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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN

FOR

GABRIELS HORN DEVELOPMENT

SEPTEMBER 2025

PREPARED FOR

BM 22, LLC
2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641

PREPARED BY

LJA ENGINEERING, INC.
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LJA JOB NO. A461-0401

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Gabriels Horn Development						**2. Regulated Entity No.:** RN112280268			
3. Customer Name: BM 22 LLC						**4. Customer No.:** CN606426450			
5. Project Type: **(Please circle/check one)**	New (circled)		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP (circled)	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential (circled)			**8. Site (acres):**		16.37	
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**			2 BATCH DETION WQ BASINS			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	WILLIAMSON		**14. Watershed:**			South Fork San Gabriel River			

Application Distribution

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

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

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

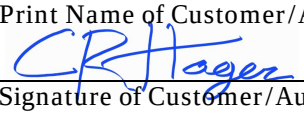
Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	__	X
Region (1 req.)	__	__	X
County(ies)	__	__	X
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	__Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	__Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __Cedar Park __Florence __Georgetown __Jerrell X Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	__	__	__	__
Region (1 req.)	__	__	__	__	__
County(ies)	__	__	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

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

CHARLES R. HAGER V, P.E.

Print Name of Customer/Authorized Agent



9/29/2025

Signature of Customer/Authorized Agent Date

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

Contributing Zone Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Charles Hager V, P.E.

Date: 09/29/2025

Signature of Customer/Agent:

Regulated Entity Name: Gabriels Horn Development

Project Information

1. County: Williamson
2. Stream Basin: South Fork San Gabriel
3. Groundwater Conservation District (if applicable): _____
4. Customer (Applicant):

   Contact Person: Swamy Devuni
   Entity: BM 22, LLC
   Mailing Address: 2508 Dapple Grey Lane
   City, State: Leander Zip: 78641
   Telephone: (703) 220-7265 Fax: _____
   Email Address: swamy@Latitude-Investment.com

5. Agent/Representative (If any):

Contact Person: Charles Hager V, P.E.
Entity: LJA Engineering, Inc.
Mailing Address: 7500 Rialto Boulevard
City, State: Austin, Texas Zip: 78735
Telephone: (303) 564-2715 Fax: _____
Email Address: chager@lja.com

6. Project Location:

☒ The project site is located inside the city limits of Leander, TX.
☐ 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.

TAX ID #s: R655765, R022218, R568058, R500872, and R500871

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

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

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

10. ☒ **Attachment C - Project Narrative**. A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

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

11. Existing project site conditions are noted below:

☐ Existing commercial site
☐ Existing industrial site
☐ Existing residential site

☐ Existing paved and/or unpaved roads
☐ Undeveloped (Cleared)
☒ Undeveloped (Undisturbed/Not cleared)
☐ Other: _____

12. The type of project is:

☐ Residential: # of Lots: 0
☐ Residential: # of Living Unit Equivalents: 0
☒ Commercial
☐ Industrial
☐ Other: _____

13. Total project area (size of site): 16.374 Acres

Total disturbed area: 19.58 Acres

14. Estimated projected population: 0

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

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	***Sq. Ft.***	***Sq. Ft./Acre***	***Acres***
Structures/Rooftops	95,525	÷ 43,560 =	2.193
Parking	267,258	÷ 43,560 =	6.136
Other paved surfaces	108,093	÷ 43,560 =	2.481
Total Impervious Cover	470,902	÷ 43,560 =	10.810

Total Impervious Cover 10.81 **÷ Total Acreage** 16.374 **X 100 =** 66.02**% Impervious Cover**

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

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

For Road Projects Only

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

☒ N/A

18. Type of project:

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

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

- ☐ Concrete
- ☐ Asphaltic concrete pavement
- ☐ Other: _____

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

Length of R.O.W.: _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

21. Pavement Area:

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

☒ N/A

26. Wastewater will be disposed of by:

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

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

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

☒ Sewage Collection System (Sewer Lines):

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

☒ Existing.

☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

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

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. ☒ The Site Plan must have a minimum scale of 1" = 400'.

    Site Plan Scale: 1" = 40'.

35. 100-year floodplain boundaries:

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

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

    The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Panel 48491C0455F, Effective December 20, 2019.

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

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

37. ☒ A drainage plan showing all paths of drainage from the site to surface streams.

38. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

39. ☒ Areas of soil disturbance and areas which will not be disturbed.

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

41. ☒ Locations where soil stabilization practices are expected to occur.

42. ☐ Surface waters (including wetlands).

    ☒ N/A

43. ☐ Locations where stormwater discharges to surface water.

    ☒ There will be no discharges to surface water.

44. ☐ Temporary aboveground storage tank facilities.

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

45. ☐ Permanent aboveground storage tank facilities.

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

46. ☒ Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

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

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

☐ N/A

48. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

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

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

☐ N/A

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

☐ N/A

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

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

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

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

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

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

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

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

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

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

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

    ☒ N/A

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

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

☐ N/A

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

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

☐ N/A

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

☒ N/A

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

☒ N/A

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

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

60. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

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

Administrative Information

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

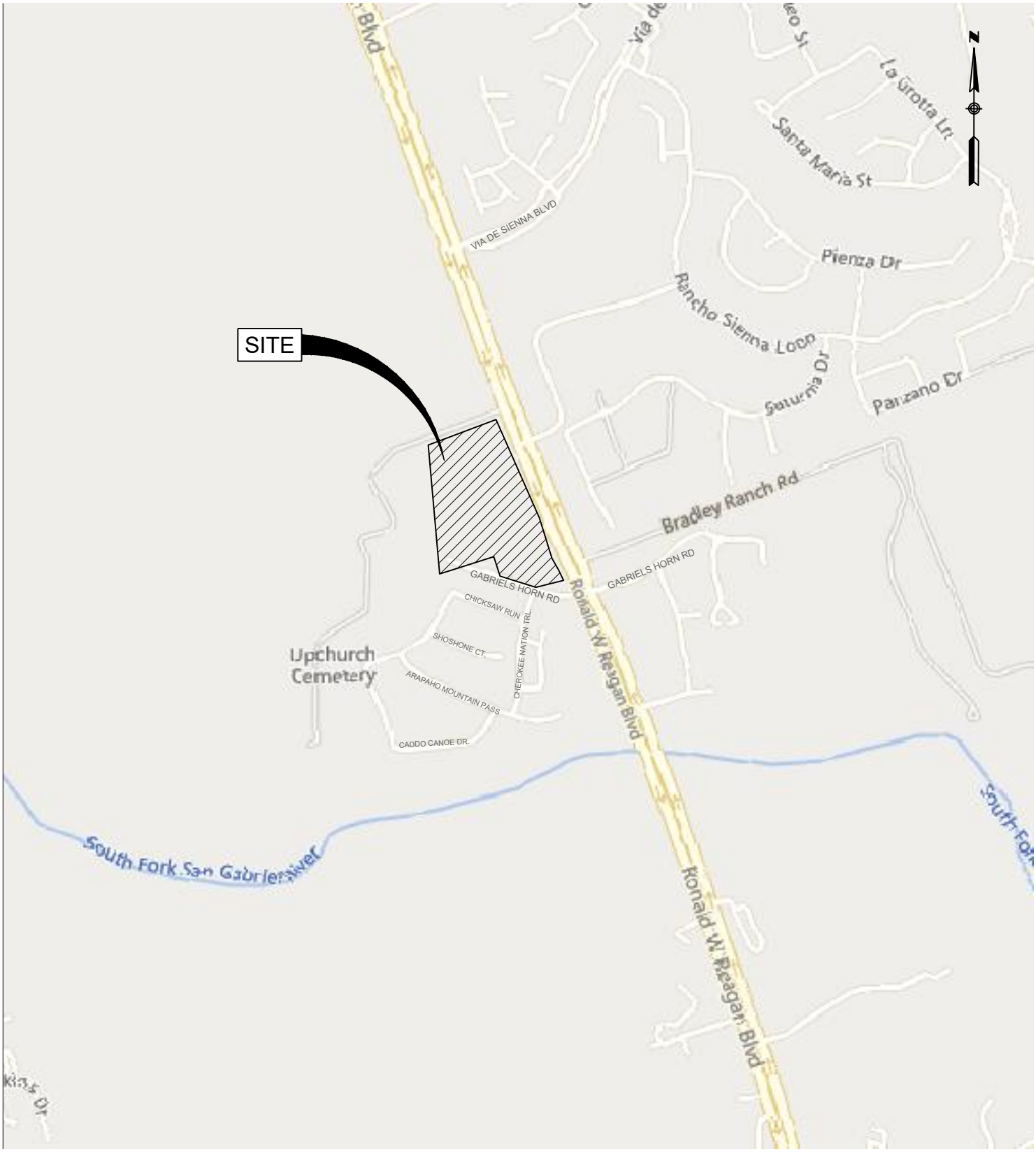
62. ☒ Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.

63. ☒ The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.

☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.

