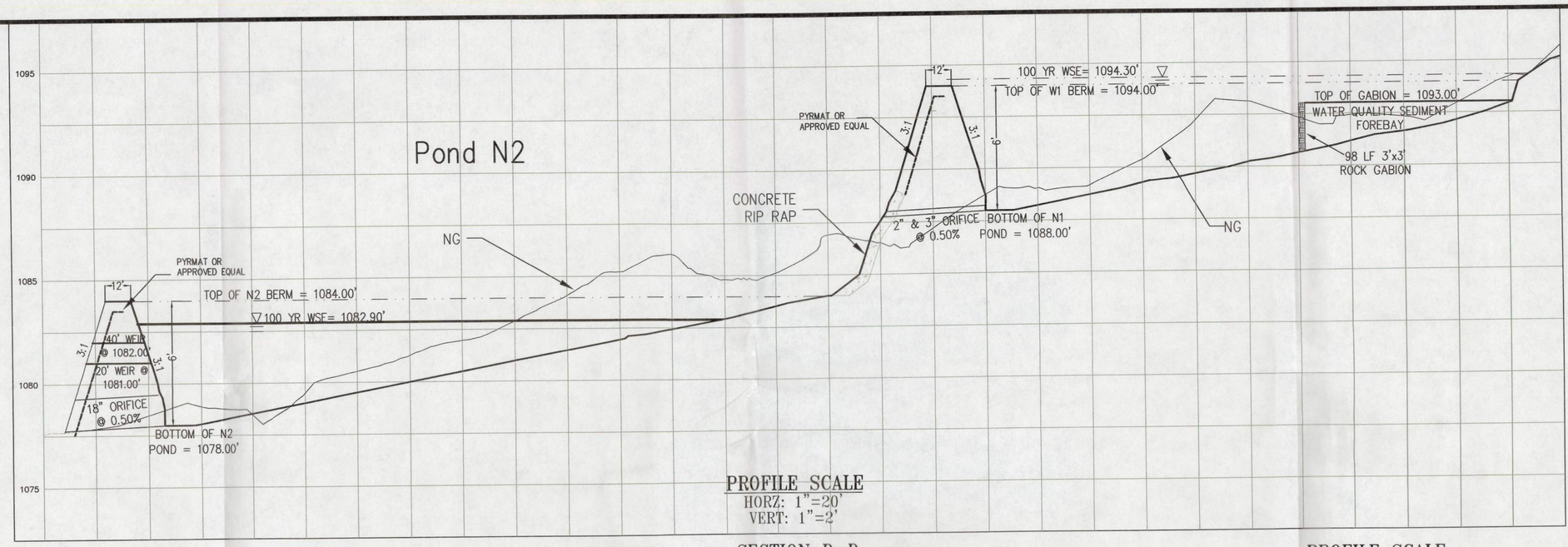
NO.	DESCRIPTION	INITIALS	DATE

FELIX J. MANKA 85104 LICENSED PROFESSIONAL ENGINEER

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

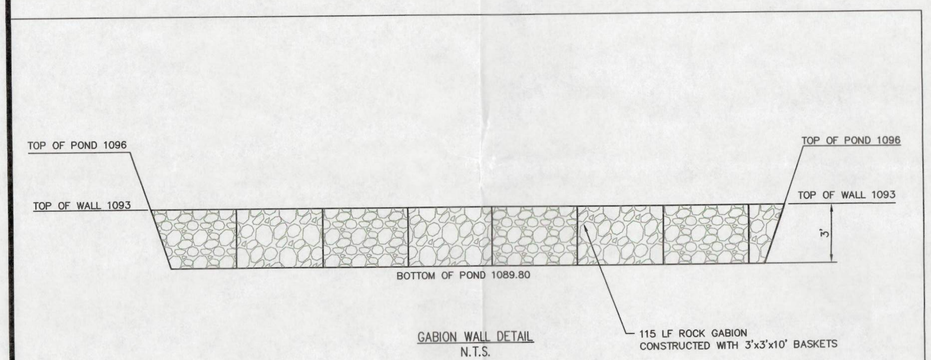
LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
NORTH WATER QUALITY/DETENTION POND SYSTEM

