Contributing Zone Plan

For

Liberty Hill Meetinghouse 115 Bronco Blvd. Liberty Hill TX, 78642



Prepared By Hill Country Civil, LLC 391 Landa St. Ste. 1204 New Braunfels, TX 78130 Ross Corder, PE





Application Cover Page

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 <u>30 TAC 213</u>.

Administrative Review

1. <u>Edwards Aquifer applications</u> 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: <u>http://www.tceq.texas.gov/field/eapp</u>.

- 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: Liberty Hill Meetinghouse				2. Regulated Entity No.:				
3. Customer Name: The Church Of Jesus Christ Of Latter-Day Saints			4. Customer No.:					
5. Project Type: (Please circle/check one)	New	Modification		Extension		Exception		
6. Plan Type: (Please circle/check one)	WPAP CZP	SCS UST AST EXP EXT		Technical Clarification	Optional Enhanced Measures			
7. Land Use: (Please circle/check one)	Residential 🕻	Non-r	Non-residential 8		8. Sit	e (acres):	6.43	
9. Application Fee:	\$5,000	10. Permanent BM			BMP(s	s):	Batch Detention Pond	
11. SCS (Linear Ft.):	N/A	12. AST/UST (No. Tanks)			nks):	N/A		
13. County:	Williamson	14. Watershed:				South Fork San Gabriel River		

Application Distribution

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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)			Х
Groundwater Conservation District(s)	Edwards Aquifer Authority Barton Springs/ Edwards Aquifer Hays Trinity Plum Creek	Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	Austin Buda Dripping Springs Kyle Mountain City San Marcos Wimberley Woodcreek	Austin Bee Cave Pflugerville Rollingwood Round Rock Sunset Valley West Lake Hills	Austin Cedar Park Florence Georgetown Jerrell Leander XLiberty Hill Pflugerville Round Rock

Austin Region

	Sa	an 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.

Ross Corder, PE

Print Name of Customer/Authorized Agent

Roos Contr

03-25-2025

Signature of Customer/Authorized Agent

Date

FOR TCEQ INTERNAL USE ONL	.Y			
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	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):		Check:	Signed (Y/N):	
Core Data Form Incomplete Nos.:		Less than 90 days old (Y/N):		



Application Form

Contributing Zone Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Ross Corder, PE

Date: 03/25/2025

Signature of Customer/Agent:

Roos Cont

Regulated Entity Name: Liberty Hill Meetinghouse

Project Information

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

Contact Person: The Church Of Jesus Christ Of Latter-Day SaintsEntity: Liberty Hill MeetinghouseMailing Address: 50 E North Temple St, COB 12City, State: Salt Lake City, UTZip: 84150Telephone: (385) 315-0555Fax: ____Email Address: scottdl@ChurchofJesusChrist.org

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5. Agent/Representative (If any):

Contact Person: <u>Ross Corder, PE</u> Entity: <u>Hill Counrty Civil</u> Mailing Address: <u>391 Landa St. Ste. 1204</u> City, State: <u>New Braunfels</u> Telephone: <u>(210) 378-4953</u> Email Address: <u>ross@hillcountrycivil.com</u>

Zip: <u>78130</u> Fax: _____

- 6. Project Location:
 - The project site is located inside the city limits of <u>Liberty Hill</u>.
 - The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
 - The project site is not located within any city's limits or ETJ.
- 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.

The location site is off of State Hwy 29 and Bronco Blvd. behind the Prosperity Bank.

- 8. Attachment A Road Map. A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.
- 9. Attachment B USGS Quadrangle Map. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') is attached. The map(s) clearly show:

🔀 Project site boundaries.

- \boxtimes USGS Quadrangle Name(s).
- 10. Attachment C Project Narrative. A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:
 - Area of the site
 - \square Impervious cover
 - \times Permanent BMP(s)
 - \bowtie Proposed site use
 - Site history
 - X Previous development
 - \boxtimes Area(s) to be demolished
- 11. Existing project site conditions are noted below:
 - Existing commercial site
 - Existing industrial site
 - Existing residential site

Existing paved and/or unpaved roads

🔀 Undeveloped (Cleared)

Undeveloped (Undisturbed/Not cleared)

Other: _____

12. The type of project is:

Residential: # of Lots: _____
 Residential: # of Living Unit Equivalents: _____
 Commercial
 Industrial
 Other: _____

13. Total project area (size of site): <u>6.43</u> Acres

Total disturbed area: <u>4</u> Acres

- 14. Estimated projected population: 300
- 15. 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	16,367	÷ 43,560 =	0.376
Parking	121,282	÷ 43,560 =	2.784
Other paved surfaces	0	÷ 43,560 =	0
Total Impervious Cover	137,649	÷ 43,560 =	3.16

Table 1 - Impervious Cover

Total Impervious Cover <u>3.16</u> \div Total Acreage <u>6.43</u> X 100 = <u>49</u>% Impervious Cover

16. Attachment D - Factors Affecting Surface Water Quality. A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

17. \boxtimes Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

For Road Projects Only

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

🛛 N/A

18.	Туре	of	project:
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TXDOT road project. County road or roads built to county specifications. City thoroughfare or roads to be dedicated to a municipality. Street or road providing access to private driveways. 19. Type of pavement or road surface to be used: Concrete Asphaltic concrete pavement Other: 20. Right of Way (R.O.W.): Length of R.O.W.: _____ feet. Width of R.O.W.: feet. $L \times W = Ft^2 \div 43,560 Ft^2/Acre = acres.$ 21. Pavement Area: Length of pavement area: _____ feet. Width of pavement area: feet. $L \times W = Ft^2 \div 43,560 Ft^2/Acre = acres.$ Pavement area acres ÷ R.O.W. area acres x 100 = % impervious cover.

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

A rest stop will not be included in this project.

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

26. Wastewater will be disposed of by:

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

 Attachment F - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities. Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.
Sewage Collection System (Sewer Lines): The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is:
Existing. Proposed.
□ N/A ermanent Aboveground Storage Tanks(ASTs) ≥ 500

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

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

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

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

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

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

Table 3 - Secondary Containment

Length (L)(Ft.)	Width(W)(Ft.)	Height (H)(Ft.)	L x W x H = (Ft3)	Gallons

Total: _____ Gallons

30. Piping:

] All piping, hoses, and dispensers will be located inside the containment structure.

Some of the piping to dispensers or equipment will extend outside the containment structure.

The piping will be aboveground

] The piping will be underground

- 31. The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of:
- 32. Attachment H AST Containment Structure Drawings. A scaled drawing of the containment structure is attached that shows the following:
 - Interior dimensions (length, width, depth and wall and floor thickness).
 -] Internal drainage to a point convenient for the collection of any spillage.

Tanks clearly labeled

Piping clearly labeled

Dispenser clearly labeled

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

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

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

Site Plan Requirements

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

34. \square The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = <u>40</u>'.

35. 100-year floodplain boundaries:

Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): <u>48491C0245F dated 12-20-19</u>.

36. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.

The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.

- 37. \square A drainage plan showing all paths of drainage from the site to surface streams.
- 38. 🖂 The drainage patterns and approximate slopes anticipated after major grading activities.
- 39. \boxtimes Areas of soil disturbance and areas which will not be disturbed.
- 40. 🔀 Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
- 41. 🛛 Locations where soil stabilization practices are expected to occur.
- 42. Surface waters (including wetlands).

N/A

43. \boxtimes Locations where stormwater discharges to surface water.

There will be no discharges to surface water.

44. Temporary aboveground storage tank facilities.

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

45. Permanent aboveground storage tank facilities.

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

46. \square Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

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

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

🗌 N/A

- 48. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
 - The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____.

N/A

49. Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

🗌 N/A

50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

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

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

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

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

Attachment I - 20% or Less Impervious Cover Waiver. The site will be used for
multi-family residential developments, schools, or small business sites and has 20%
or less impervious cover. A request to waive the requirements for other permanent
BMPs and measures is attached.

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

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

52. X Attachment J - BMPs for Upgradient Stormwater.

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

No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53. X Attachment K - BMPs for On-site Stormwater.

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

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

N/A

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

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

N/A

56. Attachment N - Inspection, Maintenance, Repair and Retrofit Plan. A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:
Prepared and certified by the engineer designing the permanent BMPs and measures
 Signed by the owner or responsible party Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
Contains a discussion of record keeping procedures
□ N/A
57. Attachment O - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
N/A
58. Attachment P - Measures for Minimizing Surface Stream Contamination. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.
□ N/A
Pernancibility for Maintenance of Permanent RMPs and

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

- 59. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
- 60. A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

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

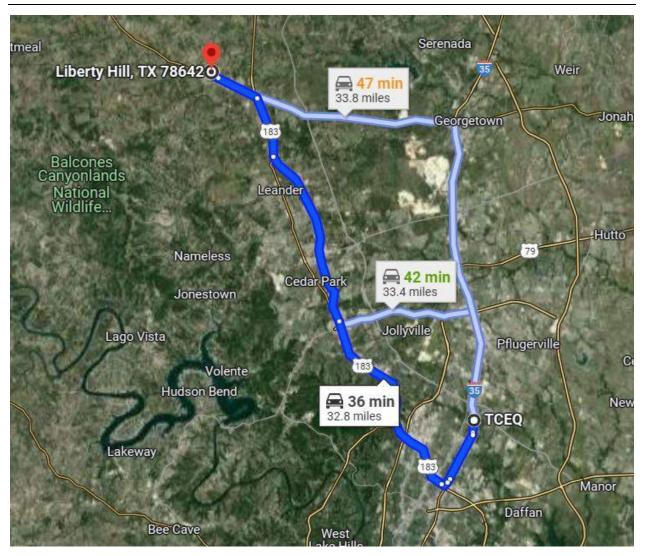
Administrative Information

- 61. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.
- 62. Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.
- 63. The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.
 - The Temporary Stormwater Section (TCEQ-0602) is included with the application.



Attachment A: Road Map

Attachment A: Road Map



TCEQ

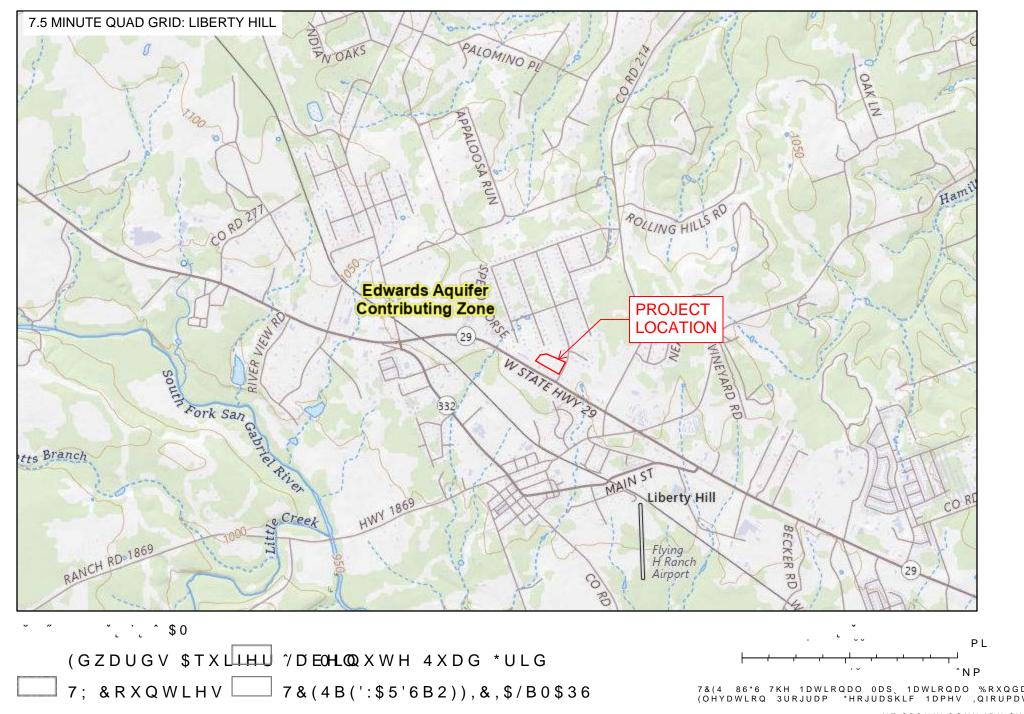
12100 Park 35 Cir, Austin, TX 78753 Get on I-35 S from S I-35 Frontage Rd 2 min (1.0 mi) Take US-183 N and Route 183A N to US-183 N/N US Hwy 183 in Williamson County 24 min (25.4 mi) Follow US-183 N/N US Hwy 183 and W State Hwy 29 to your destination 10 min (6.5 mi) Liberty Hill Texas 78642





Attachment B: USGS Quad Map

86*6 4XDG 0DS



:HE \$SS%XLOGHU IRU \$U

7&(4 _ 86*6 7KH 1DWLRQDO 0DS, 1DWLRQDO %RXQGDULHV 'DWDVHW '(3 (OHYDWLRQ 3URJUDP *HRJUDSKLF 1DPHV,QIRUPDWLRQ 6\VWHP 1DWLRQDO +\GURJUDSK\ 'DW



Attachment C: Project Narrative

Attachment C: Project Narrative

Liberty Hill Meetinghouse is a proposed commercial building located at 115 Bronco Blvd. Liberty Hill, TX. The 6.43-acre property is located fully within the city limits of Liberty Hill and entirely inside of the Edwards Aquifer Contributing Zone and located outside of a regulated 100-year floodplain (Zone AE) per FEMA FIRM Panel No. 48491C0245F. The site generally drains from the west to east, towards Bronco Blvd. In accordance with 30 TAC Chapter 213, this CZP application is being submitted for the proposed development to occur onsite.

The property is currently undeveloped grassland. The proposed development consists of the construction of a church with associated parking, utilities, and a batch detention pond for water quality treatment and detention.

New development will disturb approximately 4 acres, of which, 3.16 acres is proposed impervious cover. Based on the total site acreage of 6.43 acres, the total impervious cover percentage is approximately 49%.

The proposed permanent BMP to treat the proposed impervious cover is a Batch Detention Pond, adhering to TCEQ's Technical Guidance Manual (TGM) RG-348. Total Site generated TSS for the project is 2,420 lbs. The basin captures about 2,489 lbs of TSS. There is a small portion of impervious cover that will not be captured by the proposed batch pond. These areas are being treated by overtreatment within the basin.

There are no upgradient areas that drain to this property. Runoff from the adjacent residential properties on the north property line drain down the property line through an existing drainage channel developed when the subdivision was constructed. Therefore, no proposed drainage interceptor channels or upsizing of the batch detention pond to treat offsite runoff is required.

Wastewater flows generated by the project will be treated by a new septic system sized to treat the new development. Potable water will be provided by the City of Georgetown.





Attachment D: Factors Affecting Surface Water Quality

Attachment D: Factors Affecting Surface Water Quality

The list below are potential sources of pollution that may be reasonably expected to impact the quality of stormwater runoff from the site during construction.