ATTACHMENT A

SITE LOCATION ROAD MAP



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Austin, Texas 78735

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Fax 512.439.4716
FRN-F-1386

ROAD MAP

GABRIELS HORN 17.8-AC
GABRIELS HORN RD. & RONALD REAGAN BLVD., LEANDER, TEXAS 78641

ATTACHMENT A

1000 5000 0 1000 2000
SCALE IN FEET
1" = 1000'

ATTACHMENT B

USGS QUADRANGLE MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LEANDER QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

PROJECT SITE

Edwards Aquifer Recharge Zone

Edwards Aquifer Recharge Zone

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1963. Revised from aerial photographs taken 1985. Field checked 1986. Map edited 1987

Projection and 10,000-foot grid ticks: Texas coordinate system, central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 17 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence line

UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

Red tint indicates areas in which only landmark buildings are shown

Areas covered by dashed light-blue pattern are subject to controlled inundation

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

3097–321

ROAD CLASSIFICATION

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

LEANDER, TEX.
30097–E7–TF–024

1987

DMA 6445 III SE–SERIES V882

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

ISBN 0-607-51609-7

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

Regulatory Zones

30 TAC Chapter 213- Edwards Aquifer
Effective May 1985

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

ATTACHMENT C - PROJECT NARRATIVE

The proposed Gabriels Horn Subdivision consists of 17.36 acres, with a total of 5 lots and 1.449-acres of proposed Right of Way (R.O.W.), for a total site area of 16.37 acres. The subdivision is located along Gabriels Horn Road and Ronald Reagan Boulevard in the Henry Garmes Survey, Abstract No. 269 in Williamson County (recorded in Document No. 2012001125 O.P.R.W.C.T.). The subdivision's County Tax ID Numbers are: R022218, R500872, R500871, and R473804. The site is located adjacent to Ronald Reagan Boulevard and the southwestern portion of the site is adjacent to Gabriel Horns Road. The site is in the City of Leander Full-Purpose Jurisdiction. The site is currently undeveloped without any development other than minor agricultural improvements such as fences and driveways. The proposed land uses are restricted to commercial, retail, office, and other related uses only. There are no residential uses proposed. The development includes the initial site improvements of Lots 3, 4, and 5, and the associated shared/public infrastructure improvements such as utility extensions, master storm drainage system, roadway/access improvements, and other related improvements. The total site area is 16.37-acres and 10.81-acres of impervious cover is proposed.

The entire site drains to South Fork San Gabriel River. No portion of the site is located within a FEMA 100-year floodplain, as shown on FEMA FIRMETTE 48491C0455F of Williamson County, effective on December 20, 2019. The subdivision's FEMA FIRMETTE. The subdivision is located within the Edward's Aquifer Contributing Zone per TCEQ maps, and therefore future development requires water quality improvements and permitting by TCEQ.

Water quality treatment will be provided for the project by two (2) proposed detention and water quality BMPs (batch detention water quality ponds with stacked detention), shown on the enclosed construction plans as Pond A and Pond B.

Pond A is a proposed batch detention water quality pond with stacked detention. The pond is proposed with mortared rock walls to increase the volume of the facility. The pond is designed with +/- 2.0-ac-ft of storage (32,760-CF is provided for water quality volume), a water quality elevation of 876.61, and a 100-year water surface elevation of 880.40 (top of pond is set to 881.50). The pond is designed with a 1.0 weir set to the elevation of 876.61, the same elevation as the ultimate design water quality elevation, and 3-LF top weir at elevation 879.50.

Pond B is a proposed batch detention water quality pond with stacked detention. The pond is proposed with mortared rock walls to increase the volume of the facility. The pond is designed with +/- 4.82-ac-ft of storage (50,325-CF is provided for water quality volume), a water quality elevation of 886.75, and a 100-year water surface elevation of 889.80 (top of pond is set to 891.00). The pond is designed with a 2.5-LF weir set to the ultimate water quality elevation and top 20-LF overflow weir set to 889.90.

Offsite areas include roughly 7.13-acres to the north and west of the project. This area has portions which are undeveloped as well as developed portions to the east of the project. All offsite flows will be redirected around the proposed developed site and BMPs using open channels and storm system along the perimeter of the property, which will convey offsite stormwater to existing storm systems. Temporary erosion controls consisting of silt fence, mulch sock, stabilized construction entrance, and tree protection/limits of construction fencing will be installed per the site plan's Erosion and Sedimentation Control Plan prior to commencement of ground disturbance. Permanent erosion controls will include seeding/hydromulch on all unpaved areas and rock riprap at storm sewer and pond outlets. All existing driveways, fences, and agricultural improvements will be

demolished prior to construction.

ATTACHMENT D – FACTORS AFFECTING SURFACE WATER QUALITY

The following factors could have an impact on surface and groundwater quality during construction:

1. Non-Stormwater Discharges: It is expected that the following non-stormwater discharges will occur from the site during the construction period:

   - Water from water line flushing
   - Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred)
   - Uncontaminated groundwater (from dewatering of excavation)
   - All non-storm water discharges will be directed towards erosion control structures prior to discharge

2. Material Inventory: The materials or substances listed below are expected to be present onsite during construction:

   - Concrete and concrete products
   - Metal reinforcing materials - rebar, welded wire fabric
   - Fertilizers
   - Petroleum-based products
   - Wood
   - Plastic (PVC) and metal pipe and fittings
   - Paints
   - Rock, gravel, sand, and soil

The following factors could have an impact on surface and groundwater quality after construction:

1. Increased Impervious Cover: The project is proposing to increase impervious cover by 10.81-acres of impervious cover, or 66.02% of the subdivision area (16.37-acres).

2. Revegetation / Water Quality Treatment of Stormwater: Permanent erosion controls will include seeding/hydro mulch on all unpaved areas and rock riprap at storm sewer and detention pond outlets. Runoff from the completed project will be routed to the proposed water quality and detention system.

ATTACHMENT E – VOLUME AND CHARACTER OF STORMWATER

The proposed site improvements captured by the Detention / Water Quality Ponds will generate 10.33-acres of impervious cover, which is 64.6% of the overall 15.99-acre site drainage area (note that there is 0.479-acres of impervious cover that cannot drain to the proposed BMPs and therefore will meet water quality requirements via compensatory storage). Surface runoff from all areas of the developed site will be captured by proposed storm drain inlets and conveyed by proposed storm sewers to one of two water detention / quality BMPs.

Drainage area runoff coefficients for the 25-year and 100-year events before construction are estimated to be 0.39 and 0.46, respectively. The post construction run off coefficients are expected to be 0.69 and 0.78 for the overall developed site, respectively.

Water quality treatment will be provided for the project by two (2) proposed detention / water quality systems, Pond A and Pond B. Both Pond A and Pond B will utilize batch detention to reduce TSS loading to within TCEQ requirements.

POND A

Proposed Detention / Water Quality **Pond A** will receive impervious cover runoff from 4.514-acres of the developed portion of the overall 15.99-ac site drainage area and requires a water quality volume of 29,706 cubic feet (CF), per the enclosed TCEQ TSS Removal Calculations. The provided water quality volume is 32,760 CF. All runoff volume associated with the 2.40-inch capture depth will enter the proposed water quality pond through the proposed stormwater sewer systems. The pond is designed for treatment of the 3.63-acres of proposed impervious cover within the associated drainage area, and 0.342-acres of added offsite impervious cover requiring compensatory treatment.

Upon the initial rain event, the stormwater will convey through Detention / Water Quality Pond A and into a 6” perforated riser which flows into a plug valve with a motor actuator controlled by a rain gage. Once the sensor detects rain, the valve is set to open after 24 hrs, allowing for the required detention time. Once the required water quality volume is achieved, the stormwater will flow through gravity overflow detention weirs to meet detention requirements. Stormwater runoff in excess of the 2.40-inch water quality capture depth for Pond A will provide 2-, 10-, 25-, and 100-year detention for the site. The water quality calculations are based on the TCEQ Technical Guidance Manual (July 2005) for the proposed water quality pond, which is provided on the next page.

Texas Commission on Environmental Quality

ULTIMATE BUILD OUT

TSS Removal Calculations 04-20-2009

Project Name: Gabriels Horn Subdivision Pond A

Date Prepared: 9/23/2025

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

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

Characters shown in red are data entry fields.

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

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load

A_N = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point A

Total drainage basin/outfall area =	**4.51**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'A'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA A)
Post-development impervious area within drainage basin/outfall area =	**3.63**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.80**		
$L_{M\ THIS\ BASIN}$ =	**3159**	lbs.	

Compesitory Drainage Provided by Basin 'A' Water Quality Pond Summary

Total drainage basin/outfall area =	**5.189**	acres	<--AREA ADJACENT TO BASIN 'A' NOT CAPTURED BY POND A
Predevelopment impervious area within drainage basin/outfall area =	**2.014**	acres	(SEE SHEET DM02, DRAINAGE AREA OS-A & D)
Post-development impervious area within drainage basin/outfall area =	**2.356**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.45**		
$L_{M\ (Compensitory)}$ =	**298**	lbs.	
$L_{M\ (TOTAL)}$ =	**3457**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)

Removal efficiency = **91** percent

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

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

where:

A_C = Total On-Site drainage area in the BMP catchment area

A_I = Impervious area proposed in the BMP catchment area

A_P = Pervious area remaining in the BMP catchment area

L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**4.514**	acres
A_I =	**3.630**	acres
A_P =	**0.88**	acres
L_R =	**3671**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **3457** lbs.

F = **0.94**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	**2.40**	inches
Post Development Runoff Coefficient =	**0.63**	
On-site Water Quality Volume =	**24755**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**4951**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**29706**	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.

The values for BMP Types not selected in cell C45 will show NA.

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin =	**29706**	cubic feet
PROVIDED WATER QUALITY VOLUME=	**32760**	cubic feet

POND B

Proposed Detention / Water Quality **Pond B** will receive impervious cover runoff from 11.48-acres of the developed portion of the overall 15.99-ac site drainage area and requires a water quality volume of 29,445 cubic feet (CF), per the enclosed TCEQ TSS Removal Calculations. The provided water quality volume is 50,325 CF. All runoff volume associated with the 1.44-inch capture depth will enter the proposed water quality pond through the proposed stormwater sewer systems. The pond is designed for treatment of the 6.70-acres of proposed impervious cover within the associated drainage area, and 0.137-acres of added offsite impervious cover requiring compensatory treatment.

Upon the initial rain event, the stormwater will convey through Detention / Water Quality Pond B and into a 6” perforated riser which flows into a plug valve with a motor actuator controlled by a rain gage. Once the sensor detects rain, the valve is set to open after 24 hrs, allowing for the required detention time. Once the required water quality volume is achieved, the stormwater will flow through gravity overflow detention weirs to meet detention requirements. Stormwater runoff in excess of the water quality volume for Pond A will provide 2-, 10-, 25-, and 100-year detention for the site. The water quality calculations are based on the TCEQ Technical Guidance Manual (July 2005) for the proposed water quality pond, which is provided on the next page.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

CURRENT
Project Name: Gabriels Horn Subdivision Pond B
Date Prepared: 9/2/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point B

Total drainage basin/outfall area =	**11.48**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'B'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA B)
Post-development impervious area within drainage basin/outfall area =	**6.70**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.58**		
$L_{M\ THIS\ BASIN}$ =	**5834**	lbs.	