DESIGNED:	JW
DRAWN BY:	AN
APPROVED:	FJM
FILE:	1250-C07 C2P
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

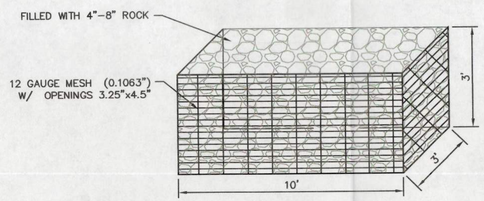


PROFILE SCALE
HORZ: 1"=20'
VERT: 1"=2'

SECTION D-D



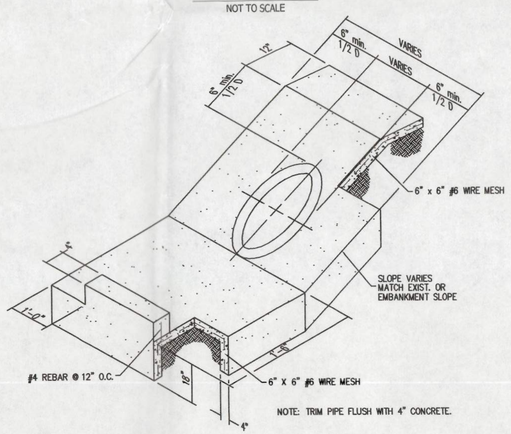
GABION WALL DETAIL
N.T.S.



GABION BASKET DETAIL
N.T.S.

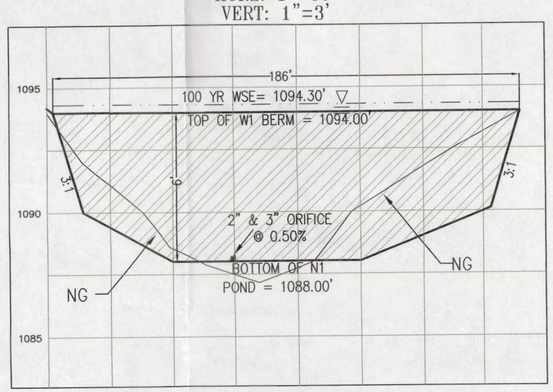
NOTE: CONTRACTOR TO USE MANUFACTURER'S CONSTRUCTION SPECIFICATIONS, INCLUDING FASTENERS SPECIFIED BY THE MANUFACTURER TO TIE GABION BASKETS TOGETHER AND TO SIDES OF POND.

OUTLET DETAIL
NOT TO SCALE



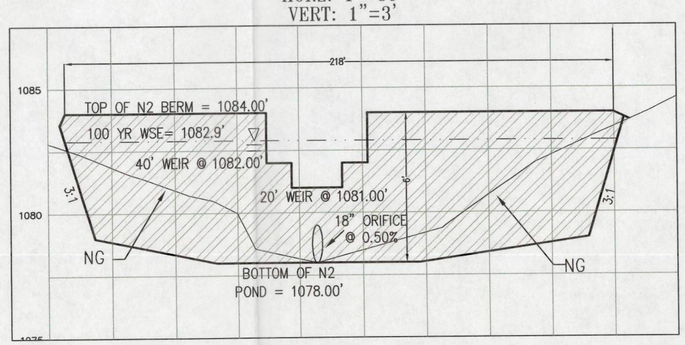
NOTE: TRIM PIPE FLUSH WITH 4" CONCRETE.

PROFILE SCALE
HORZ: 1"=30'
VERT: 1"=3'



POND N1

PROFILE SCALE
HORZ: 1"=30'
VERT: 1"=3'



POND N2

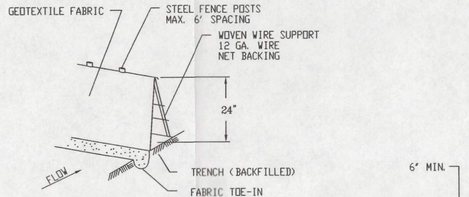
NO.	DESCRIPTION	INITIALS	DATE

FELIX J. MANKA 86706 LICENSED PROFESSIONAL ENGINEER

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
NORTH POND DETAILS
AND CROSS SECTIONS

DESIGNED:	JW
DRAWN BY:	JW
APPROVED:	FJM
FILE:	1250-C08 CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005



STANDARD SYMBOL
FOR SILT FENCE (SF)

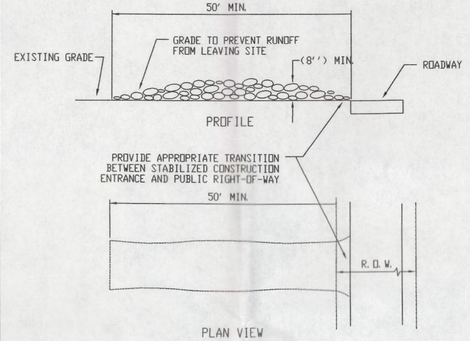
SF

TRENCH CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1 INCH.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILL WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. 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.