- Hydrocarbons from asphalt paving construction
- Oil, fuel, grease and hydraulic fluid from construction equipment and automobiles
- Soil erosion due to site clearing, grading and demolition activities
- Trash, litter and construction debris from workers and construction activities
- Concrete truck washout
- Concrete/masonry
- Fertilizers
- Cleaning solvents

The list below are potential sources of pollution that may be reasonably expected to impact the quality of stormwater runoff from the site after construction or after development.

- Trash and litter typical of daily use from customers and tenants
- Oil, fuel, grease and hydraulic fluid from vehicles parked/traveling onsite
- Dirt and dust from landscape areas and vehicles
- Fertilizers
- Cleaning solvents





Attachment E: Volume and Character of Stormwater

Attachment E: Volume and Character of Stormwater

The Liberty Hill Meetinghouse site will generate stormwater typical of a commercial development, as outlined in the City of Round Rock Criteria Manual. Runoff will increase as a result of the development for all storm events. The proposed 100-year peak stormwater discharge is approximately 33.16 cfs. However, the site features a proposed detention pond that will mitigate this increase in flows and flows ultimately leaving the tract is approximately 31.59 cfs for the 100-year storm. The runoff coefficient Curve Number (CN) changes from 80 to 93 for the project.





Attachment F: Suitability Letter

Department of Infrastructure County Engineer's Office 3151 SE Inner Loop, Ste B Georgetown, TX 78626 T: 512.943.3330 F: 512.943.3335

J. Terron Evertson, PE, DR, CFM



April 8, 2025

The Church of Jesus Christ of Latter-Day Saints 115 Bronco Blvd. Liberty Hill, Texas 78642

RE: 115 Bronco Blvd., Liberty Hill, Texas 78642 S12842 – Sundance Ranch Commercial Sec.2, Lot 1, Acres 6.45

The above referenced property is located within the Edwards Aquifer Contributing Zone.

Based on the surrounding subdivisions and the soil survey for Williamson County and planning material received, this office is able to determine that the soil and site conditions of this lot is suitable to allow the use of on-site sewage facilities (OSSF). It should be noted that this office has not actually studied the physical properties of this site. Site specific conditions such as OSSF setbacks, recharge features, drainage, soil conditions, etc..., will need taken into account in planning any OSSF.

These OSSF's will have to be designed by a professional engineer or a registered sanitarian. An Edwards Aquifer protection plan shall be approved by the appropriate TCEQ regional office before an authorization to construct an OSSF may be issued. The owner will be required to inform each prospective buyer, lessee or renter of the following in writing:

- That an authorization to construct shall be required before an OSSF can be constructed in the subdivision;
- That a notice of approval shall be required for the operation of an OSSF;
- Whether an application for a water pollution abatement plan as defined in Chapter 213 has been made, whether it has been approved and if any restrictions or conditions have been placed on the approval.

If this office can be of further assistance, please do not hesitate to call.

Sincerely

James Lancaster, OS 32397 Williamson County - OSSF



Attachment G: Alternative Secondary Containment Methods



Attachment H: AST Containment Structure Drawings



Attachment I: 20% or Less Impervious Cover Declaration



Attachment J: BMPs for Upgradient Stormwater

Attachment J: BMPs for Upgradient Stormwater

Upgradient flows are intercepted and diverted by use of swales around the proposed BMPs. Therefore, there are no significant upgradient flows that impact the site and no proposed BMPs are planned specifically for upgradient flows. The proposed onsite Batch Detention Pond is sized to treat all onsite flows and impervious cover.





Attachment K: BMPs for On-site Stormwater

Attachment K: BMPs for On-Site Stormwater

Proposed on-site BMPs include one (1) Batch Pond designed in accordance with TCEQ's Technical Guidance Manual (TGM) RG-348. The Batch Pond will be designed as an online facility. For online facilities the principal and emergency spillways must be sized to provide 1.0 foot of freeboard during the 25-year event and to safely pass the flow from the 100-year storm. The water quality volume required in the ponds is t. 11,692 cuft. The overall volume of the pond is 36,752 cuft. Both the 25-year and 100-year storm events are contained within the pond. The Batch Pond is sized to treat a total of 2,420 lbs of TSS generated by the site.

Batch Basins capture and temporarily detain the water quality volume from a storm event, for a period of 12-48 hours, using an automated controller and valve. The Extended Detention outfall details and logic controls can be found on the attached Construction Drawings, reference the Batch Detention Pond Detail Sheets.



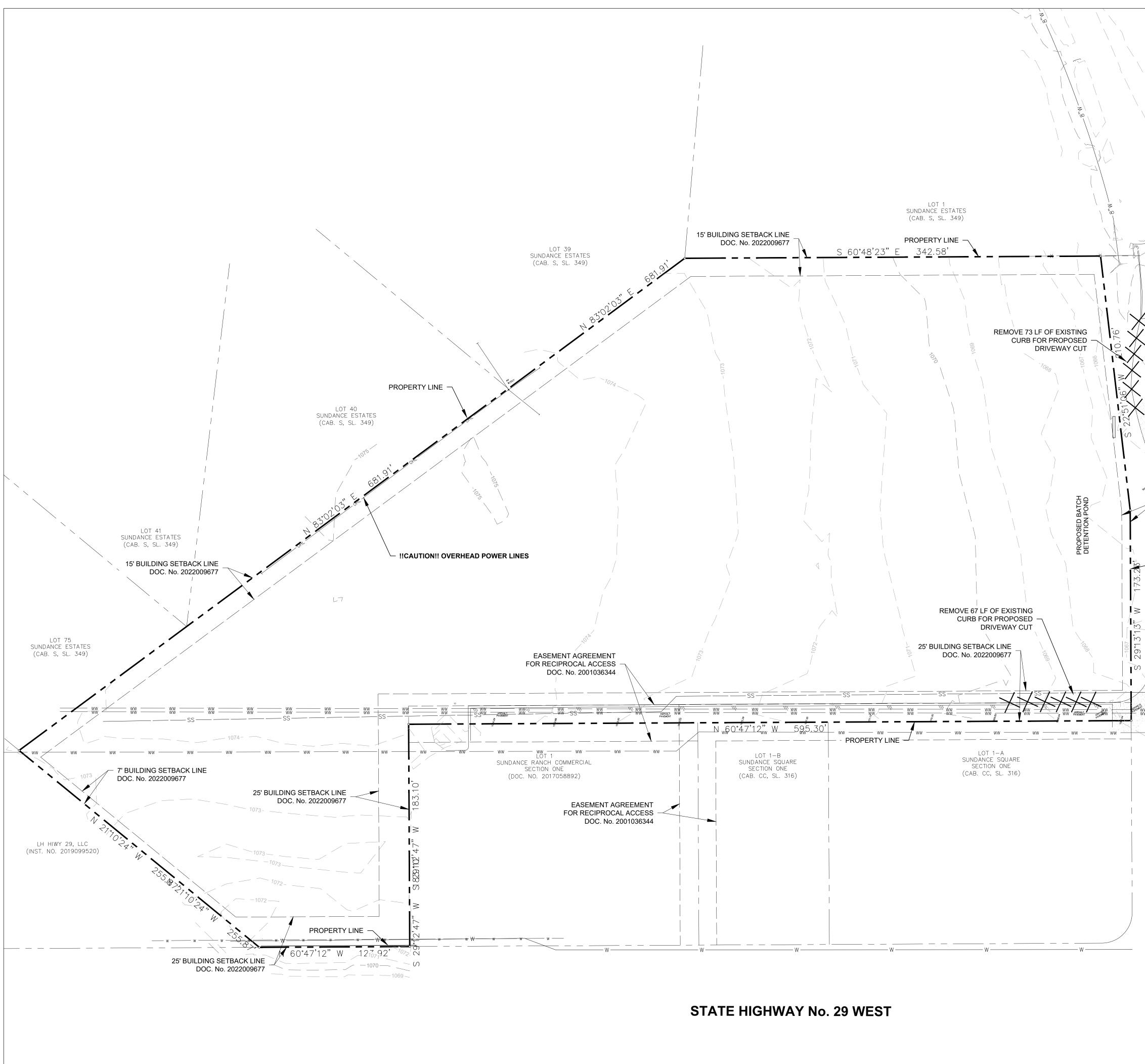


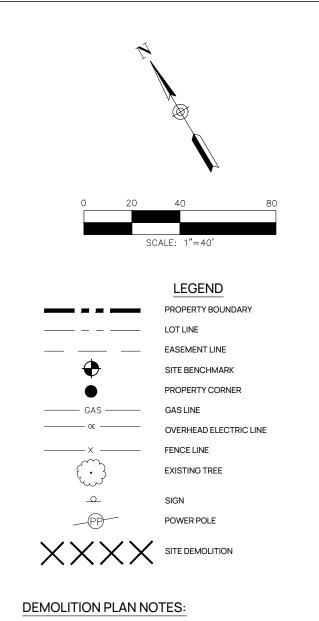
Attachment L: BMPs for Surface Streams

N/A



Attachment M: Construction Plans





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- 1. PRIOR TO START OF CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL CONSTRUCT ALL REQUIRED EROSION CONTROL AND TREE PROTECTION MEASURES AS INDICATED ON STORM WATER POLLUTION PREVENTION PLAN AND/OR LANDSCAPE ARCHITECT DRAWINGS.
- 2. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH LOCAL TV, ELECTRIC, GAS, WATER, SEWER AND PHONE PROVIDERS AS REQUIRED TO PROVIDE SERVICE TO THE PROJECT SITE.
- 3. CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION ACTIVITY (ON OR OFFSITE) FOR THE PROJECT.
- 4. ANY GARBAGE OR DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE.
- 5. REMOVAL, RELOCATION OR DISCONNECTION FROM A UTILITY SERVICE (ELECTRIC, GAS, WATER, SEWER, CABLE, TV, FIBER, ETC.) SHALL BE COORDINATED WITH APPROPRIATE UTILITY SERVICE PROVIDER PRIOR TO START OF DEMOLITION ACTIVITIES.
- 6. CONTRACTOR SHALL PROPERLY DISPOSE OF ANY HAZARDOUS MATERIALS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. FURTHERMORE, HAZARDOUS MATERIALS SHALL BE HANDLED BY PROPERLY LICENSED AND TRAINED HAZARDOUS MATERIAL SUB-CONTRACTORS/INDIVIDUALS.
- CONTRACTOR SHALL COORDINATE ALL REMOVED ITEMS WITH OWNER. CONTRACTOR IS RESPONSIBLE FOR ALL DISPOSAL AND HAULING COSTS AND SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS FOR DISPOSING OF DEMOLISHED MATERIALS.



CONTRACTOR SHALL EXERCISE CAUTION DURING DEMOLITION, EXCAVATION, CLEARING AND CONSTRUCTION ACTIVITIES NEAR OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL COMPLY WITH ALL SAFETY REGULATIONS WHEN OPERATING NEAR POWER LINES.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR, SUB-CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE, OR STRUCTURAL/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, SHALL REVIEW THESE PLANS AND GEOTECHNICAL REPORT, THE INSTALLATION SITES WITHIN THE PROJECT AREA IN ORDER TO IMPLEMENT CONTRACTORS TRENCH **EXCAVATION SAFETY PROTECTION PLAN, SYSTEMS** AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM OSHA STANDARDS, SPECIFICALLY, CONTRACTOR AND/OR RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PLAN IN ACCORDANCE WITH OSHA REGULATIONS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND/OR AROUND THE EXPOSED TRENCH EXCAVATION.



CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION ACTIVITY (ON OR OFFSITE) FOR THE PROJECT.

7' BUILDING SETBACK LINE

ASPHALI

DOC. No. 2022009677

- PROPERTY LINE

BRONC

(100' ROW)

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RD

Sheet:

Date (D-M-Y) 08- APR-2024

Mark 1

Project Number: HCC 013-04

G250-MH-11

Property Number:

EXISTING

CONDITIONS

DEMOLITION

Plan Series:

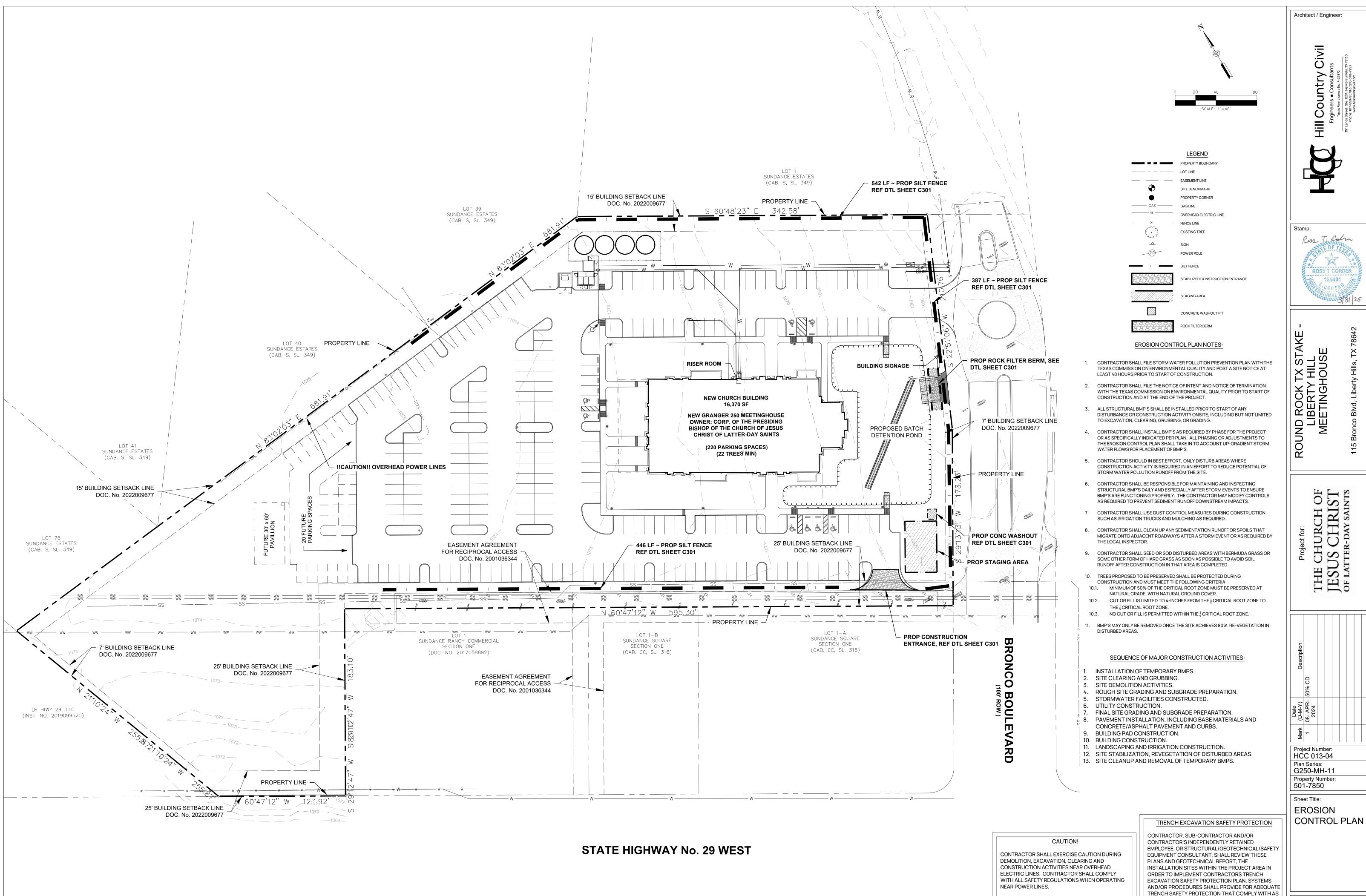
501-7850

Sheet Title:

AND

PLAN

C200



DIG TESS:

CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION ACTIVITY (ON OR OFFSITE) FOR THE PROJECT.