Compesitory Drainage Provided by Basin 'B' Water Quality Pond Summary

Total drainage basin/outfall area =	**0.359**	acres	<--AREA ADJACENT TO BASIN 'B' NOT CAPTURED BY POND B
Predevelopment impervious area within drainage basin/outfall area =	**0.000**	acres	(SEE SHEET DM02, DRAINAGE AREA C)
Post-development impervious area within drainage basin/outfall area =	**0.137**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.38**		
$L_{M\ (Compensitory)}$ =	**119**	lbs.	
$L_{M\ (TOTAL)}$ =	**5952**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)
Removal efficiency = **91** percent

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

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

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**11.479**	acres
A_I =	**6.702**	acres
A_P =	**4.78**	acres
L_R =	**6828**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **5952** lbs.

F = **0.87**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	**1.44**	inches
Post Development Runoff Coefficient =	**0.41**	
On-site Water Quality Volume =	**24537**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**4907**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**29445**	cubic feet

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin =	**29445**	cubic feet
PROVIDED WATER QUALITY VOLUME=	**50325**	cubic feet

ATTACHMENT F – Suitability Letter from Authorized Agent (if OSSF is proposed)

Not Applicable.

ATTACHMENT G – Alternative Secondary Containment Methods (if AST with an alternative method of secondary containment is proposed)

Not Applicable.

ATTACHMENT H – AST Containment Structure Drawings (if AST is proposed)

Not Applicable.

ATTACHMENT I – 20% or Less Impervious Cover Waiver

Not applicable.

ATTACHMENT J – BMPs for Upgradient Stormwater

Not Applicable.

ATTACHMENT K – BMPs for On-Site Stormwater

Temporary Controls: Prior to site clearing, grading and excavation, the stabilized construction entrance will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed where more concentrated flow occurs. The water quality ponds will be rough graded to act as sediment traps for the project. All runoff from the developed site will be directed into the rough cut water quality ponds by the use of silt fence and grading during construction until curb and gutter is installed. During all aspects of construction, the contractor shall maintain these controls. The contractor will be responsible for stabilization practices (revegetation). The contractor will be responsible for removing the temporary controls once the revegetation is established.

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified detention and water quality pond improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

ATTACHMENT L – BMPs for Surface Streams

Temporary Controls: Prior to site clearing, grading and excavation, the stabilized construction entrance will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed where more concentrated flow occurs. The water quality ponds will be rough graded to act as a sediment trap for the project. All runoff from the developed site will be directed into the rough cut water quality pond by the use of silt fence and grading during

construction until curb and gutter is installed. During all aspects of construction, the contractor shall maintain these controls. The contractor will be responsible for stabilization practices (revegetation). The contractor will be responsible for removing the temporary controls once the revegetation is established.

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified detention and water quality pond improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

ATTACHMENT M – CONSTRUCTION PLANS

The Gabriels Horn construction and site plans are attached to this application.

ATTACHMENT N - INSPECTION, MAINTENANCE, REPAIR, AND RETROFIT PLAN

See document labeled "TPDES Construction Inspection and Maintenance Form" attached to the end of this report.

ATTACHMENT O – Pilot-Scale Field Testing Plan, if BMPs not based on Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs

Not Applicable

ATTACHMENT P – Measures for Minimizing Surface Stream Contamination

Permanent Controls: After construction there will be runoff from building surfaces, paved areas and managed lawn/landscape areas. These areas will be mitigated by permanent revegetation of disturbed areas. The storm water runoff from the developed site areas will be collected in storm drain inlets and storm drain pipes and conveyed to the specified detention and water quality pond improvements. The functionality of the proposed water quality improvements are as described previously in Attachment E.

ATTACHMENT M

CONSTRUCTION PLANS

TECQ CONTRIBUTING ZONE PLAN
FOR PUBLIC & OVERALL SHARED IMPROVEMENTS AND LOTS 3-5 SDP PLANS
LEANDER, TEXAS
PROJECT NO. SD-24-0226

GABRIELS HORN DEVELOPMENT
TECQ CONTRIBUTING ZONE PLAN

SUBMITTED FOR APPROVAL BY:
LJA ENGINEERING, INC.

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

09/10/2025
DATE

CHARLES R. HAGER, P.E. #127034
LICENSED PROFESSIONAL ENGINEER

THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND/OR SPECIFICATIONS WHETHER OR NOT THE PLANS AND/OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).

FLOODPLAIN INFORMATION:

NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN, AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20, 2019.

AQUIFER NOTE:

THE PROJECT LIES WITHIN THE BOUNDARY OF THE EDWARDS AQUIFER CONTRIBUTING ZONE.

CONTACT INFORMATION FOR COORDINATION AND EMERGENCY:

CITY OF LEANDER ADMINISTRATION	(512) 528-2702
CITY OF LEANDER ENGINEERING	(512) 528-2760
CITY OF LEANDER PUBLIC WORKS	(512) 259-2640
CITY OF LEANDER PLANNING	(512) 528-2763
CITY OF LEANDER FIRE	(512) 528-2847
CITY OF LEANDER PERMITS	(512) 528-2846
CITY OF LEANDER PARKS AND RECREATION	(512) 528-2993

LAND USE SUMMARY

LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL L.P. TO REAGAN GABRIELS REAL ESTATE, LLC DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C)

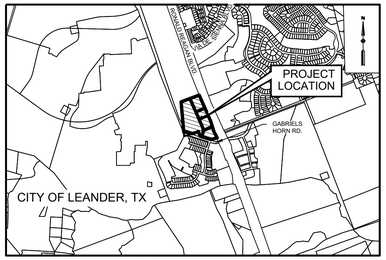
ASSOCIATED PROJECT NUMBER:
GABRIELS HORN TIA-23-0003
GABRIELS HORN FINAL PLAT - FP-23-0081
GABRIELS HORN SHARED IMPROVEMENT PLAN SD-24-0226
GABRIELS HORN LOT 3 SITE DEVELOPMENT PLAN - SD-24-0246
GABRIELS HORN LOT 4 SITE DEVELOPMENT PLAN - SD-24-0246
GABRIELS HORN LOT 5 SITE DEVELOPMENT PLAN - SD-24-0245
GABRIELS HORN PUBLIC IMPROVEMENT PLAN - PICP-23-0079
GABRIELS HORN CONCEPT PLAN - CP-22-0004

LEANDER FIRE DEPARTMENT SUMMARY	
DESIGN STANDARDS	2015 IFC
MAX. FIRE FLOW DEMAND @ 20 PSI	1,500
PROPOSED USE	COMMERCIAL
FIRE HYDRANT FLOW TEST	CAPITAL HYDRANT LLC. TEST ON 8/31/2022
FIRE HYDRANT FLOW TEST LOCATION	18715 RONALD REAGAN BLVD, LEANDER TX 78641
IFC CONSTRUCTION CLASSIFICATION	IIA
LARGEST BUILDING FIRE AREA (SF)	35,100
AUTO FIRE SPRINKLER SYSTEM (NFPA)	13
REDUCED FIRE FLOW DEMAND @ 20 PSI	IIA

DOMESTIC/FIRE/IRR WATER SUMMARY	
LAND USE	COM.
TOTAL DOMESTIC LUE'S	194
AV. DOMESTIC DEMAND (GPM)	251.8
PEAK DOMESTIC DEMAND (GPM)	426.1
IRR. WATER DEMAND* (GPM)	15
TOTAL DOMESTIC WSFU'S	3,782
AV. DOMESTIC WATER DEMAND	512.8 GPM
IRR. WATER DEMAND*	25 - 50 GPM
*IRR. IMPROVEMENTS REQUIRE SEPARATE PERMIT	

PROJECT SUMMARY	
SITE AREA	16.37 AC TOTAL, 17.36 AC N.S.A.
EXISTING ZONING	GC-3-C (TRACT 1) LC-2-A (TRACT 2)
EXISTING LAND USE	VACANT
PROPOSED LAND USE	COMMERCIAL
FUTURE LAND USE (From CoL Maps)	MULTI-USE CORRIDOR- PRIORITY CORRIDOR & NEIGHBORHOOD RESIDENTIAL

REVISIONS / CORRECTIONS				
Number	Description	Revise (R) Add (A) Void (V) Sheet No.'s	Total # of Sheets in Plan Set.	City of Leander Appoval Date



LOCATION MAP
1"=2000'

ADDRESS
GABRIELS HORN RD & RONALD REAGAN BLVD
LEANDER, TEXAS 78641
ZONING: GC-3-C (TRACT 1)
LC-2-A (TRACT 2)
EXISTING SITE AREA: 17.82 ACRES

OWNER (LOTS 3-5) / DEVELOPER:
BM 22, LLC
2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641
CONTACT PERSON: SWAMY DEVUNI
PHONE: (703) 220-7265

OWNER (LOTS 1-2):
REAGAN GABRIELS REAL ESTATE, LLC
5522 JENOLAN RIDGE LANE
SUGAR LAND, TEXAS 77479
CONTACT PERSON: SAMIR MAREDIA
PHONE: (832) 713-4985

ENGINEER :
LJA ENGINEERING, INC.
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN TEXAS 78735
CONTACT PERSON : CHARLES R. HAGER V, P. E.
PHONE: (512) 439-4700
FAX: (512) 439-4716

SURVEYOR:
LJA SURVEYING
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN, TX 78735
CONTACT PERSON: JEREMY KOWIS, R.P.L.S.
PHONE: (512) 493-4700
FAX: (512) 493-4716

CONTOUR DATA :
LJA SURVEYING
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN, TX 78735
CONTACT PERSON: JEREMY KOWIS, R.P.L.S.
PHONE: (512) 493-4700
FAX: (512) 493-4716

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NOTES:

1. THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS. 0.28 ACRES AT THE SOUTHWEST CORNER IS ANNEXED BY THE CITY OF LEANDER AS PART OF 22-A-002.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES.
3. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.
4. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN, EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
5. PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.
6. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
7. IN ADDITION TO THE EASEMENTS SHOWN HEREON, A TEN FOOT (10') WIDE PUBLIC UTILITY, LANDSCAPE AND ACCESS EASEMENT IS DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY AND A TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.
8. 10' WIDE SIDEWALKS SHALL BE INSTALLED ON THE SUBDIVISION SIDE OF RONALD REAGAN BLVD. AND SIDEWALKS ALONG GABRIELS HORN RD. SHALL BE WIDENED TO 6' MINIMUM WIDTH. THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF LOTS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED, SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS CONSTRUCTED.
9. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.
10. APPROVAL OF THESE PUBLIC IMPROVEMENTS CONSTRUCTION PLANS DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.
11. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE CITY OF LEANDER REQUIREMENTS APPLICABLE TO THIS DEVELOPMENT.
12. ANY RELOCATION OF EXISTING ELECTRIC FACILITIES SHALL BE AT THE OWNERS EXPENSE. DAMAGE BY ANY UTILITY COMPANY TO ANY STRUCTURES, FENCES, WALLS, OR LANDSCAPING OF ANY KIND PLACED WITHIN THE LIMITS OF THE EASEMENTS SHOWN ON THIS PLAT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. NO LANDSCAPING OR OTHER MODIFICATIONS ALTERING THE CROSS-SECTIONS OF DRAINAGE EASEMENTS ARE ALLOWED WITHOUT APPROVAL BY THE CITY OF LEANDER.
13. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OHSA) REGULATIONS, CITY OF LEANDER RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THE OWNER.
14. THIS PROJECT LIES WITHIN THE BOUNDARY OF THE EDWARDS AQUIFER CONTRIBUTING ZONE.
15. THIS PROJECT IS LOCATED WITHIN THE CITY OF LEANDER EMERGENCY SERVICES / FIRE DEPARTMENT JURISDICTION.
16. THESE PLANS AND SUBSEQUENT DEVELOPMENT PLANS SHALL COMPLY WITH THE MOST CURRENT INTERNATIONAL FIRE CODE AS ADOPTED AND AMENDED BY THE CITY OF LEANDER FIRE DEPARTMENT, OR ITS SUCCESSORS.
17. THERE ARE NO NATURAL SLOPES GREATER THAN 15% WITHIN THE PROJECT BOUNDARY.
18. WATER AND WASTEWATER SERVICE SHALL BE PROVIDED BY THE CITY OF LEANDER.
19. ELECTRIC SERVICE SHALL BE SUPPLIED BY PEDERNALES ELECTRIC COOPERATIVE.
20. TELECOMMUNICATION SERVICE SHALL BE PROVIDED BY SPECTRUM COMMUNITY SOLUTIONS.
21. GAS SERVICE SHALL BE SUPPLIED BY ATMOS ENERGY.
22. POST DEVELOPED RUN-OFF RATE SHALL BE LESS THAN OR EQUAL TO THE PRE-DEVELOPED CONDITION RUNOFF RATES PER CITY OF LEANDER REGULATIONS.
23. SITE DEVELOPMENT PERMIT MUST BE ISSUED BY THE CITY OF LEANDER AND TCEQ CONTRIBUTING ZONE PLAN APPROVAL IS REQUIRED PRIOR TO CONSTRUCTION OF THIS PROJECT.
24. ALL CONSTRUCTION WITHIN RIGHT-OF-WAY AND EASEMENTS SHOWN HEREIN MUST COMPLY WITH CITY OF LEANDER SPECIFICATIONS.
25. IRRIGATION SHALL BE PERMITTED SEPERATELY.
26. MAINTENANCE OF DRAINAGE IMPROVEMENTS WITHIN DRAINAGE EASEMENTS ARE THE RESPONSIBILITY OF THE PROPERTY OWNER AND HIS OR HER ASSIGNS.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

GENERAL NOTES

REVISED JULY 22, 2024
ANY CHANGES TO THESE NOTES SHOULD BE CLOUDED ON THE PLAN SET.
CITY CONTACTS:
ENGINEERING MAIN LINE: 512-528-2721
PLANNING DEPARTMENT: 512-528-2750
PUBLIC WORKS MAIN LINE: 512-259-2640
STORMWATER INSPECTIONS: 512-285-0055
UTILITIES MAIN LINE: 512-259-1142
UTILITIES ON-CALL: 512-690-4760

PEC CONTACTS:
PUBLIC SAFETY LINE: 1-888-343-7702
CUSTOMER OUTAGE LINE: 1-800-396-9037

1. CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS ON SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUANCE OF WORK STOPPAGE.
2. CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.
   a. **REFRESH ALL LOCATES BEFORE 14 DAYS** – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.
   b. **REPORT PIPELINE DAMAGE IMMEDIATELY** – IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-2592640.
3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:
   a. BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.
   b. ANY TESTING. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION
   c. PROOF ROLLING SUB-GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN-PLACE DENSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE.
4. ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
5. EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY OF LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.
6. BURNING IS PROHIBITED.
7. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M OR WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.
8. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
9. NO BLASTING IS ALLOWED.
10. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLIGHT ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS AND NUMBERS SHALL BE USED TO MARK REVISIONS. ALL CLOUDS AND TRIANGLE MARKERS FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.
11. THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEANDER ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION. THESE "RECORD DRAWINGS" SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE. .
12. THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRED AS A RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT OR PUBLIC RIGHT-OF-WAY, REGARDLESS OF THESE PLANS.
13. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER OF RECORD AND CITY.
14. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.
15. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752-3832.
16. ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTED TO FINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCTION INSPECTOR INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH CLASS A CONCRETE.
17. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.
18. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
20. THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACENT TO AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NOT REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WATER. ONLY SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE SITE AREA CLEAN AND MAINTAINED AT ALL TIMES, TO THE SATISFACTION OF THE CITY. THE SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED) UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.
22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

WATER AND WASTEWATER NOTES

1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.
2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:
   WATER SERVICE "W" ON TOP OF CURB
   WASTEWATER SERVICE "S" ON TOP OF CURB
   VALVE "V" ON TOP OF CURB
3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS.
4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.
5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:
   SIEVE SIZE PERCENT RETAINED BY WEIGHT
   1/2" 0
   3/8" 0-2
   #4 40-85
   #10 95-100
6. DENSITY TESTING FOR TRENCH BACKFILL SHALL BE DONE IN MAXIMUM 12" LIFTS.

WATER

1. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTORS' REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LEANDER NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY.
2. CITY PERSONNEL WILL OPERATE OR AUTHORIZE THE CONTRACTOR TO OPERATE ALL WATER VALVES THAT WILL PASS THROUGH THE CITY'S POTABLE WATER. THE CONTRACTOR MAY BE FINED $500 OR MORE, INCLUDING ADDITIONAL THEFT OF WATER FINES, IF A WATER VALVE IS OPERATED IN AN UNAUTHORIZED MANNER, REGARDLESS OF WHO OPERATED THE VALVE.
3. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM AFTER COORDINATING WITH CITY CONSTRUCTION INSPECTORS AND INFORMING AFFECTED PROPERTIES.
4. PRESSURE TAPS OR HOT TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF LEANDER INSPECTOR MUST BE PRESENT WHEN THE CONTRACTOR MAKES A TAP, AND/OR ASSOCIATED TESTS. A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED. "SIZE ON SIZE" TAPS SHALL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL-CIRCLE GASKETED TAPPING SLEEVE. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. THRUST BLOCKS SHALL BE INSPECTED PRIOR TO BACKFILL.
5. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.
6. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.
7. ALL DEAD END WATER MAINS SHALL HAVE "FIRE HYDRANT ASSEMBLY" OR "BLOW-OFF VALVE AND THRUST BLOCK" OR "BLOW-OFF VALVE AND THRUST RESTRAINTS". THRUST RESTRAINTS SHALL BE INSTALLED ON THE MINIMUM LAST THREE PIPE LENGTHS (STANDARD 20' LAYING LENGTH). ADDITIONALL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURERS RECOMMENDATION AND/OR ENGINEER'S DESIGN.
8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900-DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR-(9)). COPPER PIPES AND FITTINGS ARE NOT ALLOWED IN THE PUBLIC RIGHT OF WAY ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW).
9. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).
10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE.
11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
12. ALL WATER METER BOXES SHALL BE:
   a. SINGLE, 1" METER AND BELOW DFW37F-12-1CA, OR EQUAL
   b. DUAL, 1" METERS AND BELOW DFW39F-12-1CA, OR EQUAL
   c. 1.5" SINGLE METER DFW65C-14-1CA, OR EQUAL
   d. 2" SINGLE METER DFW1730F-12-1CA, OR EQUAL
13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER

1. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.
2. MANDREL TESTING SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
3. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW-511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5.
4. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.
5. FORCE MAIN PIPES NEED TO HAVE SWEEPING WYES FOR JOINTS.

STREET AND DRAINAGE NOTES

1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (TAS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT-OF-WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
5. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED.
6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING.
8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I THERMOPLASTIC.
9. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.
12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY GEOSCIENCE ENGINEERS, LLC PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:
   a. LIGHT TRAFFIC
      - PORTLAND CEMENT STABILIZED 5-INCHES
      - MINIMUM LIME STABILIZED SUBGRADE 6-INCHES
      - COMPACTED SUBGRADE 6-INCHES.
   b. HEAVY TRAFFIC
      - PORTLAND CEMENT CONCRETE 6-INCHES
      - MINIMUM LIME STABILIZED SUBGRADE 6-INCHES
      - COMPACTED SUBGRADE 6-INCHES
13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL.
16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.
18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRVIEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE.
22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN-OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF SLOPE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY.
26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

CONSTRUCTION SEQUENCE NOTES

1. CALL THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING.
5. ROUGH GRADE STREETS.
6. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
7. DELIVER STORM SEWER CUT SHEETS TO THE CITY OF LEANDER.
8. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
9. DELIVER FINAL GRADE CUT SHEETS TO THE CITY OF LEANDER.
10. REGRADE STREETS TO SUBGRADE.
11. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
12. INSTALL CURB AND GUTTER.
13. LAY FINAL BASE COURSE ON ALL STREETS.
14. LAY ASPHALT.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.
16. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
17. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 17.