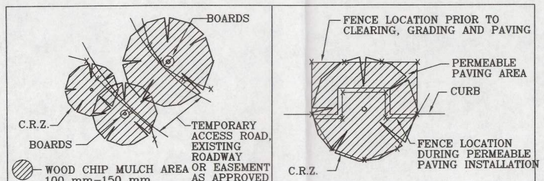
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1



NOTES:

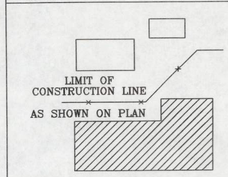
1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1

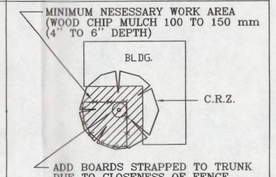


LINEAR CONSTRUCTION THROUGH TREES

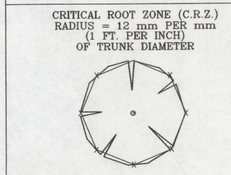
TREES IN PAVING AREA



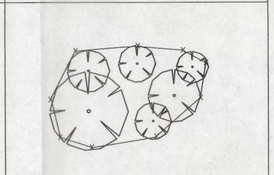
NATURAL AREAS



TREES NEAR
CONSTRUCTION ACTIVITY

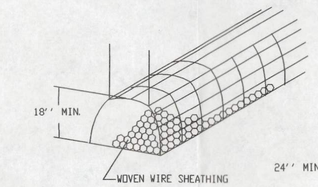


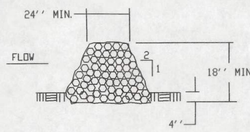
INDIVIDUAL TREE



GROUP OF TREES

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TREE PROTECTION FENCE LOCATIONS	
RECORD COPY SIGNED BY J. PATRICK MURPHY	11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-1





CROSS SECTION

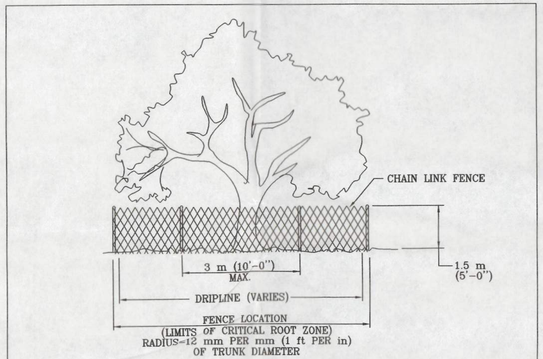
STANDARD SYMBOL
FOR ROCK BERM (RB)

RB

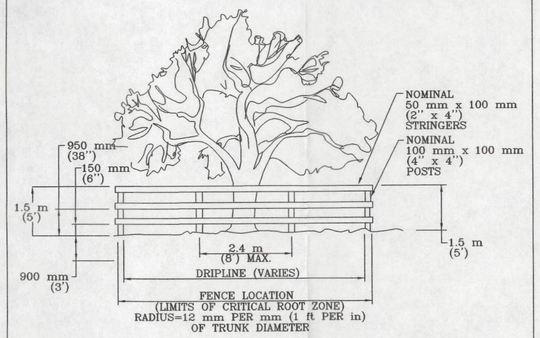
NOTES:

1. USE ONLY OPEN GRADED ROCK 4" to 8" DIAMETER FOR STREAM FLOW CONDITIONS. USE OPEN GRADED ROCK 3" to 5" DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE. ROCK BERMS IN CHANNEL APPLICATIONS SHALL BE ANCHORED FIRMLY INTO THE SUBSTRATE A MINIMUM OF 6" WITH T-POSTS OR WITH #5 OR #6 REBAR, WITH MAXIMUM SPACING APART OF 48" ON CENTER.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 6", WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE-SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6".
6. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY J. PATRICK MURPHY	5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TREE PROPTECTION FENCE TYPE A - CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY	11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2