C300

Sheet:

A MINIMUM OSHA STANDARDS, SPECIFICALLY,

SAFETY PLAN IN ACCORDANCE WITH OSHA

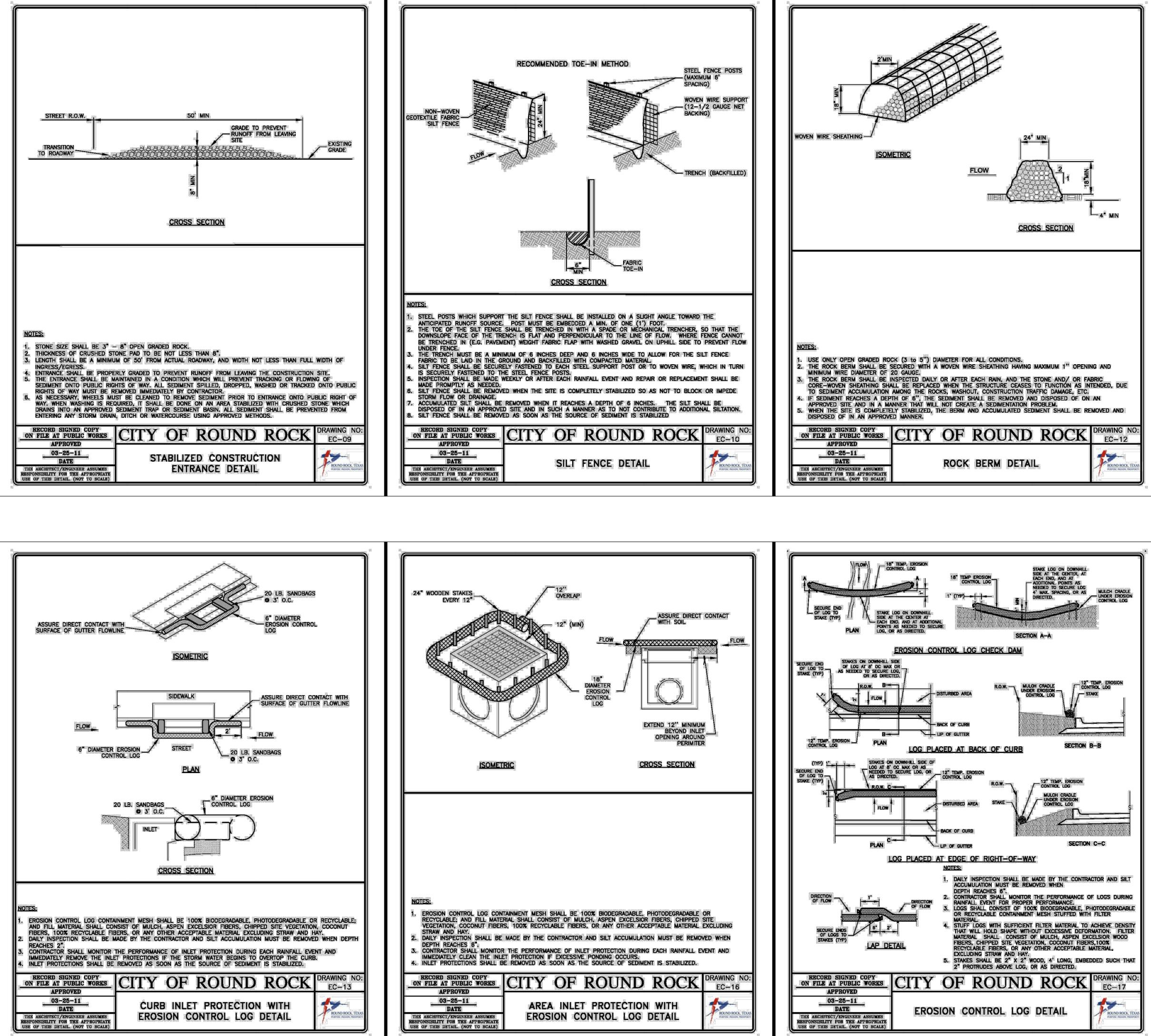
CONTRACTOR AND/OR RETAINED EMPLOYEE OR

REGULATIONS GOVERNING THE PRESENCE AND

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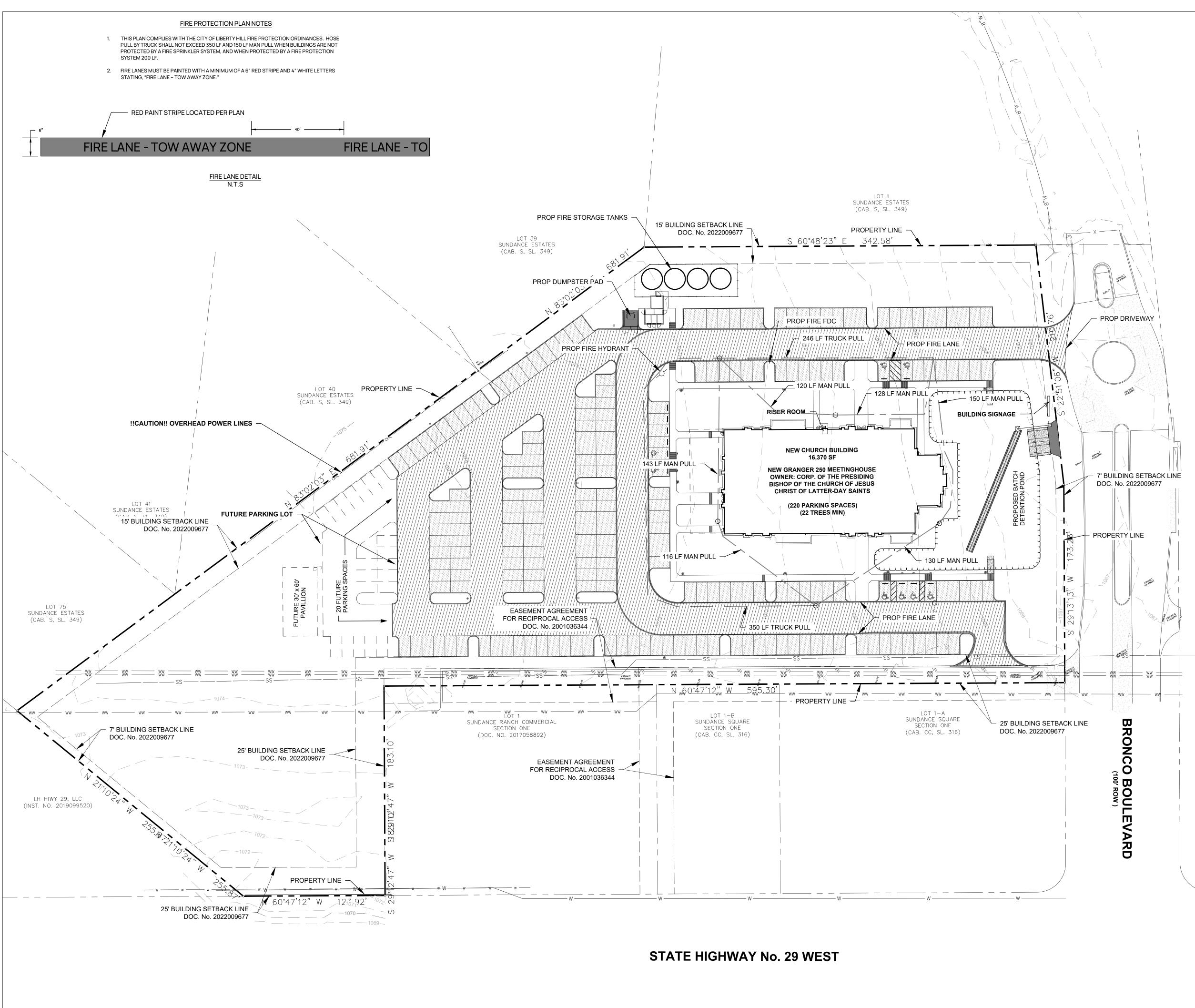
ACTIVITIES OF INDIVIDUALS WORKING IN AND/OR

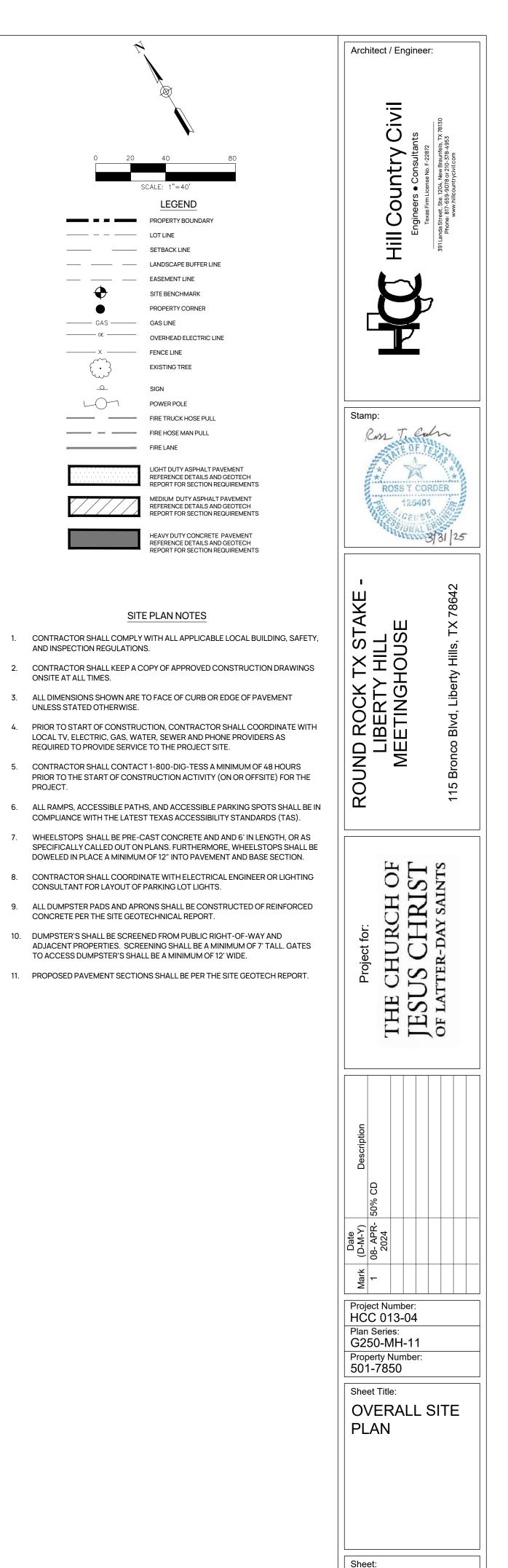
SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH



ON DOWNHILL HE CENTER, AT AND AT POINTS AS SECURE LOG PACING, OR AS UNDER EROSION CONTROL LOG
SECTION B-B
MP. EROSION DL LOG H CRADLE R EROSION ROL LOG CONCON SECTION C-C
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LONG, EMBEDDED SUCH THAT RECTED.
AIL EC-17 ROUND ROCK, TEXAS PRIPOSE, MASSION, PROSPRIATY

Archite	Hill Country Civil Engineers • Consultants Texas Firm License No. F-2872	. TX 78130
Stamp	N T. C.	KDER 8/31 25
ROUND ROCK TX STAKE -	MEETINGHOUSE	115 Bronco Blvd, Liberty Hills, TX 78642
Project for:	THE CHURCH OF JESUS CHRIST	OF LATTER-DAY SAINTS
HCC Plan S G250 Proper 501-7 Sheet ERC CON	Number: 013-04 eries: 0-MH-11 ty Number: 7850	
Sheet:	C30 ⁷]





SCALE: 1"=40

SETBACK LINE

SITE BENCHMARK PROPERTY CORNER

EXISTING TREE

POWER POLE

FIRE LANE

SITE PLAN NOTES

SIGN

FIRE TRUCK HOSE PULL FIRE HOSE MAN PULL

LANDSCAPE BUFFER LINE EASEMENT LINE

OVERHEAD ELECTRIC LINE

PROPERTY BOUNDARY

_____ _ _ _ _ LOT LINE

------ GAS ------ GAS LINE

FENCE LINE

_____ OE _____

 $\Box O$

AND INSPECTION REGULATIONS.

UNLESS STATED OTHERWISE.

CONSULTANT FOR LAYOUT OF PARKING LOT LIGHTS.

CONCRETE PER THE SITE GEOTECHNICAL REPORT.

ONSITE AT ALL TIMES.