NOTE: ROUGH GRADING ONLY - STEPS 1 THROUGH 3 ONLY.
ROUGH GRADING AND UTILITIES ONLY - STEPS 1 THROUGH 4 ONLY.
FULL DEVELOPMENT PERMIT - ENTIRE SEQUENCING.

CLEARING AND GRUBBING UNDER A DEVELOPMENT PERMIT, SOLELY FOR THE PURPOSE OF SURVEYING AND SOIL EXPLORATION, SHALL BE HANDCUTTING OR BLADE-UP OPERATION.

EROSION CONTROL NOTES

1. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES AND SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
2. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
3. ANY ON-SITE SPOILS DISPOSAL SHALL BE REMOVED PRIOR TO ACCEPTANCE UNLESS SPECIFICALLY SHOWN ON THE PLANS. THE DEPTH OF SPOIL SHALL NOT EXCEED 10 FEET IN ANY AREA.
4. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SINGLE FAMILY LOTS MAY BE INSTALLED WITH HOME CONSTRUCTION. THE TOPSOIL AND COMPOST BLEND SHALL CONSIST OF 75% TOPSOIL AND 25% COMPOST.
5. SEEDING FOR REESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC 164--WC001 SEEDING FOR EROSION CONTROL). RESEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
6. STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONSTRUCTION PROJECTS MAY REQUIRE SPECIAL CONSIDERATION. ROADWAYS SHALL REMAIN CLEAR OF SILT AND MUD.
7. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
8. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S "TRENCH SAFETY SYSTEMS" OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

TCEQ 217.53(d) DESIGN CRITERIA

Texas Commission on Environmental Quality
Chapter 217 - Design Criteria for Domestic Wastewater Systems

(1) Collection system pipes must be installed in trenches separate from water supply trenches.

(2) Wherever possible, a collection system pipe must be located below a water supply pipe. If a collection system pipe cannot be located below a water supply pipe, the owner must justify in the engineering report why it is not possible to locate the collection system pipe below the public water supply pipe.

(3) Wherever possible, collection system pipes and manholes must be located at least nine feet from all water supply pipes. If a collection system pipe or manhole cannot be located at least nine feet away from a water supply pipe, the owner must justify in the engineering report why it is not possible to provide at least nine feet of separation. Table C.1. in Figure: 30 TAC §217.53(d)(3) provides a reference to paragraphs in this subsection that apply if a collection system pipe or manhole cannot be located at least nine feet away from a water supply pipe.

Figure: 30 TAC §217.53(d)(3)

Table C.1.

Case	Protection Requirement
Parallel pipes within nine feet, where the collection system pipe is above the water supply pipe	Encased in a casing pipe according to paragraph (4) of this subsection
Crossing pipes within nine feet, where the collection system pipe is above the water supply pipe	Encased in a casing pipe according to paragraph (5)(A) of this subsection -or- Constructed using 150 per square inch (psi) pressure class pipe according to paragraph (5)(B) of this subsection
Parallel pipes within nine feet, where the collection system pipe is below the water supply pipe	Constructed using 150 psi pressure class pipe according to paragraph (6)(A) of this subsection -or- Encased in a casing pipe according to paragraph (6)(B) of this subsection
Crossing pipes within nine feet, where the collection system pipe is below the water supply pipe	Constructed using 150 psi pressure class pipe according to paragraph (7)(A) of this subsection

Texas Commission on Environmental Quality
Chapter 217 - Design Criteria for Domestic Wastewater Systems

	-or- Encased in cement-stabilized sand according to paragraph (7)(B) of this subsection -or- Encased in a casing pipe according to paragraph (7)(C) of this subsection
Manhole within nine feet of a water supply pipe	No measurable leakage according to paragraph (8)(A) of this subsection -or- Encased in cement-stabilized sand according to paragraph (8)(B) of this subsection

GRADING NOTES

1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

BENCHMARK NOTES

ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83, SURFACE ADJUSTMENT CONVERSION FACTOR IS 1.00013.

BENCHMARK LIST
TBM #1
SQUARE CUT ON NW CORNER OF SIDEWALK AT THE SW CORNER OF SUBJECT TRACT
GRID NORTHING: 10,203,049.71
GRID EASTING: 3,082,826.73
ELEVATION: 1034.75'

TBM #2
SQUARE CUT ON SE CORNER OF CULVERT SAFETY END TREATMENT SOUTH OF SE CORNER OF SUBJECT TRACT
GRID NORTHING: 10,203,480.25
GRID EASTING: 3,084,353.79
ELEVATION: 996.98'

GENERAL CONSTRUCTION NOTES

GENERAL
WE UNDERSTAND CURRENT PLANS ARE THAT THE ROADWAYS WILL LIKELY CONSIST OF FLEXIBLE PAVEMENTS. THEREFORE, WE HAVE PREPARED THE FOLLOWING RECOMMENDATIONS FOR THE DESIGN AND CONSTRUCTION OF FLEXIBLE PAVEMENT SYSTEMS. WE UNDERSTAND THE PROPOSED PAVEMENTS FOR THIS DEVELOPMENT WILL BE DESIGNED AND CONSTRUCTED IN GENERAL ACCORDANCE WITH THE CITY OF AUSTIN DESIGN STANDARDS. THESE GUIDELINES REQUIRE THAT STREETS BE DESIGNED USING THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) "GUIDE FOR DESIGN OF PAVEMENT STRUCTURES".

SUBGRADE DESIGN CONSIDERATIONS
BASED ON THE SUBSURFACE INFORMATION OBTAINED AT THE SOIL BORINGS DRILLED ALONG THE ALIGNMENT OF THE PROPOSED STREETS, THE PAVEMENT SUBGRADE SOIL PROFILE GENERALLY CONSISTS OF A FIRM TO STIFF FAT CLAY (CH). AS A PART OF ANY PAVEMENT DESIGN, THE STRENGTH OF THE UNDERLYING SUBGRADE MUST BE TAKEN INTO CONSIDERATION. THIS IS OFTEN ACCOMPLISHED BY PERFORMING A LABORATORY CALIFORNIA BEARING RATIO (CBR) TEST TO APPROXIMATE A SOIL RESILIENT MODULUS WHICH IS UTILIZED IN THE DESIGN. BASED UPON THE FINDINGS OF OUR EXPLORATORY BORINGS AND RESULTS OF LABORATORY TESTING, OUR EXPERIENCE WITH SIMILAR SOILS IN NEARBY SUBDIVISION UNITS, WE HAVE USED A DESIGN CBR OF APPROXIMATELY TWO (2) FOR THE PAVEMENTS WITHIN THIS DEVELOPMENT. TRAFFIC INFORMATION WAS NOT AVAILABLE AT THE TIME OF THIS REPORT; THEREFORE, ESALS WERE ESTIMATED AND CATEGORIZED AS LIGHT-DUTY AND HEAVY-DUTY TRAFFIC. THE FOLLOWING PAVEMENT DESIGN PARAMETERS WERE UTILIZED FOR THIS PROJECT:

GEOTECHNICAL REPORT NOTES

ALL EARTHWORK, GRADING AND SITE IMPROVEMENTS SHALL FOLLOW THE RECOMMENDATIONS IN PROPOSED "MIXED-RETAIL DEVELOPMENT" NWC OF RONALD REAGAN BLVD. & GABRIELS HORN RD. DATED MARCH 2023 CONDUCTED BY GEOSCIENCE ENGINEERS, LLC.

TCEQ NOTES

1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
2. ALL PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST ALSO BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS.
3. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.
4. WATER TRANSMISSION AND DISTRIBUTION LINES MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATERLINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE.
5. THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY AWWA FORMULAS.
6. ALL WATERLINES SHALL BE HYDROSTATIC LEAK TESTED IN CONFORMANCE WITH AWWA C600-93 FOR DUCTILE IRON PIPE AND AWWA C605-94 FOR PVC PIPE.
7. ALL WATERLINES SHALL BE DISINFECTED IN CONFORMANCE WITH AWWA C651-92.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CONTRIBUTING ZONE PLAN GENERAL CONSTRUCTION NOTES

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
   - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
   - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
   - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
   A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
   B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
   C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
   D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

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

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
GENERAL NOTES
LEANDER, TEXAS

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-GN01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

GN01

SHEET NO.
02
OF 34 SHEETS

I:\a641\0401\Submittal Sheets\CZP Set\a641-0401-p-gn01.dwg
User: challen
Last Modified: Sep. 15, 25 - 12:56
Plot Date/Time: Oct. 01, 25 - 15:23:43

GABRIELS HORN DEVELOPMENT FINAL PLAT

OWNER(LOTS 1-2): REAGAN GABRIELS REAL ESTATE LLC
5522 JENOLAN RIDGE LN
SUGAR LAND, TX 77479
CONTACT PERSON: SAMIR MAREDIA DEVUNI
PHONE: (832) 713-4985

OWNER(LOTS 3-5): BM22 LLC
2508 DAPPLE GRAY LANE
LEANDER, TX 78641
CONTACT PERSON: SWAMY DEVUNI
PHONE: (703) 220-7265

ENGINEER: LJA ENGINEERING, INC.
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN, TEXAS 78735
CONTACT PERSON: CHARLES HAGER, P.E.
PHONE: (512) 439-4700
FAX: (512) 493-4716

SURVEYOR: LJA SURVEYING, INC.
9830 COLONADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 78230
T.B.P.L.S. FIRM NO. 10194382
CONTACT: GORDON N. ANDERSON,R.P.L.S. No. 6617
PHONE: (512) 767-7398

AGENT: LJA ENGINEERING, INC.
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN, TEXAS 78735
CONTACT PERSON: CHARLES HAGER, P.E.
PHONE: (512) 439-4700
FAX: (512) 493-4716

FILING DATE: 05/23/2023

VICINITY MAP

PROJECT SUMMARY:

	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	TOTAL
SITE AREA ACRE	2.215	1.189	1.826	2.057	9.085	16.372
EX. LAND USE	VACANT	VACANT	VACANT	VACANT	VACANT	
PROP. LAND USE	COMM.	COMM.	COMM.	COMM.	COMM.	