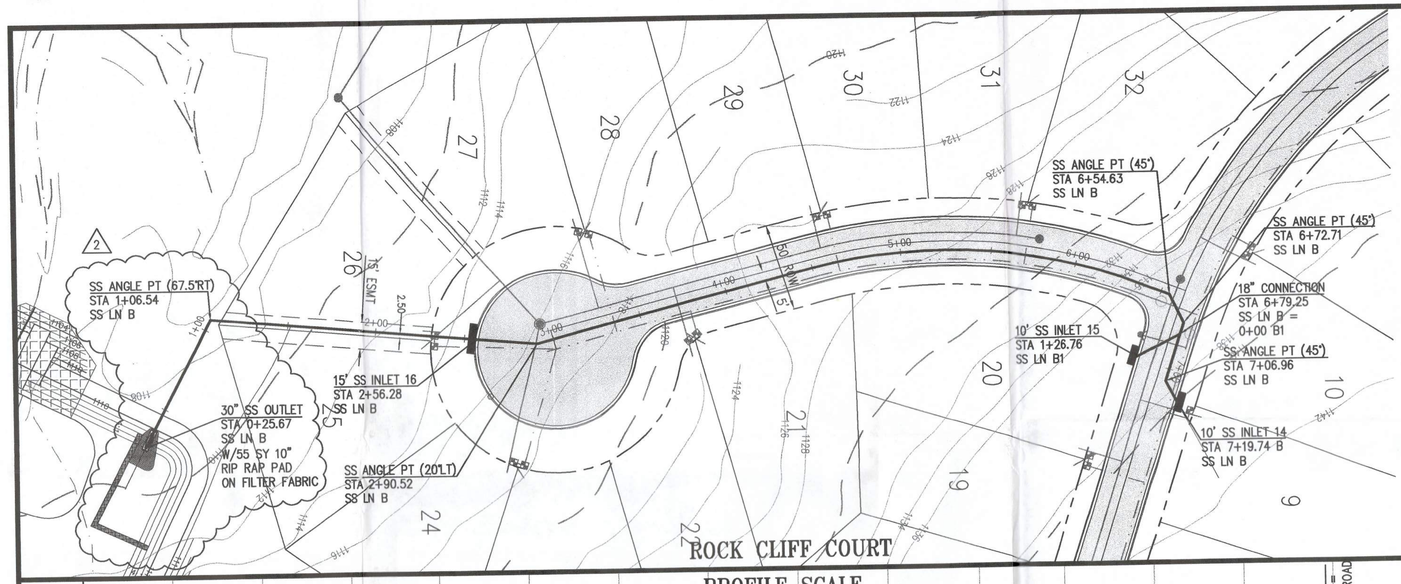
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TREE PROTECTION FENCE TYPE B - WOOD	
RECORD COPY SIGNED BY J. PATRICK MURPHY	11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-3