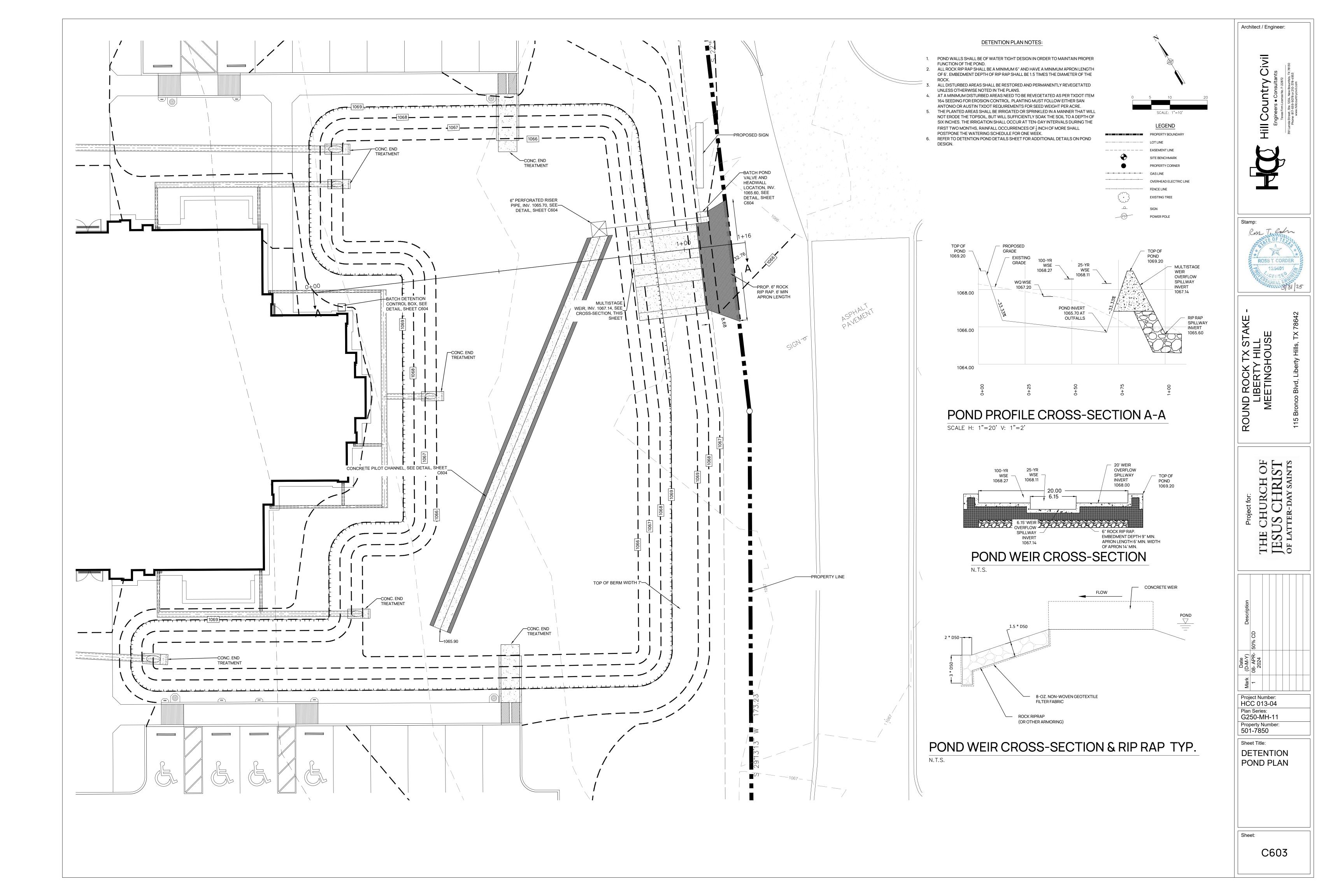
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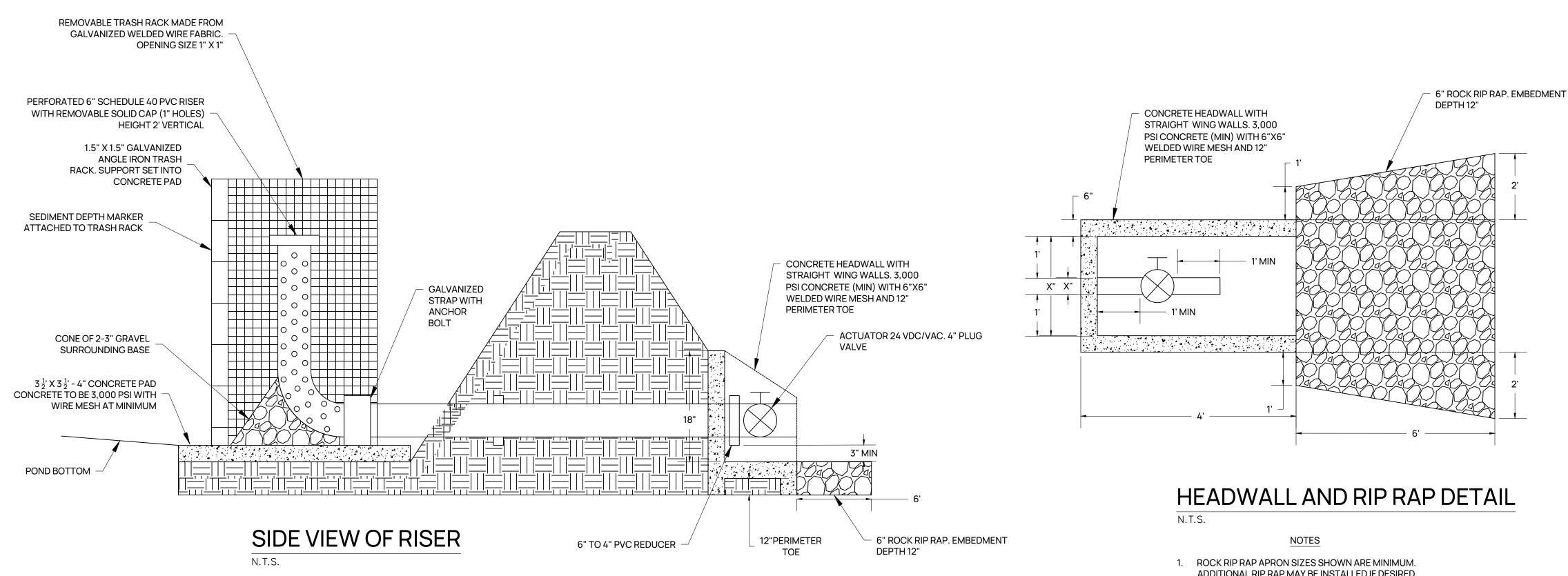
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PROJECT.

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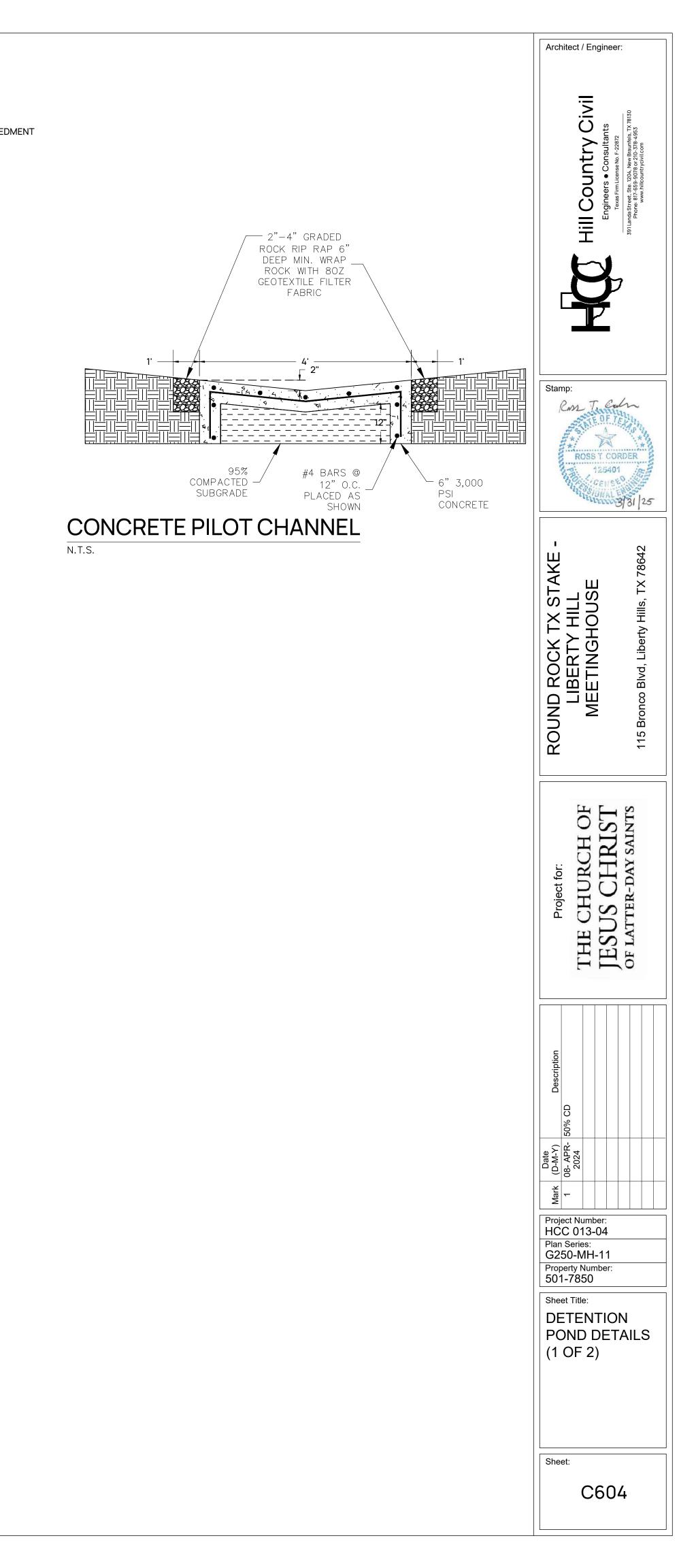




NOTES

1. CLAY LINER TO MEET SPECIFICATIONS FOUND IN THE TCEQ RG-348 SECTION 3.4.2 BASIN LINING REQUIREMENTS. A GEOTEXTILE LINER MAY BE USED IN PLACE OF THE CLAY LINER. ADDITIONAL SPECS PROVIDED ON THIS SHEET.

ADDITIONAL RIP RAP MAY BE INSTALLED IF DESIRED.



Batch Detention Pond Specification Submittal

Preface – The following specifications describe the general function and components of a typical Texas Commission on Environmental Quality (TCEQ) approved batch detention pond. The system operates as an "off-grid" electronically controlled solar powered storm water management unit. This batch detention system uses a water level sensor, solar power panel, logic controller w/ microprocessor, and a plug valve with actuator to meet batch detention standards as set by the TCEQ.

Certification – All of the components described below meet TCEQ's batch detention specifications for a 91% Total Suspended Solid removal rate. See attached logic flow chart for overview of system cycles.

Components:

- Valve 4" or 6", cast iron, actuated by an electric motor, valve placed in concrete vault when installed below ground, valve placed on concrete pad due to weight
- Actuator low voltage motor mounted on top of valve, bolted in place to concrete vault ceiling • Extended bonnet - Cold rolled steel stem extension that connects valve to actuator when valve
- is used in subgrade applications, stainless steel flanges
- Main board 24-volt panel that controls all aspects of batch control system • Batteries – two 12-volt 35 amp/hr. sealed lead acid (SLA) connected in series
- Solar Panel 24-volt 30-watt. One charge controller regulates solar panel power for batch
- control system. www.txrws.com • Sensor 1 – float switch – mounted on trash rack that indicates when water present in pond and when pond is empty • Sensor 2 – position sensor in actuator – determines the orientation of the valve to control positions for start and stop

Controller Programming – All functions of the system are factory programmed which allows the control box, valve, and actuator to received and send commands on their own based on environmental conditions without any human interaction. Manual mode to override switch to open and close valve by flip of a switch and to test all components during inspections. Reset button to reset controller.

Alerts - The main board will illuminate an exterior red light for the following conditions:

- Improper valve function
- Low battery
- Sensor 1 float switch inoperable

Manual Control - In case of electronic inoperability or failed actuator, an effortless clutchless handwheel on the actuator can be turned to open or close valve manually, easy-to-read position indicator displays open/closed valve position

Service Schedule:

• Batteries – Sealed lead acid batteries can have a design life of anywhere from 3-5 years. Many factors affect service life of the battery, temperature being ones of those factors. Recommended replacement is every 3-5 years. Batteries can be tested annually to determine remaining life expectancy. Battery terminals to be inspected annually. • Solar Panel(s) - Solar panels last 25-30 years. Annual inspection of the batch detention system should verify the surface of the solar panel is clean, facing south, is secure, and has no debris/trees blocking panel from sun.

Quality Installation - Rainwater Specialists, LLC agrees to perform in a good and workmanlike manner. All work detailed in the detailed scope of work sheet shall guarantee the installation of all products and material according to manufacturer's written instructions and construction industry standards.

Valworx

Electric Actuated Butterfly Valves SERIES Ductile Iron Lug Body ASME 150# 5673 2" to 6" Pipe

Features

- Direct mount lug butterfly valve with ISO5211 mount
- Epoxy coated ductile iron body with 316 SS disc
- Unique wave line seat reduces torque and extends seal life
- Visual valve position indicator • Rugged aluminum Type 4X weatherproof actuator
- Heavy duty motors with overload protection
- Thermostatically controlled anti-condensation heater
- Manual override with end of travel mechanical stops
- Two auxiliary position confirmation limit switches
- EPS Electronic Positioning System models available
- Actuators CSA Listed per UL429 and CSA C22.2

Applications

EPDM seals typically used for on-off control of water and other compatible media. NBR (Buna-N) seals typically used for air, oil, vacuum and other compatible media. FPM (Viton) seals typically used for on-off control of hydrocarbons, oils and other compatible chemicals/media. Suitable for use with ANSI/ASME Class 125/150 pipe flanges. Actuators designed for 70% duty cycle.

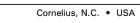
Operation

On-Off electric actuated valve uses power-to-open and power-to-close, stays in the last known position with loss of power. On receipt of a continuous voltage signal, the motor runs and via a rugged all metal gear system rotates the ball 90°. The motor is automatically stopped by internal cams striking limit switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the valve position. Power connections direct to terminal strip via included cable connector, or optional 1/2" NPT conduit adapters.