AREA TABLE:

TOTAL EXISTING SITE AREA	17.821-AC
R.O.W. TO BE DEDICATED BY PLAT	1.449-AC
TOTAL NET SITE AREA	16.372-AC

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (4203), NAD83, ALL DISTANCES AND COORDINATES ARE SURFACE. TO ADJUST TO GRID, MULTIPLY SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.999880014.

OBSERVATIONS WERE COLLECTED USING A COMBINATION OF RTK AND THE VRS NETWORK.

BENCHMARK LIST:

1
5/8" IRON ROD WITH RED CAP STAMPED
"LJA CONTROL"
GRID NORTHING: 10,196,539.66
GRID EASTING: 3,085,963.94
ELEVATION: 889.20'

2
5/8" IRON ROD WITH RED CAP STAMPED
"LJA CONTROL"
GRID NORTHING: 10,196,420.17
GRID EASTING: 3,086,734.17
ELEVATION: 875.71'

SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	PLAT MAP
3	EASEMENTS
4	DESCRIPTION & TABLES
5	NOTES & SIGNATURES

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
9830 Colonade Boulevard Phone 210.503.2700
Suite 300
San Antonio, Texas 78230 T.B.P.L.S. Firm No. 10194382

CITY OF LEANDER PROJECT No. FP-23-0081

THIS PLAT FILED IN 05/23/2023

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
FINAL PLAT SHEET 1

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: A641-0401-R-FP01.dwg

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

FP01

SHEET NO.
03
OF 70 SHEETS

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Last Modified: Sep. 16, 25 - 15:53
Plot Date/Time: Oct. 01, 25 - 10:28:46

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User: chaper
Plot Date/Time: Apr. 22, 25 - 16:53:23

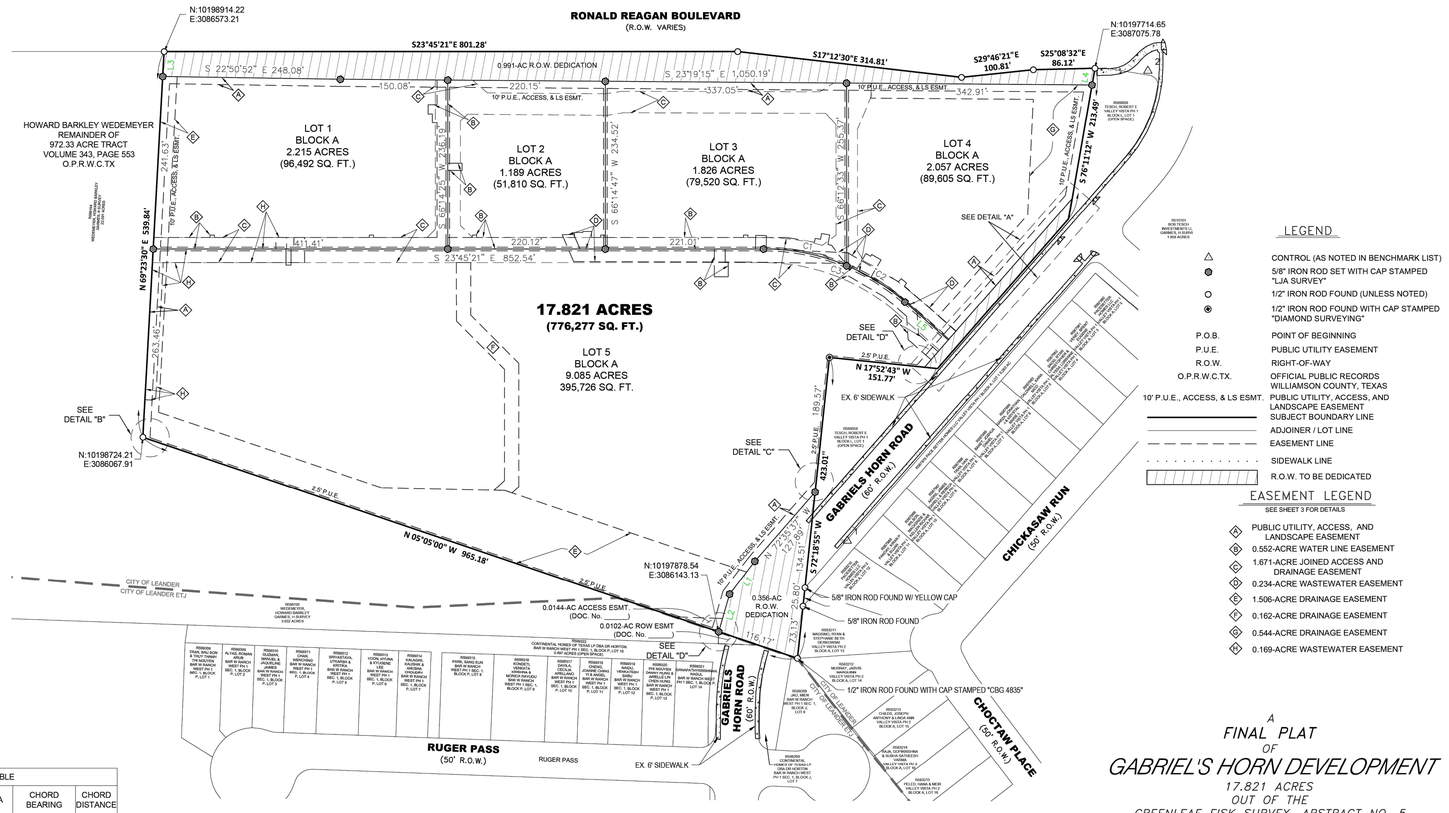
SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	PLAT MAP
3	EASEMENTS
4	DESCRIPTION & TABLES
5	NOTES & SIGNATURES

GABRIELS HORN DEVELOPMENT FINAL PLAT

100 50 0 100 200

SCALE: 1" = 100'



LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N76° 20' 14"W	58.09'
L2	S82° 27' 35"W	54.71'
L3	N69° 23' 30"E	34.75'
L4	S76° 11' 12"W	23.72'
L5	N17° 24' 23"E	80.93'
L6	N72° 35' 37"W	50.41'
L7	S76° 11' 12"W	28.76'
L8	N17° 52' 43"W	18.27'

CURVE TABLE					
CURVE #	RADIUS	ARC LENGTH	DELTA	CHORD BEARING	CHORD DISTANCE
C1	300.00	119.31'	22°47'12"	N12° 21' 45"W	118.53'
C2	300.00	95.82'	18°18'04"	N08° 10' 53"E	95.42'
C3	300.00	215.14'	41°05'16"	S03° 12' 43"E	210.56'

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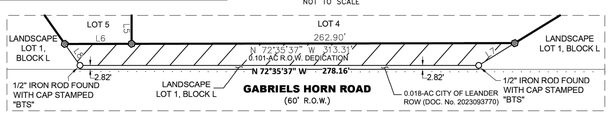
NOT TO SCALE



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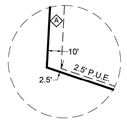

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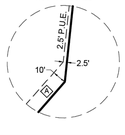

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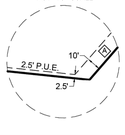

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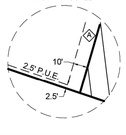

LEGEND

△	CONTROL (AS NOTED IN BENCHMARK LIST)
◎	5/8" IRON ROD SET WITH CAP STAMPED "LJA SURVEY"
○	1/2" IRON ROD FOUND (UNLESS NOTED)
◉	1/2" IRON ROD FOUND WITH CAP STAMPED "DIAMOND SURVEYING"
P.O.B.	POINT OF BEGINNING
P.U.E.	PUBLIC UTILITY EASEMENT
R.O.W.	RIGHT-OF-WAY
O.P.R.W.C.TX.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS
10' P.U.E., ACCESS, & LS ESMT.	PUBLIC UTILITY, ACCESS, AND LANDSCAPE EASEMENT
	SUBJECT BOUNDARY LINE
	ADJOINER / LOT LINE
	EASEMENT LINE
	SIDEWALK LINE
	R.O.W. TO BE DEDICATED

EASEMENT LEGEND
SEE SHEET 3 FOR DETAILS

A	PUBLIC UTILITY, ACCESS, AND LANDSCAPE EASEMENT
B	0.552-ACRE WATER LINE EASEMENT
C	1.671-ACRE JOINED ACCESS AND DRAINAGE EASEMENT
D	0.234-ACRE WASTEWATER EASEMENT
E	1.506-ACRE DRAINAGE EASEMENT
F	0.162-ACRE DRAINAGE EASEMENT
G	0.544-ACRE DRAINAGE EASEMENT
H	0.169-ACRE WASTEWATER EASEMENT

A
FINAL PLAT
OF
GABRIEL'S HORN DEVELOPMENT
17.821 ACRES
OUT OF THE
GREENLEAF FISK SURVEY, ABSTRACT NO. 5
AND THE HENRY GARMES SURVEY, ABSTRACT NO. 269
IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
9830 Colonade Boulevard Phone 210.503.2700
Suite 300
San Antonio, Texas 78230 T.B.P.L.S. Firm No. 10194382

CITY OF LEANDER PROJECT No. FP-23-0081

THIS PLAT FILED IN 05/23/2023

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Plot Date/Time: Apr. 22, 25 - 16:57:14

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
FINAL PLAT SHEET 2

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE:	09/10/2025
DESIGNED BY:	CRH
DRAWN BY:	LJA
CHECKED BY:	CRH
DRAWING NAME:	y641-040-FP01