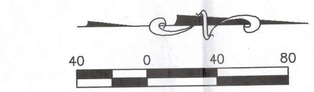
NO.	DESCRIPTION	INITIALS	DATE

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

LEDGE STONE SUBDIVISION, PHASE 1
CONTRIBUTING ZONE PERMIT
EROSION CONTROL & WATER QUALITY
DETAILS

DESIGNED:	
DRAWN BY:	
APPROVED:	FJM
FILE:	1250 C09 CZP
JOB NO.:	1250-001
DATE:	NOVEMBER 2005





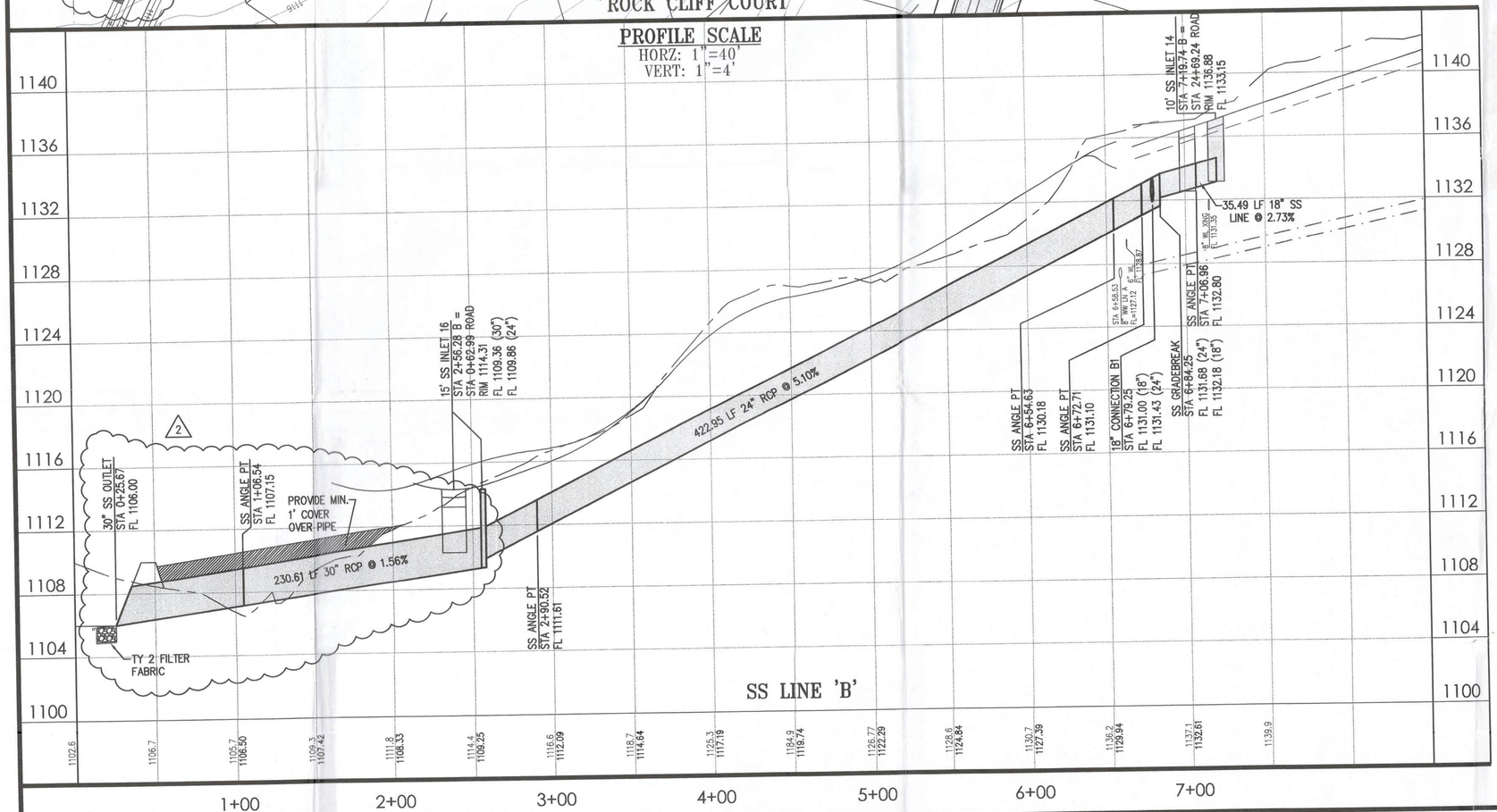
LEGEND

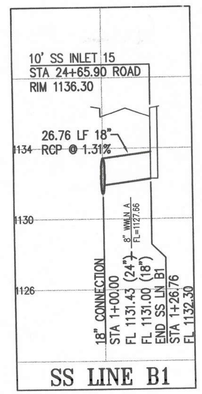
- PROPOSED WATER METER
- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED STORM SEWER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED ASPHALT
- EXISTING GROUND
- PROPOSED FINISH GROUND

NO.	DESCRIPTION	INITIALS	DATE
1	REVISED PROFILE AND CALL-OUTS, ADDED UTILITY CROSSINGS	FJM	2-15-06
2	REVISED SS LINE B	FJM	3-03-06

PROFILE SCALE

HORZ: 1"=40'
VERT: 1"=4'