Construction

Valve Body	Epoxy coated ductile iron
Disc	316 stainless steel CF8M
Disc Seat/Liner	EPDM, NBR (Buna-N) or FPM (Viton)
Stem/Stem Seals	420 stainless steel / (2) v-ring, same material as seat
Gear Drive	Heavy duty alloy steel and aluminum bronze, self locking
Actuator Enclosure	Aluminum, polyester powder painted, Type 4X, IP67
Visual Valve Position Indicator	Clear polycarbonate window, ,red/yellow open-closed
Fasteners	Stainless Steel
Auxiliary Limit Switches	2 x SPDT (125VAC/5A)

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For additional

information please

contact

512-677-7246

Rainwater Specialists

Electric operated direct mount butterfly valves with epoxy- coated ductile iron lug body are designed for commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 150 flanges and includes integral molded flange gaskets. Disc is precision machined 316SS. Two piece stem and disc design enhances the flow capacity and reduces turbulence. Rugged corrosion resistant electric actuator includes a manual override, valve position confirmation switches, thermostatically controlled anticondensation heater, and over-torque protection.

www.valworx.com

Approvals

Actuators CSA Listed to:

- UL429 and CSA C22.2 no 139
- Type 4X, IP67 weatherproof
- enclosure
- CE conformance
- ISO5211 Mounting Valves
- Design complies with API-609, MSS SP-
- Tests per API-598, AWWA C502-87
- CE according to PED 97/23/EC, ISO5208



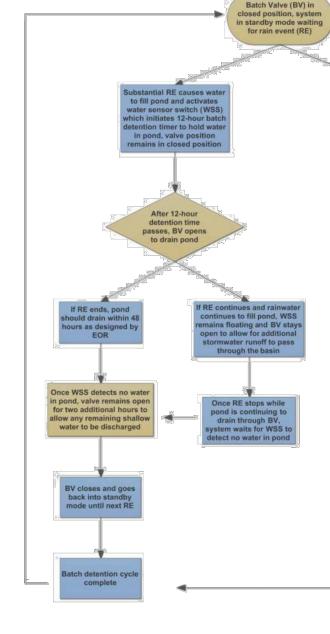
Pressure Rating Pressure Rating: 230 PSI (16 Bar), Vacuum 29in Hg

Temperature Rating

Actuator Temperature Rating: -13 to 131° F (-25 to 55° C) Valve Temperature Rating: EPDM seals 0 to 248° F (-18 to 120°C) NBR (Buna-N) seals 5 to 185° F (-15 to 85°C) FPM (Viton) seals 5 to 338° F (-15 to 170°C)

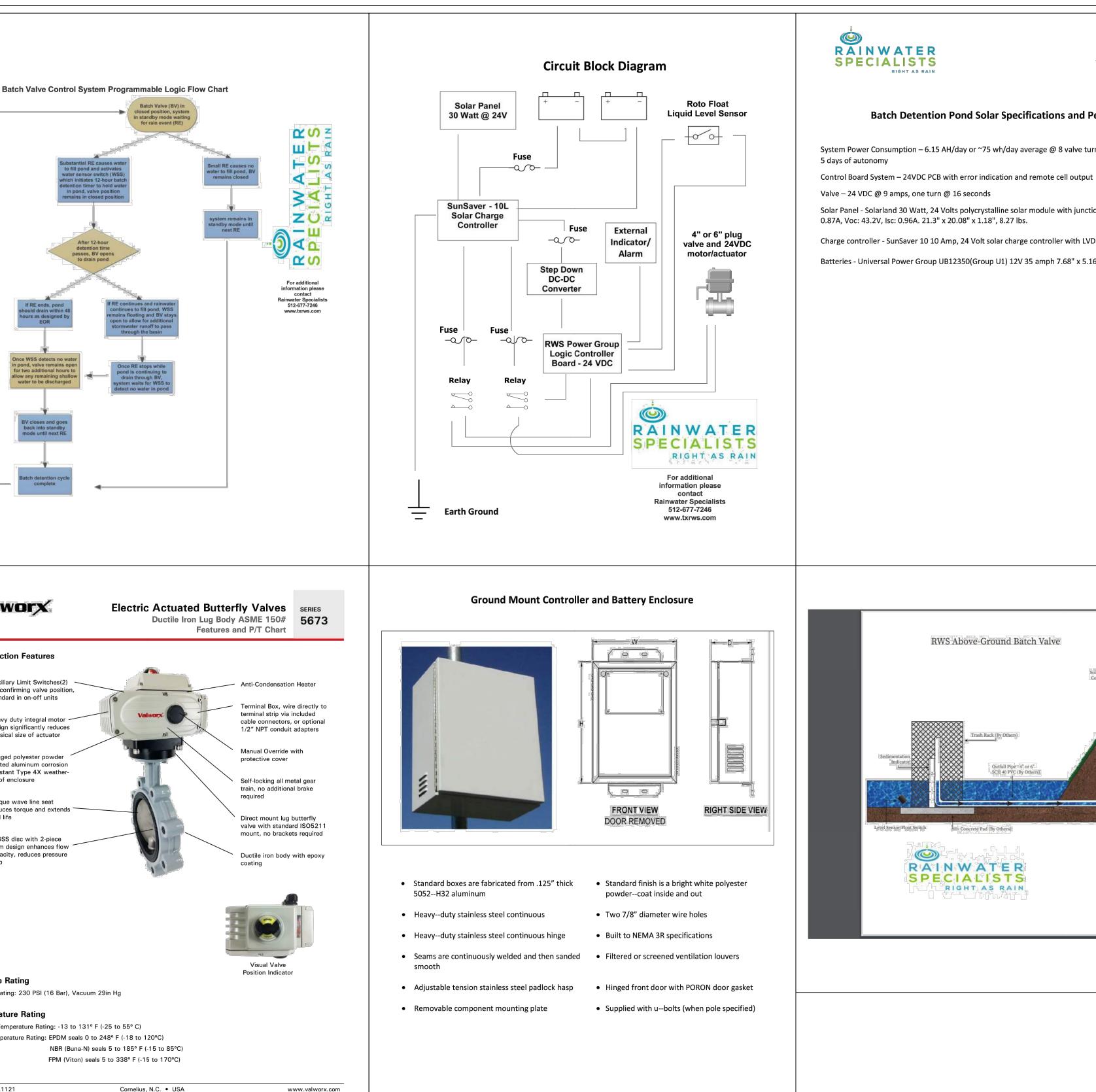
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Valworx





Rainwater Specialists, LLC 15001 Crosscreek Dr. Austin, TX 78737 www.rainwaterspecialists.com 512-677-RAIN

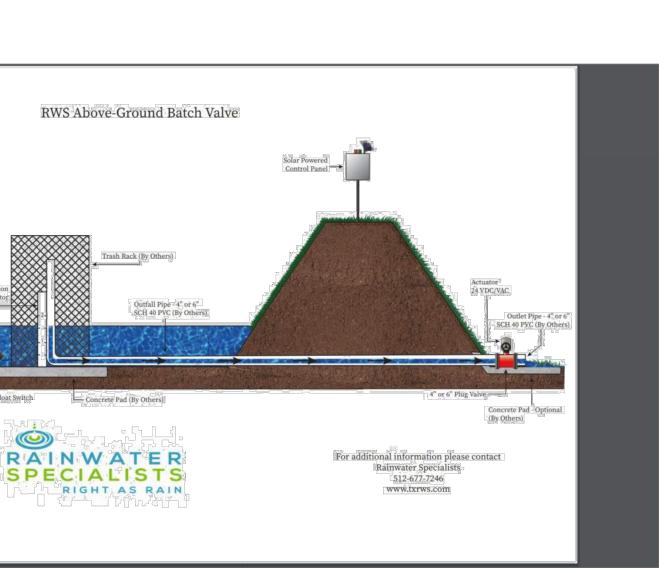
Batch Detention Pond Solar Specifications and Performance

System Power Consumption – 6.15 AH/day or ~75 wh/day average @ 8 valve turns maximum/week, sized for

Solar Panel - Solarland 30 Watt, 24 Volts polycrystalline solar module with junction box. Vmp: 34.4V, Imp:

Charge controller - SunSaver 10 10 Amp, 24 Volt solar charge controller with LVD 6' x 2.18' x 1.32'

Batteries - Universal Power Group UB12350(Group U1) 12V 35 amph 7.68" x 5.16" x 6.14" 23.15lbs



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Stam	ROSS T. COL	KDER 131 25
ROUND ROCK TX STAKE -	LIBERTY HILL MEETINGHOUSE	115 Bronco Blvd, Liberty Hills, TX 78642
Project for:	THE CHURCH OF JESUS CHRIST	OF LATTER-DAY SAINTS
Projee HCC Plan 3 G25 Prope 501- Shee DE PO	ct Number: Ct Number: Ct Number: Ct Number: Ct Number: Co-MH-11 Series: Co-MH-11 Series: Co-MH-11 TENTIO TENTIO ND DET OF 2)	
Shee	t: C60	5