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1366

JOB NUMBER:

FP02

SHEET NO.
04
OF 70 SHEETS

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

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User: mvillen
Last Modified: Sep. 16, 25 - 15:53
Plot Date/Time: Oct. 01, 25 - 16:25:52

GABRIELS HORN DEVELOPMENT FINAL PLAT

EASEMENT DETAILS

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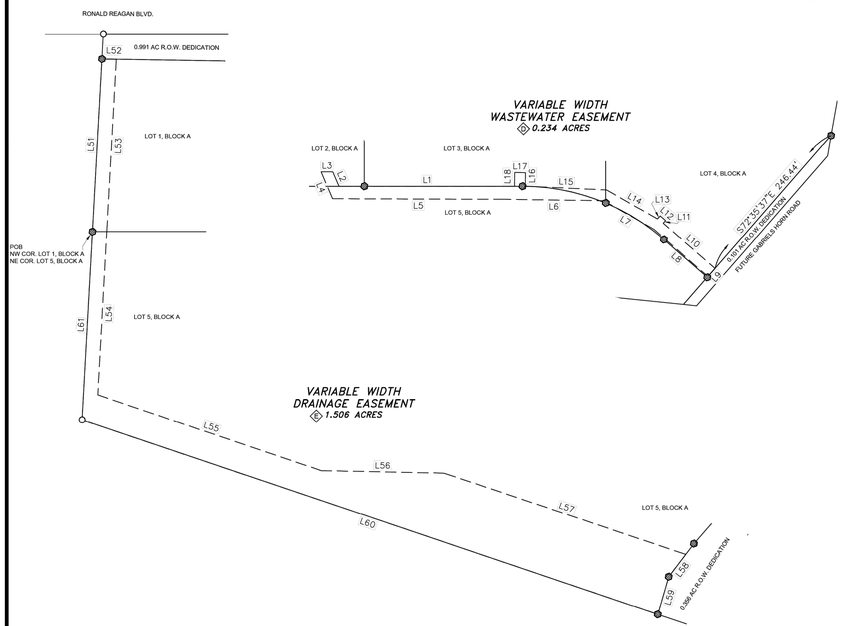
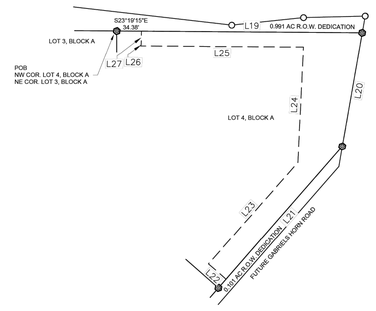
SCALE: 1" = 100'

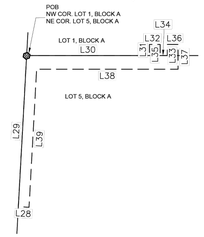


VARIABLE WIDTH WASTEWATER EASEMENT
0.234 ACRES

VARIABLE WIDTH DRAINAGE EASEMENT
0.544 ACRES

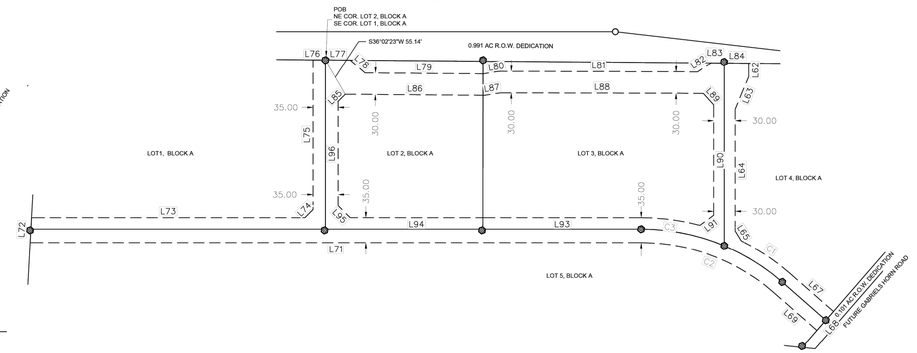


VARIABLE WIDTH WASTEWATER LINE EASEMENT
0.169 ACRES

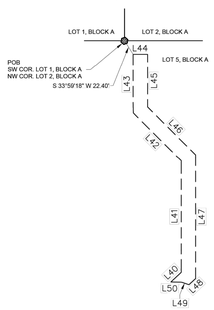


VARIABLE WIDTH DRAINAGE EASEMENT
1.506 ACRES

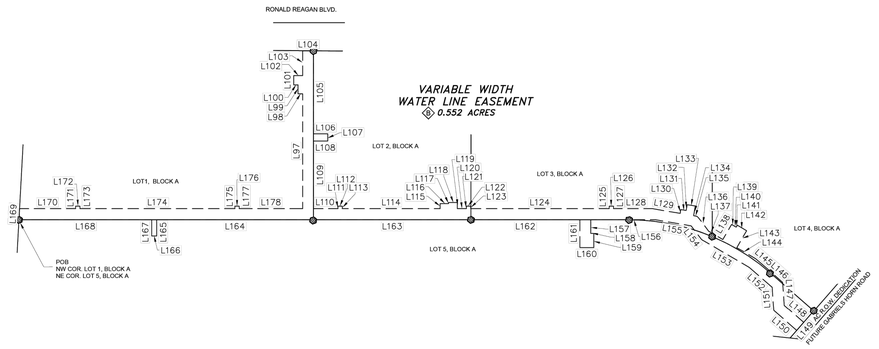
VARIABLE WIDTH JOINED ACCESS AND DRAINAGE EASEMENT
1.671 ACRES



20' DRAINAGE EASEMENT
0.162 ACRES



VARIABLE WIDTH WATER LINE EASEMENT
0.552 ACRES



SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	PLAT MAP
3	EASEMENTS
4	DESCRIPTION & TABLES
5	NOTES & SIGNATURES

A
FINAL PLAT
OF
GABRIELS HORN DEVELOPMENT
17.821 ACRES
OUT OF THE
GREENLEAF FISK SURVEY, ABSTRACT NO. 5
AND THE WILLIAM H. MONROE SURVEY, ABSTRACT NO. 453
IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
9830 ColonaDE Boulevard Phone 210.503.2700
Suite 300
San Antonio, Texas 78230 T.B.P.L.S. Firm No. 10194382

CITY OF LEANDER PROJECT No. FP-23-0081

THIS PLAT FILED IN 05/23/2023

3 OF 5

S:\Vectors\Survey\Projects\LJA5001\A541 Gabriel Horn\04d) Gabriel Horn\08 CAD\Working Files\FINAL PLAT\Gabriels Horn – Final Plat 1.00012_REV2.dwg
User: tsnyder Plot Date/Time: Apr. 15, 25 – 12:21:34

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
FINAL PLAT SHEET 3

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: A541-0401-R-FP01

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

FP03

SHEET NO.
05
OF 70 SHEETS

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User: chohen
Last Modified: Sep. 16, 25 – 15:53
Plot Date/Time: Oct. 10, 25 – 15:23:55

GABRIELS HORN DEVELOPMENT
FINAL PLAT

VARIABLE WIDTH WASTEWATER EASEMENT
(A) 0.234 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N23° 45' 21"W	245.25'
L2	N43° 06' 58"E	21.75'
L3	N23° 45' 21"W	16.31'
L4	S43° 06' 58"W	40.67'
L5	S23° 33' 27"E	239.93'
L6	S22° 58' 43"E	138.61'
L7	S05° 49' 31"W	80.98'
L8	S17° 24' 07"W	100.22'
L9	S72° 35' 36"E	14.99'
L10	N17° 24' 23"E	96.02'
L11	S72° 35' 34"E	4.97'
L12	N17° 24' 26"E	10.00'
L13	N72° 35' 34"W	5.85'
L14	N05° 49' 31"E	81.94'
L15	N21° 08' 11"W	113.61'
L16	N67° 01' 34"E	18.87'
L17	N22° 58' 26"W	15.00'
L18	S67° 01' 34"W	19.07'

VARIABLE WIDTH DRAINAGE EASEMENT
(B) 0.544 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L19	S23° 19' 15"E	308.53'
L20	S76° 11' 12"W	161.01'
L21	N72° 35' 37"W	246.78'
L22	N17° 24' 23"E	32.50'
L23	S72° 23' 16"E	188.71'
L24	N69° 02' 47"E	161.46'
L25	N23° 20' 48"W	227.55'
L26	N88° 44' 39"E	2.54'
L27	N66° 40' 45"E	18.47'

VARIABLE WIDTH WASTEWATER LINE EASEMENT
(C) 0.169 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L28	N20° 36' 30"W	14.93'
L29	N69° 23' 30"E	211.06'
L30	S23° 45' 21"E	171.32'
L31	N66° 25' 59"E	16.01'
L32	S23° 40' 59"E	15.00'
L33	S66° 19' 58"W	15.99'
L34	S23° 45' 21"E	10.13'
L35	N66° 14' 39"E	16.00'
L36	S23° 45' 46"E	15.00'
L37	S66° 14' 42"W	34.94'
L38	N23° 45' 18"W	197.50'
L39	S69° 24' 32"W	192.92'

20' DRAINAGE EASEMENT
(D) 0.162 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L40	S66° 57' 05"E	19.81'
L41	N66° 14' 39"E	155.79'
L42	N21° 14' 39"E	94.72'
L43	N66° 04' 25"E	82.01'
L44	S23° 45' 21"E	20.22'
L45	S66° 14' 39"W	73.70'
L46	S21° 14' 39"W	94.76'
L47	S66° 14' 39"W	172.73'
L48	N66° 57' 05"W	12.67'
L49	N05° 06' 07"W	10.84'
L50	N22° 35' 10"W	14.94'