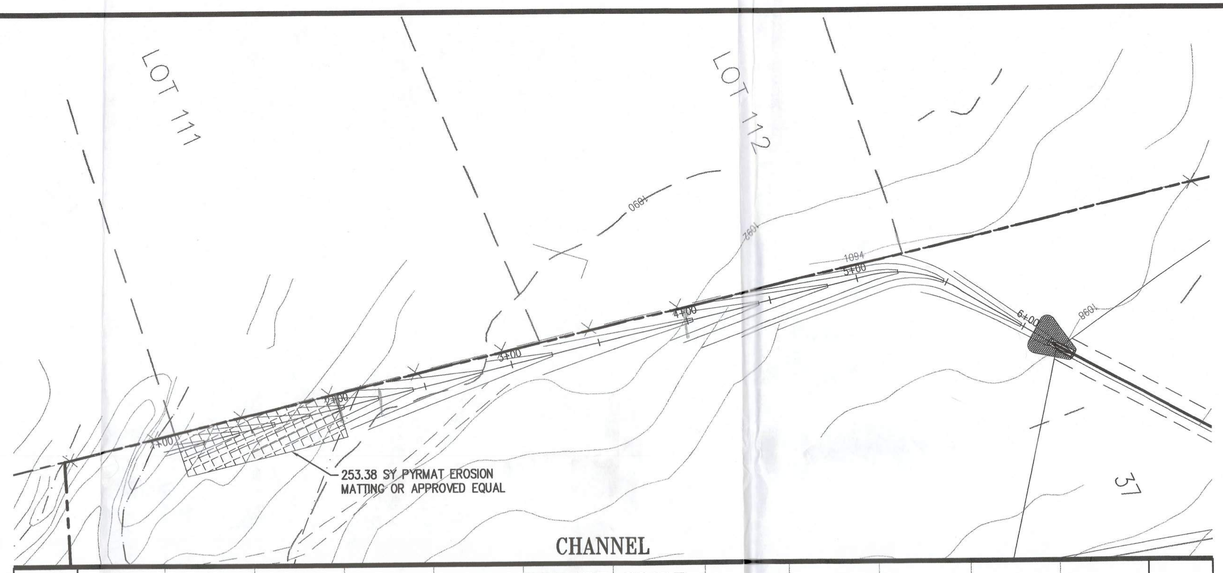


CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

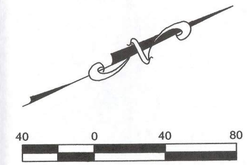
BUSH RANCH SUBDIVISION, PHASE 1
SECTION 1
ROCK CLIFF CT & LEDGE STONE DR-SS LINE 'B'
STORM SEWER PLAN & PROFILE

DESIGNED:	JW/MRK
DRAWN BY:	MRK
APPROVED:	FJM
FILE:	1250 PH1-C24
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

Date: Mar 03, 2006 - 4:24pm User: mkalb File: M:\DWG\1250-BR-Phase 1\Phase1\CP_PH1\1250 PH1 C24 SS B PP.dwg