TSS Removal Calculations 04-20-2009			Project Name	Liberty Hill Meetinghouse	
			Date Prepared	3/21/2025	
Additional information is provided for cells with a red triangle Fext shown in blue indicate location of instructions in the Technical Characters shown in red are data entry fields.	I Guidance	Manual - RO	6-348.		
Characters shown in black (Bold) are calculated fields. Chang			remove the equa		
		from RG-348		Pages 3-27 to 3-30	
Page 3-29 Equation 3.3: L _M =					
A _N =	Net increase	in impervious	area for the project	d development = 80% of increased I	oad
		ual precipitatio	n, inches		
Site Data: Determine Required Load Removal Based on the Entire Project County = Total project area included in plan *=	Williamson 6.43	acres			
Predevelopment impervious area within the limits of the plan * = Total post-development impervious area within the limits of the plan * =	0.19	acres			
Total post-development impervious cover fraction * = P =	0.46	inches			
L _{M TOTAL PROJECT} =	2420	lbs.			
The values entered in these fields should be for the total project area.					
Number of drainage basins / outfalls areas leaving the plan area =	1				
. Drainage Basin Parameters (This information should be provided for eac	h hasin).				
Drainage Basin/Outfall Area No. =					
Total drainage basin/outfall area =	3.83	acres			
Predevelopment impervious area within drainage basin/outfall area = Post-development impervious area within drainage basin/outfall area =	2.86	acres			
Post-development impervious fraction within drainage basin/outfall area = $$L_{\rm M}$ THis BASIN}$ =	0.75 2489	lbs.			
. Indicate the proposed BMP Code for this basin.					
Proposed BMP = Removal efficiency =	Batch Deter 91	ntion percent		Aqualogic Cartridge Filter	
				Bioretention Contech StormFilter	
				Constructed Wetland Extended Detention Grassy Swale	
				Retention / Irrigation Sand Filter	
				Stormceptor Vegetated Filter Strips	
				Vortechs Wet Basin	
				Wet Vault Batch Detention	
L Calculate Maximum TSS Load Removed (L _a) for this Drainage Basin by t RG-348 Page 3-33 Equation 3.7: L _R =			24.6 . 4		
			in the BMP catchmen		
A ₁ =	Impervious a	rea proposed i	n the BMP catchment	area	
			the BMP catchment ar s catchment area by t		
A _c =	3.83	acres			
A _i = A _p =	2.86 0.97	acres acres			
L _R =	2897	lbs			
i. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall a					
Desired L _{M THIS BASIN} =					
	2420	lbs.			
F =	2420 0.84	lbs.			
	0.84		Calculations from RG	-348 Pages 3-34 to 3-36	
F=	0.84		Calculations from RG	-348 Pages 3-34 to 3-36	
\ensuremath{F} = . Calculate Capture Volume required by the BMP Type for this drainage ba	0.84 Isin / outfall	area.	Calculations from RG	-348 Pages 3-34 to 3-36	
F = . Calculate Capture Volume required by the BMP Type for this drainage ba Rainfal Dagh = Post Development Runoff Coefficient = On-site Water Quality Volume =	0.84 Isin / outfall 1.26 0.56 9743	area. inches cubic feet		+348 Pages 3-34 to 3-36	
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F = . Calculate Capture Volume required by the BMP Type for this drainage ba Rainfal Dagh = Post Development Runoff Coefficient = On-site Water Quality Volume =	0.84 1.26 0.56 9743 Calculations 0.00	area. inches cubic feet		-348 Pages 3-34 to 3-36	
F = . Calculate Capture Volume required by the BMP Type for this drainage ba Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP =	0.84 1.26 0.56 9743 Calculations 0.00 0.00 0.00	area. inches cubic feet from RG-348 acres		-348 Pages 3-34 to 3-36	
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F =	0.84 1.26 0.56 9743 Calculations 0.00 0.00 0.00 0.00 0.00 11692 11692 11692 11692 11692	area. inches cubic feet from RG-348 acres acres cubic feet cubic feet e selected BM Required in R(Pages 3-36 to 3-37 P.		
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F = . Activate Capture Volume required by the BMP Type for this drainage ba . Rainfail Dapta = . Rainfail Capture Volume (required water quality volume) = . Rainfail Capture Volume (required water quality volume) = . Rainfail Capture Volume (required water quality volume) = . Rainfail Capture Volume (required water quality volume) = . Rainfail Capture Volume (required water quality volume) = . Rainfail Capture Volume (required water quality volume) = . Rainfail Marting Types no capture (all CS will show NA	0.84 1.26 0.56 9743 Calculations 0.00 0.00 0 0 0 0 0 0 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 11692 116	area. inches cubic feet from RG-348 acres acres cubic feet cubic feet cubic feet cubic feet	Pages 3-36 to 3-37 P. 9-3-348	0.27 Acre-ft Pages 3-42 to 3-46	
F = . Calculate Capture Volume required by the BMP Type for this drainage but 	0.84 1.26 0.56 0.56 0.00 0.00 0.00 0.00 0.00 1949 11692 ume(s) for th Designed as NA 0.1	area. inches cubic feet from RG-348 acres acres cubic feet cubic feet e selected BM Required in R(Pages 3-36 to 3-37 P. 9-3-348	0.27 Acre-ft	of 0.4
F = . Advalues Capture Volume required by the BMP Types for this daminage bas 	0.84 1.26 0.56 9743 Calculations 0.00 0.00 0.00 0.00 0.00 11692 11692 11692 NA 0.1 NA NA	area. inches cubic feet from RG-348 acres acres cubic feet oubic feet cubic feet cubic feet cubic feet cubic feet cubic feet	Pages 3-36 to 3-37 P. 3-348 Enter determined pr	0.27 Acre-ft Pages 3-42 to 3-46 armeability rate or assumed value	of 0.1
F = . Activate Capture Volume required by the BMP Type for this drainage be	0.84 asin / outfall. 1.26 0.56 9743 Calculations Calculations 0.00 0.00 0.00 0.00 0.00 0.00 1949 11692 sime(s) for th Designed as Designed as	area. inches cubic feet from RG-348 acres acres cubic feet cubic feet selected BMR Required in RR cubic feet acres Required in RR	Pages 3-36 to 3-37 P. 3-348 Enter determined pr	0.27 Acre-ft Pages 3-42 to 3-46	of 0.1
F = معالم المعالم المعا المعالم المعالم ال	0.84 1.26 0.56 973 Calculations Calculations 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	arrea. inches cubic feet from RG-348 acres cubic feet eubic feet selected BMR Required in RI cubic feet inhr square feet acres cubic feet	Pages 3-36 to 3-37 P. 3-348 Enter determined pr 3-348	0.27 Acre-ft Pages 3-42 to 3-46 ermeability rate or assumed value Pages 3-46 to 3-51	of 0.1
F = . Activate Capture Volume required by the BMP Type for this drainage bar	0.84 1.26 0.56 973 Calculations Calculations 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	area. inches cubic feet from RG-348 acres acres cubic feet cubic feet selected BMR Required in RR cubic feet acres Required in RR	Pages 3-36 to 3-37 P. 3-348 Enter determined pr 3-348	0.27 Acre-ft Pages 3-42 to 3-46 armeability rate or assumed value	of 0.1
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F = • A clouded Capture Volume required by the BMP Types for this deniances by Beneficial and the second of th	0.84 1.26 0.56 1.26 0.56 0.00 0.00 0.00 0.00 0.00 0.00 0.0	area. inches cubic feet from RG-348 acres cubic feet cubic feet cubic feet infhr square feet acres Required in RI cubic feet Required in RI cubic feet	Pages 3-36 to 3-37 P. 3-348 Enter determined pr 3-348	0.27 Acre-ft Pages 3-42 to 3-46 ermeability rate or assumed value Pages 3-46 to 3-51	of 0.1
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F =	0.84 1.26 0.55 9743 Calcutations Calcutations 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	arrea. inches cubic feet from R0-348 acres cubic feet oubic feet selected BMR Required in R1 cubic feet acres acres cubic feet acres acres cubic feet square feet square feet square feet	Pages 3-36 to 3-37 P. 3-348 Enter determined pr 3-348	0.27 Acre-ft Pages 3.42 to 3.46 armeability rate or assumed value Pages 3.46 to 3.51 Pages 3.58 to 3.63	of 0.1
F = Actionates Captures Volume required by the BMP Types for this deninges be . Rainfall Depth = . Rainf	0.84 1.26 0.55 9743 Calcutations Calcutations 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	arrea. inches cubic feet from R0-348 acres cubic feet oubic feet selected BMR Required in R1 cubic feet acres acres cubic feet acres acres cubic feet square feet square feet square feet	Pages 3-36 to 3-37 P. 3-348 Enter determined p 3-348 3-348	0.27 Acre-ft Pages 3.42 to 3.46 armeability rate or assumed value Pages 3.46 to 3.51 Pages 3.58 to 3.63	of 0.1
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F =	0.84 1.26 0.56 9743 Calcutations Calcutations Calcutations 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	arrea. inches cubic feet from R0-349 acres cubic feet elected BMR Required in R1 cubic feet inhr square feet acres Required in R1 cubic feet cubic feet cubic feet square feet square feet square feet	Pages 3-36 to 3-37 P. 3-348 Enter determined p 3-348 3-348	0.27 Acre-ft Pages 3.42 to 3.46 armeability rate or assumed value Pages 3.46 to 3.51 Pages 3.58 to 3.63	of 0.1
F = * Advalate Capture Volume required by the BMP Types for this deninges by * Call Decempoint Read Capture Captur	0.84 1.26 0.56 1.26 0.56 0.00 0.00 0.00 0.00 0.00 0.00 0.0	arrea. inches cubic feet from RG-348 acres cubic feet cubic feet cubic feet infhr square feet square feet square feet square feet square feet square feet square feet	Pages 3-36 to 3-37 P. 3-348 Enter determined pr 3-348 3-348 For minimum water For minimum water For minimum water	0 27 Acre-ft Pages 3-42 to 3-46 emeability rate or assumed value Pages 3-46 to 3-51 Pages 3-58 to 3-63 depth of 2 feet depth of 2 feet	of 0.1
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11. Wet Basins	Designed as				ages 3-66 to 3-71
Required capacity of Permanent Pool = Required capacity at WQV Elevation =	NA NA	cubic feet cubic feet	Total Capa	city should	ity is 1.20 times the WQV be the Permanent Pool Capacity
			plus a sec		
12. Constructed Wetlands	Designed as	Required in R	G-348	Pa	ages 3-71 to 3-73
Required Water Quality Volume for Constructed Wetlands =	NA	cubic feet			
13. AguaLogic [™] Cartridge System	Designed as	Required in R	G-348	P	toes 3-74 to 3-78
** 2005 Technical Guidance Manual (RG-348) does not exempt the required	d 20% increas	e with mainte	nance cont	act with Aqu	JaLogic [™] .
Required Sedimentation chamber capacity =	NA NA	cubic feet			
Filter canisters (FCs) to treat WQV = Filter basin area (RIA _F) =	NA	cartridges square feet			
14. Stormwater Management StormFilter® by CONTECH					
Required Water Quality Volume for Contech StormFilter System =	NA	cubic feet			
THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMO	VALS ARE BA			S - NOT CAL	CULATED WATER OUALITY VOLUM
15. Grassy Swales	Designed as				ages 3-51 to 3-54
Design parameters for the swale:					
Drainage Area to be Treated by the Swale = A =		7 acres			
Drainage Area to be i reated by the Swale = A = Impervious Cover in Drainage Area = Rainfall intensity = i =	 0.1 	5 acres 1 in/hr			
Sude Slope = Side Slope (z) =	0.0	1 ft/ft 3			
Design Water Depth = y = Weighted Runoff Coefficient = C =	0.3	13 ft 16			
-					
A _{CS} = cross-sectional area of flow in Swale = P _w = Wetted Perimeter =	2.0 7.3	19 sf 17 feet			
R_{H} = hydraulic radius of flow cross-section = A_{CS}/P_{W} = n = Manning's roughness coefficient =	= 0.2	18 feet			
15A. Using the Method Described in the RG-348	0				
Manning's Equation: Q = <u>1.49</u> A _{CS} R _H ²³ S ^{0.1} n	5				
$b = \frac{0.134 \times Q}{y^{167}} - zy$	= 5.1	6 feet			
y 5 O = CiA =	= 07	'5 cfs			
To calculate the flow velocity in the swale:	- 0	0.010			
 V (Velocity of Flow in the swale) = Q/A_{CS} = 	= 0.3	6 ft/sec			
To calculate the resulting swale length:					
L = Minimum Swale Length = V (ft/sec) * 300 (sec) =	107.2	4 feet			
If any of the resulting values do not meet the design requireme	nt set forth in F	G-348, the de	əsign parame	ters must be	modified and the solver rerun.
15B. Alternative Method using Excel Solver					
13D. Alternative method using excel Solver					
Design Q = CiA =		5 cfs			
Manning's Equation Q = Swale Width=	= 0.1 = 6.0	'6 cfs 10 ft		Error 1 =	-0.01
Instructions are provided to the right (green comments).					
Flow Velocity Minimum Length =	/ 0.3 = 107.2	16 ft/s 14 ft			
Instructions are provided to the right (blue comments).					
Design Width =		6 ft 6 cfs		Error 2 =	-0.01
Design Discharge = Design Depth Flow Velocity =	= 0.3	6 cfs 13 ft 12 cfs		Error 2 =	-0.01
Minimum Length =	97.4	8 ft			
If any of the resulting values do not meet the design requirement set forth If any of the resulting values still do not meet the design requirement set f	in RG-348, th orth in RG-34	e design para 8, widening t	ameters may he swale bo	r be modified ttom value m	I and the solver rerun. ay not be possible.
16. Vegetated Filter Strips	Designed as	Required in R	G-348	Pa	ages 3-55 to 3-57
There are no calculations required for determining the load or size of vege The 80% removal is provided when the contributing drainage area does no	stative filter st	rips.	of flow) and		
the sheet flow leaving the impervious cover is directed across 15 feet of e across 50 feet of natural vegetation with a maximum slope of 10%. There	ngineered filt	er strips with	maximum s	lope of 20%	or Is 20%
If vegetative filter strips are proposed for an interim permanent BMP, they					
17. Wet Vaults	Designed as	Required in R	G-348	Pa	ages 3-30 to 3-32 & 3-79
Required Load Removal Based upon Equation 3.3 = First calculate the load removal at 1.1 in/hour	= NA	IDS			
RG-348 Page 3-30 Equation 3.4: Q = CiA					
C = runoff coefficient for the drainage area =		8	C = Runof	Coefficient	= 0.546 (IC) ² + 0.328 (IC) + 0.03
i = design rainfall intensity = A = drainage area in acres =	- 1	1 in/hour 1 acres			
Q = flow rate in cubic feet per second =	= 0.6	i4 cubic feet/s	ес		
RG-348 Page 3-31 Equation 3.5: Vor = Q/A	\				
Q = Runoff rate calculated above = A = Water surface area in the wet vault =		4 cubic feet/s			
A = water surface area in the wet valut = V_{cre} = Overflow Rate =		0 square teet			
V _{OR} - Overhow Rate - Percent TSS Removal from Figure 3-1 (RG-348 Page 3-31) =		3 percent			
Load removed by Wet Vault					
If a bypass occurs at a rainfall intensity of less than 1.1 in/hours					
Calculate the efficiency reduction for the actual rainfall intensity rate					
Actual Rainfall Intensity at which Wet Vault bypass Occurs =		5 in/hour			
Fraction of rainfall treated from Figure 3-2 RG-348 Page 3-32 = Efficiency Reduction for Actual Rainfall Intensity =	= 0.1 = 0.8	5 percent 3 percent			
Resultant TSS Load removed by Wet Vault =	#VALUE!	lbs			
18. Permeable Concrete	Designed as	Required in R	G-348	P	ages 3-79 to 3-83
	0.000				-

PERMEABLE CONCRETE MAY ONLY BE USED ON THE CONTRIBUTING ZONE

First highlight Cell F219 (Error 1 value). The equation showing in the fc screen for Cell F219 should be "= \$C\$217.\$C\$219" Then click on "Toole" and "Solver". The "Solver Parameters" screen pops up. The value in the "Sol Target cell "solub de \$F\$219 The value in the "By Changing Cells" should be \$C\$220 Click on solve.

The resulting "Swale Width" must be less than 10 feet to meet the requirements of the TGM. If the resulting "Swale Width" exceeds 10 feet then the design parameters must be revised and the solver run again.

I have produced as instruction above: If you would like to increase the bottom width of the trapezoidal swale (b): Excei can simultaneously solve the "Design Or (C217) vs "Design Discharge" (C223) by varying the "Design Depth" (C233). The required "Design Depth" for a 10-doot bottom width occurs when the "Design Or (C217) = the "Design Discharge" (C232). First set the desired bottom width in Cell C231. Highlight Cell F232. The equation showing in the fx screen for Cell F232 should be "= \$C\$217-4C\$232"

The resulting "Design Depth" must be equal to or less than 0.33 feet to meet the requirements of the TGM. If the resulting "Design Depth" exceeds 0.33 feet then the design parameters must be revised and the solver run again. First set the desired bottom within to Cell C231. Highlight Cell F232. The equation showing in the fx screen for Cell F232 should be "= \$C\$217.\$C\$232" Click on "Tools" and "Solver". The "Solver Parameters" screen por pub. The value in the "Sort Target cell" should be \$F\$232. The value in the "Sort Target cell" should be \$F\$232. "Error 2" The value in the "Sort Target cell" should be \$C\$233. "Design Depth" Click on solve.

The resulting "Design Depth" must be equal to or less than 0.33 feet to meet the requirements of the TGM. If the resulting "Design Depth" exceeds 0.33 feet then the design parameters must be revised and the solver run again.

If there is not the option for "Solver" under "Tools" Click on "Tools" and "Add Ins" and then check "Solver Add-in" Then proceed as instructed above.

Click on "Tools" and "Solver". The "Solver Parameters" screen pops up. The value in the "Set Target cell" should be SS232 "Error 27 The value in the "By Changing Cells" should be SS233 "Design Depth" Click on solve.

To solve for bottom width of the trapezoidal availe (b) using the Excel solver: Excel can simultaneously solve the "Design Q" (C217) vs "Manning's Q" (C219) by varying the "Swale Width" (C220). The required "Swale Width" occurs when the "Design Q" = "Manning's Q"

19. BMPs Inst	talled in a Series		Designed as	Required in R	G-348 Pages 3-32
Michael E. Barrett, Ph.D., P.E. recommended that the			cient for E ₂ b	e changed fro	om 0.5 to 0.65 on May 3, 2006
	$E_{TOT} = [1 - ((1 - E_1) \times (1 - 0.65E_2) \times (1 - 0.25E_3))] \times 100 =$		93.3	6 percent	NET EFFICIENCY OF THE BMPs IN THE SERIES
	EFFICIENCY OF FIRST BMP IN THE SERIES = E, =		85.0	0 percent	
	EFFICIENCY (DF THE SECOND BMP IN THE SERIES = E_2 =	E ₂ = 70.00 percent		
	EFFICIENC	EFFICIENCY OF THE THIRD BMP IN THE SERIES = $E_{\!\scriptscriptstyle B}$ =		0 percent	
	THEREFORE, THE NET LOAD REMOVAL WOUL (A, AND Ap VALUES ARE FROM SECTION 3 ABO				
		L _R = E _{TOT} X P X (A ₁ X 34.6 X A _p X0.54) =	2971.9	1 lbs	
20. Stormcep	tor				
	R BMP Sizing	tequired TSS Removal in BMP Drainage Area= Impervious Cover Overtreatment= TSS Removal for Uncaptured Area =	NA 0.0000 0.00	lbs ac lbs	
	Actual Mode	Effective Area = Calculated Model Size(s) = I Size (if multiple values provided in Calculated	NA #N/A	EA	
	Model Si:	ze or if you are choosing a larger model size) =	0	Model Size	
		Surface Area =	#N/A	ft ²	
		Overflow Rate =	#VALUE!	Vor	
		Rounded Overflow Rate =	#VALUE!	Vor	
		BMP Efficiency % = L _R Value =	#VALUE!	%	
		L _R value -	#VALUE!	lbs	
		TSS Load Credit =	#VALUE!	lbs	
	Is Sufficient Tre	atment Available? (TSS Credit > TSS Uncapt.)	#VALUE!		
		TSS Treatment by BMP (LM + TSS Uncapt.) =	#VALUE!		
21. Vortech					
	R	equired TSS Removal in BMP Drainage Area= Impervious Cover Overtreatment=	NA 0.0000	lbs ac	
		TSS Removal for Uncaptured Area =	0.000	lbs	
	BMP Sizing		0.00	100	
		Effective Area = Calculated Model Size(s) =	NA #N/A	EA	
	Actu	al Model Size (if choosing larger model size) =	Vx1000	Pick Model	Size
		Surface Area =	7.10	ft ²	
		Overflow Rate =	#VALUE!	Vor	
		Rounded Overflow Rate =	#VALUE!	Vor	
		BMP Efficiency % =	#VALUE!	96	
		L _R Value =	#VALUE!	lbs	
		TSS Load Credit =	#VALUE!	lbs	
	Is Sufficient Tre	atment Available? (TSS Credit > TSS Uncapt.)	#VALUE!		
		TSS Treatment by BMP (LM + TSS Uncapt.) =	#VALUE!		



Attachment N: Inspection, Maintenance, Repair, and Retrofit Plan

Attachment N: Inspection, Maintenance, Repair, Retrofit Plan

Batch Detention Ponds:

Pest Management:

An Integrated Pest Management 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. It should also address the maintenance of proper drainage for the site through the batch detention ponds.

Seasonal Mowing and Lawn Care:

The basin, basin side-slopes and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

Inspection and Maintenance/Repair:

Inspections should take place a minimum of 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. 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.

Debris and Litter Removal:

Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed.

Erosion Control:

The 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 the upper stage with a lower stage may periodically need to be replaced or repaired.



Structural Repairs:

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.

Nuisance Control:

Standing water (not desired in an extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitos, 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 performed.

Sediment Removal:

When properly designed, dry detention extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention basins for several reasons. First, the sediment generally reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins, sediment accumulating can make dry extended 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 structure to downstream channels and streams. For these reasons, accumulated sediment inside the basin 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.