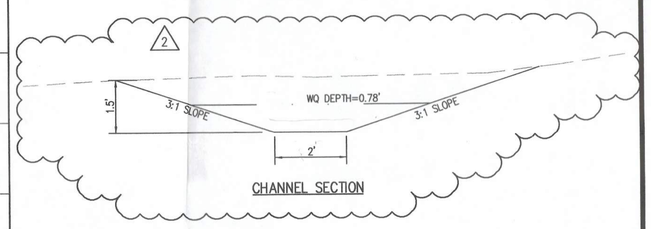


CHANNEL

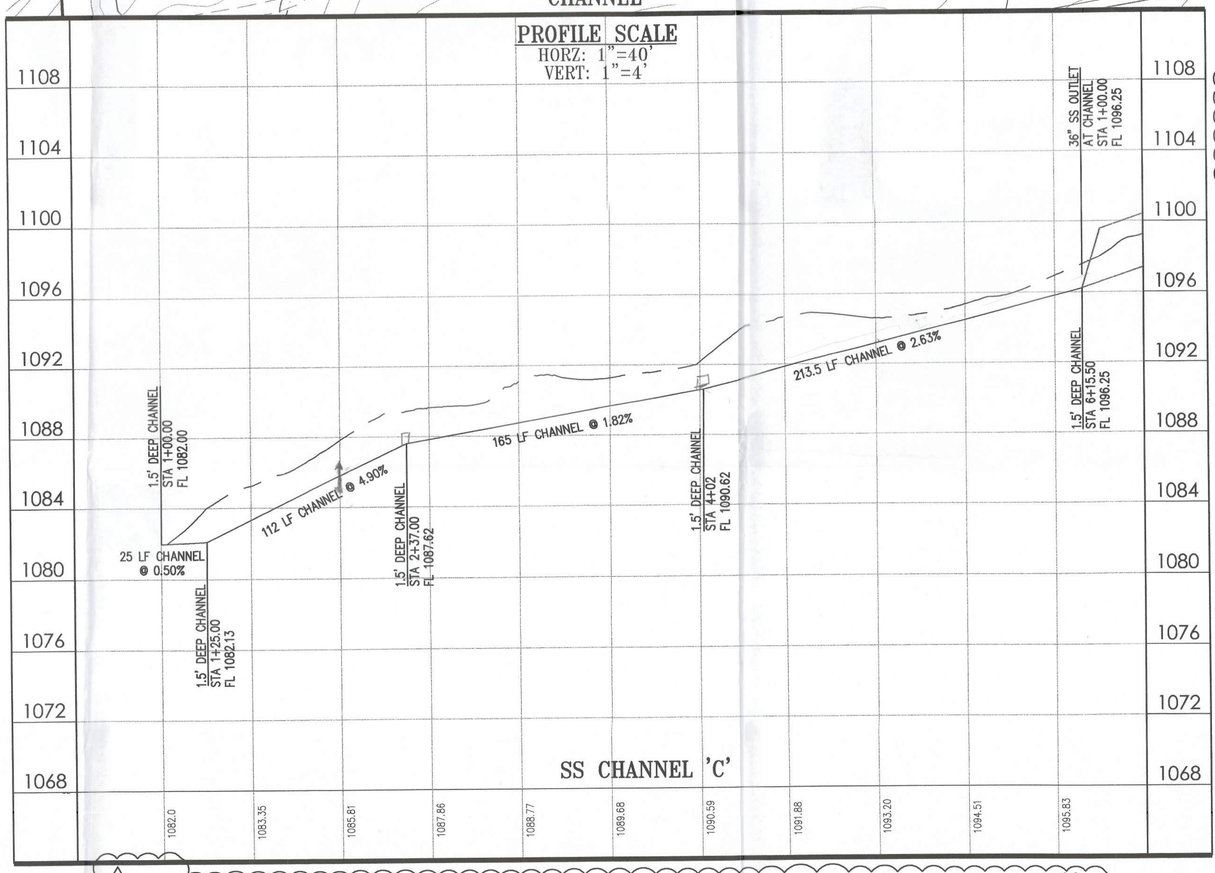


LEGEND

PROPOSED STORM SEWER LINE
PROPOSED LOT LINE
EXISTING GROUND



CHANNEL SECTION



NO.	DESCRIPTION	INITIALS	DATE
1	CORRECTED STATIONS AND ADDED CROSS SECTION OF CHANNEL	FJM	3-03-06

CMA ENGINEERING, INC.
14101 WEST HIGHWAY 290, BUILDING 600
AUSTIN, TEXAS 78737 (512) 894-3230

BUSH RANCH SUBDIVISION, PHASE 1
SECTION 1
STORM SEWER CHANNEL 'C'
PLAN & PROFILE

DESIGNED:	JW/MRK
DRAWN BY:	MRK
APPROVED:	FJM
FILE:	1250 PH1-C27
JOB NO.:	1250-001
DATE:	NOVEMBER 2005

Date: Mar 06, 2006 - 4:19pm User: jwarwick File: M:\DWG\1250-BR-Phase 1\Phase1\CP_PH1\1250 PH1 C27 SS CHANNEL.dwg

ATTACHEMENT H

APPROVED MODIFICATION

EAPP NO. 11001268

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 29, 2018

Mr. Mike Schoenfeld
Vice President
290 East Bush, Inc.
102A Cordillera Ridge
Boerne, Texas 78006

Re: Edwards Aquifer, Hays County
NAME OF PROJECT: Ledge Stone Subdivision Phase 1; Ledge Stone Drive at Rocky Ridge Trail; Dripping Springs, Texas
TYPE OF PLAN: Application for Modification (MOD) of a Previously Approved Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer
Edwards Aquifer Protection Program ID No. 11001268; RN104798640

Dear Mr. Schoenfeld:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP MOD Application for the above-referenced project submitted to the Austin Regional Office by CMA Engineering, Inc. on behalf of 290 East Bush, Inc., on August 31, 2018. Final review of the CZP MOD was completed after additional material was received on November 9, 12, 26, and 29, 2018. 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 Subchapter B. 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.*

BACKGROUND

The CZP approval for the commercial development was originally issued on March 24, 2006 (Edwards Aquifer Protection Program ID No. 11-05112102) for a total project area of 108.53 acres with 24.26 acres of impervious cover. The approval included 236 single family residences, a wastewater treatment plant, surface drip irrigation system, two extended detention basins and a grassy swale.

PROJECT DESCRIPTION

The CZP MOD is to request an approval for an additional 0.63 acres of impervious cover from Rocky Ridge trail. The impervious cover was always treated by a sand filter basin but was not included in the original CZP approval letter. The two extended detention basins approved in EAPP ID No. 11-05112102 were modified into sand filter basins for higher removal efficiency. The sand filters (west and north) are approved with this application.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater, surface water will be conveyed to a west sand filter basin that was designed and constructed using the TCEQ technical guidance document, "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005)". The sand filter basin is designed to treat 18.68 acres of impervious cover at full buildout. The required water quality volume is 69,274 cubic feet and 104,420 cubic feet are provided. The total TSS load removal required is 15,493 lbs. and the total TSS load removal provided is 17,000 lbs.