Public Education:

The delegation of maintenance responsibilities is for the landowner. However, localities should provide an active educational program to encourage the recommended practices. Landscapers, contractors, and other operators for the site will also need to be educated on suitable practices for lawn upkeep throughout the year with a limited number of pesticides or fertilizer.



Detention Pond/BMP Records

1	nspection Type of Inspection:	Date:
	Comments:	
	Signature:	
1	Maintenance	Date:
	Work Performed: Comments:	
		(Maintenance Personnel)
<u>(</u>	<u>Other</u> Comments:	Date:
	Signature:	(Title:)



Responsibility of Maintenance

<u>Colton Taylor</u> Print Name <u>Authorized Agent</u> Title – Owner/President/Other <u>The Church Of Jesus Christ Of Latter-Day Saints</u> Corporation/Partnership/Entity Name

Agree to assume the responsibility of maintaining the permanent BMPs constructed as part of the Pecan Park Bulverde development in accordance with the rules and regulations of the Texas Commission on Environmental Quality (TCEQ).

I also understand that:

- 1. I am 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.
- 2. 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.

04/29/2025

Applicant's Signature

Contact Person: David Scott Entity: The Church Of Jesus Christ Of Latter-Day Saints Mailing Address: 50 East North Temple Street, 12th Floor City, State, Zip: Salt Lake City, UT 84150 Telephone: (385)315-0555



Date



Attachment O: Pilot-Scale Field Testing Plan

N/A



Attachment P: Measures for Minimizing Surface Stream Contamination

Attachment P: Measures for Minimizing Surface Stream Contamination

Upon approval of this plan, the Batch Detention Pond, traditionally designed, will be constructed before the proposed Liberty Hill Meetinghouse development starts. Therefore, any storm water runoff leaving the site will be treated per TCEQ RG-348, and no surface steam contamination is anticipated.





Temporary Stormwater Section

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Ross Corder, PE

Date: <u>03/25/2025</u>

Signature of Customer/Agent:

Koos Cont

Regulated Entity Name: Liberty Hill Meetinghouse

Project Information

Potential Sources of Contamination

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

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

The following fuels and/or hazardous substances will be stored on the site: _____

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

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

Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

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

Sequence of Construction

5. Attachment C - Sequence of Major Activities. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

- For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
- 6. Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: <u>South Fork San Gabriel River</u>

Temporary Best Management Practices (TBMPs)

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

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

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

There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

- 11. Attachment H Temporary Sediment Pond(s) Plans and Calculations. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
 - 🛛 N/A
- 12. Attachment I Inspection and Maintenance for BMPs. A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
- 13. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
- 14. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
- 15. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
- 16. 🖂 Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

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

Administrative Information

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



Attachment A: Spill Response Actions

Attachment A: Spill Response Actions

Contractors working onsite with materials which could potentially cause pollution shall implement the following measures to prevent stormwater pollution.

Education of Employees or Subcontractors Who Handle Materials Which Can Cause Pollution

- Employees should know what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when a spill must be reported to the TCEQ. Information is available in 30 TAC 327.4 and 40 CFR 302.4.
- Educate employees and subcontractors on the potential dangers to humans and the environment from spills and leaks and provide training in spill prevention and cleanup. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees, who will use or handle potential pollutants.
- Provide for a superintendent or representative to oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR part 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and waste in covered containers and protect from vandalism.
- Place spill cleanup materials where it will be readily accessible.
- Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise clean-up activities.
- Do not bury spills onsite.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMP"s.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
- Contain contaminated water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.



• Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function

<u>Cleanup</u>

- Clean up leaks and spills immediately, or as soon as it is safely practical.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent materials for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly.

Minor Spills

- Minor spills such as small quantities of oil, gasoline, paint, etc, should be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

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

Spills should be cleaned up immediately, or as soon as safely practical

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



Significant/Hazardous Spills

- Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- For spills of federal reportable quantities, in conformance with the requirements in 40CFR parts 110, 119 and 302, the contractor should notify the National Response Center at (800) 424-8802.
- Notification should first be made by telephone and followed up with a written report. The services of a spill contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staff have arrived at the job site.
- Other agencies which may need to be contacted include, but are not limited to, City, Police Department, County Sheriff Office, Fire Departments, etc.

Vehicle and Equipment Maintenance

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





Attachment B: Potential Sources of Contamination

Attachment B: Potential Sources of Contamination

Asphalt products used on this project

- Preventative measures
 - After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of forecasted rain.

Oil, grease fuel and hydrocarbon fluid contamination from construction equipment and vehicle drippings.

- Preventative measures
 - Vehicle maintenance, when possible, will be performed within the construction staging area.
 - Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.

Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

- Preventative measures
 - Contractor to incorporate regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
 - Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
 - Hazardous material and waste shall be stored in covered containers and protected from vandalism.
 - A stockpile of spill cleanup materials shall be stored on site where it will be readily available.



Miscellaneous trash and litter from construction workers and material wrappings.

- Preventative measures
 - Trash containers will be placed throughout the site to encourage proper trash disposal.

Construction Debris

- Preventative measures
 - Construction debris will be monitored daily by the site contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case-by-case basis.

Spills/Overflow of waste from portable toilets

- Preventative measures
 - Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
 - Portable toilets will be placed on a level ground surface.
 - Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.





Attachment C: Sequence of Major Activities

Attachment C: Sequence of Major Construction Activities

The sequence of major construction activities that will disturb earth/soil of the proposed site will be completed in two stages. Initially, the site will cleared and grubbed of existing vegetation to prepare for the proposed site plan. This stage will include installation of temporary erosion controls. Temporary controls include temporary construction entrance, silt fence, and concrete washout pit. The second stage will include the construction of buildings, parking, drives, utilities, Batch Detention Basin, landscaping, and site cleanup. Once the site is fully stabilized with vegetation back in place, the temporary erosion controls may be removed. Both stages will disturb approximately 4 acres of land.





Attachment D: Temporary Best Management Practices and Measures

Attachment D: Temporary Best Management Practices and Measures

7a A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

Upgradient flows are intercepted and diverted by use of swales around the proposed BMPs. Therefore, there are no significant upgradient flows that impact the site and no proposed BMPs are planned specifically for upgradient flows. The proposed onsite batch detention pond is sized to treat all onsite flows and impervious cover.

7b A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off-site, including pollution caused by contaminated stormwater runoff from the site.

Site preparations will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include:

- Erection of silt fence along downgradient boundary of construction activities for temporary erosion and sedimentation controls.
- Installation of stabilized construction entrance/exits to reduce the dispersion of sediment from the site.
- Installation of concrete truck washout.
- Installation of construction staging areas.

7c A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

Temporary measures are intended to provide a method of controlling and slowing the flow of runoff from the construction site. By utilizing silt fence staged down gradient and along flow paths, will allow sediment and suspended solids to settle out of stormwater flows and be captured onsite. By containing the sediment and suspended solids within the site, they will not enter the aquifer, surface streams and/or sensitive features that may exist downstream of the site.



7d A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction

BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. The BMPs are providing settlement of suspended solids and containment onsite, but stormwater flows will continue on their natural drainage path. Features discovered during construction will be reported and assessed in accordance with applicable regulations.





Attachment E: Request to Temporarily Seal a Feature

N/A



Attachment F: Structural Practices

Attachment F: Structural Practices

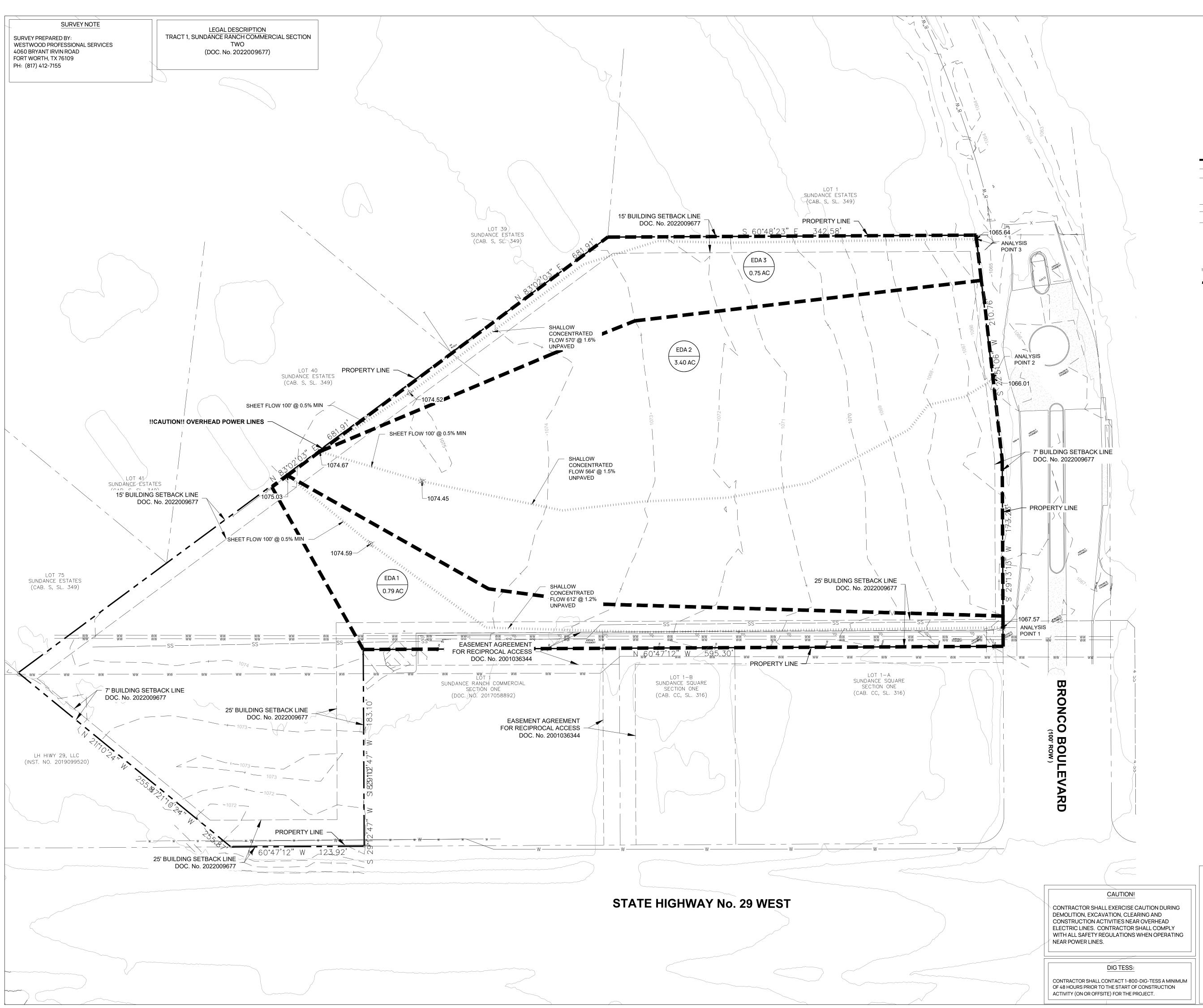
The structural practices listed below are shown on the Erosion Control Plans and are listed on Attachment D of the Temporary Controls Section of the CZP.

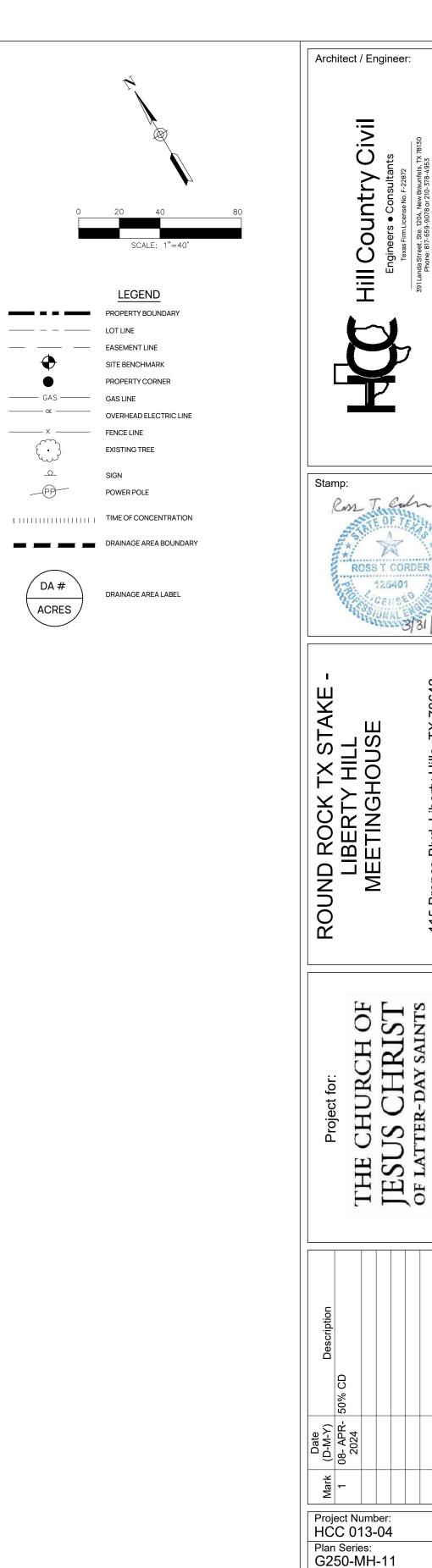
- A stabilized construction entrance with washout pit will be constructed at all locations where vehicular traffic enters and leaves the site. This will reduce sediments which leave the site and are tracked or fall onto adjacent roadways. Currently there are two proposed stabilized construction entrance locations.
- A concrete truck washout will be located next to the south stabilized construction entrance to prevent pollutants to stormwater from concrete waste.
- Silt fencing will be installed adjacent to any drainage way which receives sheet flow from upgradient-disturbed areas and along the side slope perimeter of disturbed areas.
- Sandbags filled with washed pea gravel will be used at storm drainage inlets prior to stabilization of the drainage areas.





Attachment G: Drainage Area Map





Entr

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR, SUB-CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE, OR STRUCTURAL/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, SHALL REVIEW THESE PLANS AND GEOTECHNICAL REPORT, THE INSTALLATION SITES WITHIN THE PROJECT AREA IN ORDER TO IMPLEMENT CONTRACTORS TRENCH EXCAVATION SAFETY PROTECTION PLAN, SYSTEMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM OSHA STANDARDS, SPECIFICALLY, CONTRACTOR AND/OR RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PLAN IN ACCORDANCE WITH OSHA REGULATIONS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND/OR AROUND THE EXPOSED TRENCH EXCAVATION.