The area draining to the north sand filter pond is 44.15 acres with 14.26 acres of impervious cover. The required water quality volume is 58,793 cubic feet and provided water quality volume is 99,324 cubic feet The total TSS load removal required is 12,800 lbs. and the total TSS load removal provided is 13,670 lbs.

Treatment design calculations were sealed by Lauren Winek, P.E. on November 20, and 28, 2018, to demonstrate that the proposed treatment load removal meets the required treatment load removal. The approved measures meet the TCEQ required 80% removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

I. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

II. Additional phases of this development will require approval of a CZP or CZP Modification as applicable prior to conducting additional regulated activities on the site.

III. All sediment and/or media removed from the water quality basin 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 Contributing Zone Plan 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 name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, 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 his 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. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
10. 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).
11. 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.

12. 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.
13. 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.
14. 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.

<u>After Completion of Construction:</u>

15. 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.
16. 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.
17. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. 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.
18. 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.
19. 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.

20. 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. Anusuya K. Iyer of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier,
Water Section Team Leader
Austin Region Office
Texas Commission on Environmental Quality

RCS/aki

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

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

TCEQ-10263 (10/01/04)

ATTACHMENT I

APPROVED MODIFICATION

EAPP NO. 11003078

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 27, 2022

Mr. Daniel Campbell
Ledgestone East, LTD
4314 Medical Parkway, Suite 200
Austin, Texas 78756

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: Ledge Stone Subdivision Phase 1; Located on the N side of US 290 approximately 0.5 miles W of CR 163; ETJ of Dripping Springs, Texas

TYPE OF PLAN: Request for Modification of an Approved Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer

Regulated Entity No. RN104798640; Additional ID No. 11003078

Dear Mr. Campbell:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP Modification for the above-referenced project submitted to the Austin Regional Office by Burgess & Niple, Inc. on behalf of Ledgestone East, LTD on April 28, 2022. Final review of the CZP Modification was completed after additional material was received on June 14, 2022. 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.*

BACKGROUND

The Ledge Stone Subdivision Phase 1 CZP was approved by letter dated March 24, 2006, for a 108.53-acre site for the construction of 236 single-family residences, associated roads, wastewater treatment plant, and a subsurface drip irrigation system. Permanent BMPs included two (2) extended detention basins and a grassy swale. A CZP Modification was approved by letter dated November 29, 2018, to modify the two (2) extended detention basins into sand filter basins (west and north).

PROJECT DESCRIPTION

This modification is for an 8.74-acre site with 5.30 acres (60.64 percent) of impervious cover. The commercial project proposes the construction of five (5) buildings, associated parking, and driveways. Project wastewater will be disposed of by conveyance to the Hays County MUD No. 4 Wastewater Treatment Plant owned and operated by the Hays County MUD No. 4.

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, one (1) existing sand filter basin (11001268 west basin), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 4,757 pounds of TSS generated from the 5.30 acres of impervious cover. The approved measure meets the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the CZP approval letter dated March 24, 2006, and subsequent modification dated November 29, 2018.

II. All sediment and/or media removed from the water quality basin 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 Contributing Zone Plan 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 name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, 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.

<u>During Construction:</u>

8. During the course of regulated activities related to this project, the applicant or his 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.

<u>After Completion of Construction:</u>

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 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 the Edwards Aquifer Protection Program Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/dpm

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

cc: Mr. Felix Manka, P.E., Burgess & Niple, Inc.

Change in Responsibility for Maintenance
on Permanent Best Management Practices and Measures

The applicant is no longer responsible for maintaining the permanent best management practice (BMP) and other measures. The project information and the new entity responsible for maintenance is listed below.

Customer: _____

Regulated Entity Name: _____

Site Address: _____

City, Texas, Zip: _____

County: _____

Approval Letter Date: _____

BMPs for the project: _____

New Responsible Party: _____

Name of contact: _____

Mailing Address: _____

City, State: _____ Zip: _____

Telephone: _____ FAX: _____

_____ _____

Signature of New Responsible Party Date

I acknowledge and understand that I am assuming full responsibility for maintaining all permanent best management practices and measures approved by the TCEQ for the site, until another entity assumes such obligations in writing or ownership is transferred.

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.