C606

Sheet:

Property Number:

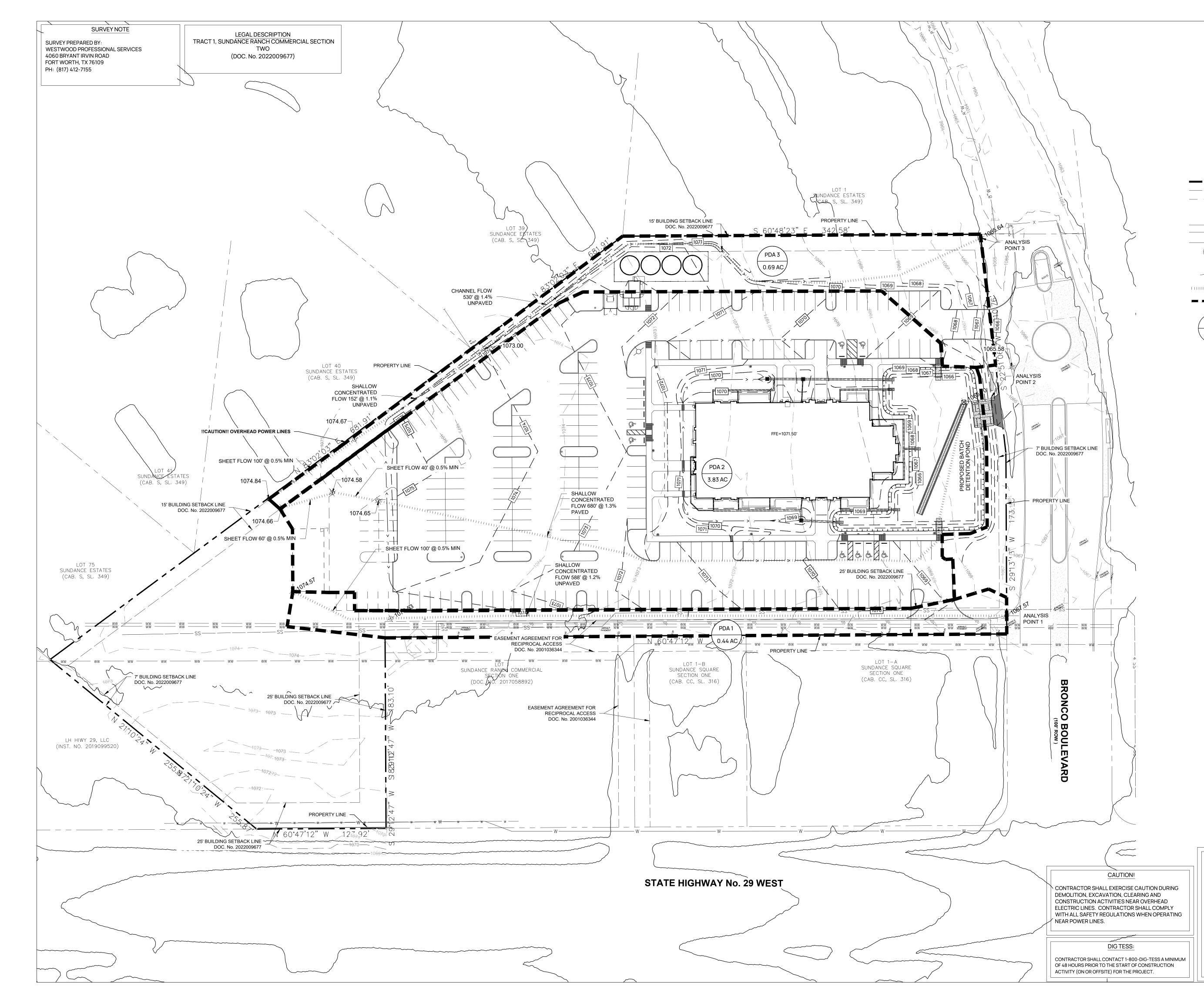
EXISTING

DRAINAGE

AREA MAP

501-7850

Sheet Title:





CONTRACTOR, SUB-CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE, OR STRUCTURAL/GEOTECHNICAL/SAFETY EQUIPMENT CONSULTANT, SHALL REVIEW THESE PLANS AND GEOTECHNICAL REPORT, THE INSTALLATION SITES WITHIN THE PROJECT AREA IN ORDER TO IMPLEMENT CONTRACTORS TRENCH EXCAVATION SAFETY PROTECTION PLAN, SYSTEMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM OSHA STANDARDS, SPECIFICALLY, CONTRACTOR AND/OR RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PLAN IN ACCORDANCE WITH OSHA REGULATIONS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND/OR AROUND THE EXPOSED TRENCH EXCAVATION.

C607

Sheet:



Attachment H: Temporary Sediment Pond(s) Plans and Calculations

N/A



Attachment I: Inspection and Maintenance for BMPs

Attachment I: Inspection and Maintenance for BMPs

The following list of items outlines and dictates Inspection and Maintenance for BMPs practices. Inspection and maintenance guidelines come from TCEQ RG-348.

In addition to these measures the contractor will be subject to the provisions of the TCEQ General Permit Number TXR 150000 relating to discharges from construction activities.

Temporary Construction Entrance/Exit

- 1. The entrance should be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repairs and/or cleanout of any measures used to trap sediment.
- 2. All sediment spilled, dropped, washed, or tracked onto public rights-of-way should be removed immediately by contractor.
- 3. When necessary, wheels should be cleaned to remove sediment prior to entrance on to public right-of-way.
- 4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin
- 5. All sediment should be prevented from entering any storm drain, ditch, or water course by using approved methods.

Silt Fence

- 1. Inspect all fencing weekly, and after any rainfall.
- 2. Remove sediment when buildup reaches 6 inches.
- 3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
- 4. Replace or repair any sections crushed or collapsed during construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot to where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
- 5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Inlet Protection Barrier

- 1. Inspections should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
- 2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- 3. Check placement of devices to prevent gaps between device and curb.
- 4. Inspect filter fabric and patch or replace if torn or missing.
- 5. Structures should be removed, and the area stabilized only after the remaining drainage area has been properly stabilized.





Attachment J: Schedule of Interim and Permanent Soil Stabilization Practices

Attachment J: Schedule of Interim and Permanent Soil Stabilization Practices

Onsite construction activities shall be conducted in accordance with the Erosion Control Plan for the project which includes the provisions of the TPDES General Permit TXR150000.

Interim on-site stabilization measures will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest duration and maximizing the use of natural vegetation. All disturbed soil will be stabilized as per project specifications in accordance with TCEQ Technical Guidance Manual RG-348 (2005).

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site has temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of the site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is preclude by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Interim Stabilization Measures will include one or more of the following methods.

- 1. Temporary Vegetation
- 2. Installation of blankets or matting material
- 3. Hydraulic Mulch
- 4. Sod

The interim and permanent stabilization will be installed in accordance with the standard specifications for the county or city having jurisdiction over the project, whichever is more stringent. If the governing entity does not have specifications for these items, the work shall be completed in compliance with the procedures and specifications outlined in the current Technical Guidance Manual published by the TCEQ.

Permanent Stabilization measures will include one or more of the following methods.

- 1. Permanent Vegetation including landscape planting with trees, shrubs, or ground cover.
- 2. Installation of blankets or matting material
- 3. Hydromulch
- 4. Grass Sodding
- 5. Rock or concrete riprap

A copy of the Erosion Control Plan is attached.





Agent Authorization

	Agent Authorization Form For Required Signature Edwards Aquifer Protection Program Relating to 30 TAC Chapter 213 Effective June 1, 1999
1.	Colton Farr Taylor
-	Print Name
	Authorized Agent
	Title - Owner/President/Other
	<u>The Church Of Jesus Christ Of Latter-Day Saints,</u> Corporation/Partnership/Entity Name
have authorized	Ross Corder, PE Print Name of Agent/Engineer
of	Hill Country Civil 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 lee 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

05/24/2024 Date

THE STATE OF <u>Ü</u>§

County of _____§

NOtOfy Public Ela te of Utah My COmmission Explres on:

Mafch 25. 202ó COMO. Number: 723805

BEFORE ME, the undersigned authority, on this day personally appeared <u>Colton Toylor</u> known to me to be the person whose nan 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 _____ day of _ a NOTARY PUBLIC MEEGHAN LDERS

Mee han Aalders Typed bPñnted Name of Notary

MY COMMISSION EXPIRES:)! *+'



Application Fee Form

Application Fee Form

Texas Commission on Environmer	ntal Quality		
Name of Proposed Regulated Entit	ty: Liberty Hill Meeting	House	
Regulated Entity Location: 115 Bro	nco Blvd. Liberty Hill, 1	<u>FX 78642</u>	
Name of Customer: The Church of	Jesus Christ of Latter-L	Day Saints	
Contact Person: David Scott	Phon	e: (385) 315-0555	
Customer Reference Number (if is	sued):CN		
Regulated Entity Reference Number	er (if issued):RN		
Austin Regional Office (3373)			
Hays	Travis	×Μ	illiamson
San Antonio Regional Office (3362	2)		
Bexar	Medina		alde
	_		alue
Comal	Kinney		
Application fees must be paid by c			
Commission on Environmental Qu			
form must be submitted with you	r fee payment. This pa	ayment is being subm	itted to:
Austin Regional Office	🗌 Sa	an Antonio Regional O	ffice
Mailed to: TCEQ - Cashier	vernight Delivery to: 1	CEQ - Cashier	
Revenues Section	12100 Park 35 Circle		
Mail Code 214	Building A, 3rd Floor		
P.O. Box 13088	ustin, TX 78753		
Austin, TX 78711-3088	512)239-0357		
Site Location (Check All That Appl	y):		
Recharge Zone	Contributing Zone	Transi	tion Zone
Type of Plan	1	Size	Fee Due
Water Pollution Abatement Plan, C	Contributing Zone		
Plan: One Single Family Residentia	I Dwelling	Acres	\$
Water Pollution Abatement Plan, C	Contributing Zone		
Plan: Multiple Single Family Reside	ential and Parks	Acres	\$
Water Pollution Abatement Plan, C	Contributing Zone		
Plan: Non-residential		6.43 Acres	\$ 5,000
Sewage Collection System		L.F.	\$
Lift Stations without sewer lines		Acres	\$
Underground or Aboveground Stor	rage Tank Facility	Tanks	\$
Piping System(s)(only)		Each	\$
Exception		Each	\$
Extension of Time		Each	\$
Signature:	Date	: 04-25-24	

C

1 of 2

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	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional,	<1	\$3,000
multi-family residential, schools, and other sites	1<5	\$4,000
where regulated activities will occur)	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$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



Core Data Form



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

Reason for Submission (If other is checked please New Permit, Registration or Authorization (Core I		the program application.)		
Renewal (Core Data Form should be submitted wi	th the renewal form)	Other		
2. Customer Reference Number (if issued)	Follow this link to search	3. Regulated Entity Reference Number (if issued)		
CN	for CN or RN numbers in Central Registry**	RN		

SECTION II: Customer Information

4. General Customer Information 5. Effective Date for Custom							er Informat	ion	Updat	es (mm/dd/	(VVV)		4/25/2024
New Custo		Verifiable with	Update to the Texas Secr				the second s		1250	eguiated Ent nts)	ity Own	ership	.L
			e may be upd Accounts (Cl		omatical	lly base	d on what	is c	urrent	and active	with ti	he Texas Sec	retary of State
6. Customer	Legal Nam	e (If an individ	lual, print last n	ame first:	eg: Doe, .	lohn)			Ifner	w Customer, a	enter pri	evious Custom	er below:
The Churc	h of Jesus	Christ of L	atter-day Sai	ints							and the second		
7. TX SOS/CF	A Filing Nu	umber	8. TX	State Ta	t ID (11 d	ligits)			(9 dig	ederal Tax II gits) -0234		10. DUNS applicable)	Number (if
11. Type of (ustomer:		Corporation					divid	iual		Partne	ership: 🗌 Ger	eral 🗌 Limited
Government:		ounty 🗌 Fed	eral 🗌 Local [State	Other			ole P	roprieto	orship	0	her:	
12. Number			251-500	X 501 and	d higher				13. I X Ye		tly Ow	ned and Op	erated?
14. Custome	r Role (Prop	osed or Actua	l) – as it relates	s to the Reg	gulated E	ntity list	ed on this fo	orm.	Please	check one of	the folk	owing	- Werner -
Owner	al Licensee	Operator Respon		X Owne	r & Opera 7/BSA App					Other:			
	The Churc	h of Jesus Chr	ist of Latter-Da	y Saints									
15. Mailing Address:	50 E Nort	h Temple St, C	OB-12										
	City	Salt Lake City	/		State	UT	ZIF	>	8415	0		ZIP+4	
16. Country	Mailing Inf	ormation (if	outside USA)				17. E-Ma	il A	ddress	(if applicable	:)		
		N					scottdl@C	hurd	choflesu	usChrist.org			
18. Telephon	e Number			19.	Extensio	on or C	ode		-	20. Fax Ne	umber	(if applicable)	

(385) 315-055	5
-----------------	---

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, I	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.)

Liberty Hill Meeting House

23. Street Address of the Regulated Entity: (<u>No PO Boxes)</u>	115 Bron	co Blvd.						
	City	Liberty Hill	State	ТХ	ZIP	78642	ZIP + 4	
24. County	Williamso						J	

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

25. Description to Physical Location:	The locatio	n is off of State Hwy	29 and Bronco Bl	vd. behind Pro	sperity Bank	L			
26. Nearest City				and a second second	State			Nearest ZIP Code	
Latitude/Longitude an used to supply coordin					Data Stand	ards. (Geocoding of t	he Physical	Address may be	
27. Latitude (N) In Decimal:		30.67286	30.67286389 28.1			W) in Oecimal:	97.91816111		
Degrees 30	Minutes 4	0 s	econds 22.31	Degr	^{ees} 97	97 Minutes 55		Seconds 5.38	
29. Primary SIC Code 30. Secondary SIC (4 digits) (4 digits) 8661 33. What is the Primary Business of this entity? (1			•	(5 or 6 digi 813110		uue	32. Secondary NAICS Code (5 or 6 digits)		
Religous Meeting House				n it standardard				m	
34. Mailing Address:	The Church of Jesus Christ of Latter-Day Saints 50 E North Temple St COB-12								
	City	Sait Lake City	State	ਯ	ZIP	84150	Z1P + 4	6 A.A.	
35. E-Mail Address:	scol	ttdi@ChurchofJesus	Christorg			-		L	
36. Telephone Number	·		37. Extension o	Code	38. (Fax Number (if applicat	ote)		
(385) 315-555					C	().			

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.

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

SECTION IV: Preparer Information

40. Name:	Kortnie Thomas			41. Title:	Project Coordinator	
42. Telephone Number		43. Ext./Code	44. Fax Number	45. E-Mail Address		
(210) 378-4953			() -	Kortnie@hillcountrycivil.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:	The Church of Jesus Christ of Latter-day Saints	Job Title:	Authorized Agent		
Name (In Print):	Colton Taylor		Phone:	385 315-0555	
Signature:	JAP		Date:	6/21/24	