VARIABLE WIDTH DRAINAGE EASEMENT
(E) 1.506 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L51	N69° 23' 30"E	241.63'
L52	S22° 50' 52"E	20.18'
L53	S69° 24' 41"W	241.31'
L54	S69° 24' 34"W	228.56'
L55	S05° 01' 27"E	329.69'
L56	S22° 35' 10"E	171.40'
L57	S05° 09' 17"E	356.43'
L58	N76° 20' 14"W	39.11'
L59	S82° 27' 35"W	54.71'
L60	N05° 05' 00"W	849.01'
L61	N69° 23' 30"E	263.46'

VARIABLE WIDTH JOINED ACCESS AND DRAINAGE EASEMENT
(F) 1.671 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L62	S66° 40' 45"W	18.47'
L63	S88° 44' 39"W	49.64'
L64	S66° 14' 39"W	169.79'
L65	S34° 48' 43"W	16.56'
L67	S17° 24' 23"W	80.49'
L68	N72° 35' 37"W	35.00'
L69	N17° 24' 23"E	80.49'
L71	N23° 45' 18"W	853.70'
L72	N69° 23' 30"E	35.05'
L73	S23° 45' 14"E	381.75'
L74	S68° 46' 04"E	16.26'
L75	N66° 14' 38"E	208.77'
L76	S23° 19' 15"E	17.26'
L77	S23° 19' 15"E	34.84'
L78	S16° 47' 20"W	27.08'
L79	S23° 19' 15"E	165.00'

LINE TABLE		
LINE #	BEARING	DISTANCE
L80	S32° 27' 00"E	23.03'
L81	S23° 35' 59"E	276.57'
L82	S56° 25' 25"E	22.79'
L83	S23° 19' 15"E	18.26'
L84	S23° 19' 15"E	34.38'
L85	S68° 32' 18"E	14.09'
L86	S23° 19' 15"E	194.84'
L87	S32° 27' 00"E	23.10'
L88	S23° 35' 59"E	282.53'
L89	S24° 22' 39"W	21.70'
L90	S66° 14' 39"W	154.19'
L91	N60° 19' 38"W	23.83'
L93	N23° 45' 21"W	220.88'
L94	N23° 45' 21"W	185.70'
L95	N21° 14' 23"E	23.96'
L96	N66° 14' 39"E	145.62'

CURVE TABLE					
CURVE #	RADIUS	ARC LENGTH	DELTA	CHORD BEARING	CHORD DISTANCE
C1	316.00	82.21'	14°54'21"	S09° 57' 13"W	81.98'
C2	281.00	201.88'	41°09'45"	N03° 10' 29"W	197.56'
C3	316.00	82.97'	15°02'38"	N16° 14' 02"W	82.73'

VARIABLE WIDTH WATER LINE EASEMENT
(G) 0.552 ACRES

LINE TABLE		
LINE #	BEARING	DISTANCE
L97	N66° 14' 40"E	160.25'
L98	N23° 45' 21"W	6.40'
L99	N66° 14' 39"E	12.47'
L100	N23° 50' 26"W	6.09'
L101	N66° 09' 13"E	13.00'
L102	S23° 49' 58"E	12.51'
L103	N66° 14' 15"E	34.52'
L104	S23° 19' 15"E	15.00'
L105	S66° 14' 13"W	116.27'
L106	S23° 45' 21"E	19.99'
L107	S66° 14' 39"W	10.00'
L108	N23° 45' 21"W	19.99'
L109	S66° 14' 39"W	93.86'
L110	S23° 45' 19"E	34.36'
L111	N66° 14' 36"E	3.50'
L112	S23° 45' 24"E	6.00'
L113	S66° 14' 36"W	3.50'
L114	S23° 45' 19"E	136.63'
L115	N66° 14' 40"E	7.09'
L116	S23° 45' 03"E	11.78'
L117	N66° 14' 41"E	1.41'
L118	S23° 45' 21"E	12.14'
L119	S66° 14' 41"W	8.51'
L120	S23° 45' 19"E	12.75'
L121	N66° 14' 36"E	3.50'
L122	S23° 45' 24"E	6.00'
L123	S66° 14' 36"W	3.50'
L124	S23° 45' 19"E	193.49'

LINE TABLE		
LINE #	BEARING	DISTANCE
L125	N66° 14' 36"E	3.50'
L126	S23° 45' 24"E	6.00'
L127	S66° 14' 36"W	3.50'
L128	S23° 45' 19"E	54.82'
L129	S14° 00' 31"E	38.99'
L130	N75° 57' 49"E	5.51'
L131	S14° 02' 11"E	7.60'
L132	N75° 58' 08"E	8.14'
L133	S14° 05' 52"E	11.50'
L134	S75° 54' 08"W	13.66'
L135	S14° 01' 52"E	4.91'
L136	S29° 12' 43"W	26.69'
L137	S06° 23' 35"W	22.82'
L138	S83° 30' 55"E	24.37'
L139	S06° 21' 29"W	6.50'
L140	S06° 22' 50"W	1.10'
L141	S83° 37' 10"E	3.00'
L142	S06° 19' 12"W	15.07'
L143	N83° 35' 44"W	27.39'
L144	S06° 24' 16"W	30.36'
L145	S17° 07' 19"W	12.82'
L146	S17° 30' 06"W	37.33'
L147	S62° 24' 21"W	32.50'
L148	S17° 24' 23"W	36.31'
L149	N72° 35' 37"W	14.98'
L150	N17° 22' 59"E	42.52'
L151	N62° 24' 21"E	32.50'
L152	N17° 24' 16"E	42.49'

LINE TABLE		
LINE #	BEARING	DISTANCE
L153	N06° 24' 16"E	77.07'
L154	N28° 54' 16"E	24.11'
L155	N14° 01' 52"W	50.06'
L156	N23° 47' 55"W	90.81'
L157	S66° 15' 35"W	18.93'
L158	S23° 42' 18"E	4.23'
L159	S66° 08' 49"W	19.64'
L160	N23° 46' 24"W	19.51'
L161	N66° 14' 39"E	38.58'
L162	N23° 45' 21"W	152.22'
L163	N23° 45' 21"W	220.12'
L164	N23° 45' 21"W	218.98'
L165	S66° 14' 24"W	22.43'
L166	N23° 47' 58"W	7.00'
L167	N66° 14' 39"E	22.43'
L168	N23° 45' 21"W	185.42'
L169	N69° 23' 30"E	16.09'
L170	S23° 45' 19"E	78.33'
L171	N66° 14' 39"E	3.50'
L172	S23° 45' 21"E	6.00'
L173	S66° 14' 39"W	3.50'
L174	S23° 45' 19"E	216.58'
L175	N66° 14' 39"E	3.50'
L176	S23° 45' 21"E	6.00'
L177	S66° 14' 39"W	3.50'
L178	S23° 45' 19"E	88.60'

FIELD NOTE DESCRIPTION
17.821 ACRES (776,277 SQUARE FEET)
GABRIELS HORN

BEING A 17.821 ACRE (776,277 SQUARE FEET) PARCEL OF LAND, LOCATED IN THE HENRY GARNES SURVEY, ABSTRACT NO. 269, AND THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS, AND BEING OUT OF THE CERTAIN TRACT OF LAND CONTAINING 17.821 ACRES CONVEYED TO REAGAN GABRIELS REAL ESTATE LLC, A TEXAS LIMITED LIABILITY COMPANY, DESCRIBED AND RECORDED IN DOCUMENT NO. 2022000020 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.TX.), SAID 17.821 ACRE PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2-INCH IRON ROD WITH CAP FOUND FOR COMMON CORNER OF SAID 17.821 ACRE TRACT AND THE REMAINDER OF A CALLED 972.33 ACRE TRACT OF LAND CONVEYED TO HOWARD BARKLEY WEDEMEYER DESCRIBED AND RECORDED IN VOL. 343, PG. 553 O.P.R.W.C.TX., BEING SITUATED ON THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF RONALD REAGAN BOULEVARD, A VARIABLE WIDTH RIGHT-OF WAY (R.O.W.), FOR CORNER OF SAID 17.821 ACRE PARCEL, WITH COORDINATE VALUES OF NORTH: 10,198,914.22 AND EAST: 3,086,573.21;

THENCE CONTINUING ALONG THE COMMON BOUNDARY LINE OF SAID 17.821 ACRE TRACT AND SAID RONALD REAGAN BOULEVARD, THE FOLLOWING FOUR (4) COURSES AND DISTANCES:

1. SOUTH 23°45'21" EAST A DISTANCE OF 801.28 FEET, TO A 1/2-INCH IRON ROD FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

2. SOUTH 17°12'30" EAST A DISTANCE OF 314.81 FEET, TO A 1/2-INCH IRON ROD FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

3. SOUTH 29°46'21" EAST A DISTANCE OF 100.81 FEET, TO A 1/2-INCH IRON ROD FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

4. SOUTH 25°08'32" EAST A DISTANCE OF 86.12 FEET, TO A 1/2-INCH IRON ROD FOUND FOR COMMON CORNER OF SAID 17.821 ACRE TRACT, AND LOT 1, BLOCK 'L' (LANDSCAPE) OF VALLEY VISTA, PHASE 1 FINAL PLAT, A DEDICATED SUBDIVISION IN WILLIAMSON COUNTY, PLAT RECORDED IN DOCUMENT NO. 2018015621 O.P.R.W.C.TX., FOR CORNER OF THE 17.821 ACRE PARCEL;

THENCE CONTINUING ALONG THE COMMON BOUNDARY LINE OF SAID 17.821 ACRE TRACT AND SAID LOT 1, BLOCK 'L' (LANDSCAPE), THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1. SOUTH 76°11'12" WEST A DISTANCE OF 213.49 FEET, TO A 1/2-INCH IRON ROD WITH CAP STAMPED "BTS" FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

2. NORTH 72°35'37" WEST A DISTANCE OF 278.16 FEET, TO A 1/2-INCH IRON ROD WITH CAP STAMPED "BTS" FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

3. NORTH 17°52'43" WEST A DISTANCE OF 151.77 FEET, TO A 1/2-INCH IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOUND FOR CORNER OF THE 17.821 ACRE PARCEL;

THENCE SOUTH 72°18'55" WEST, ALONG THE COMMON BOUNDARY LINE OF SAID 17.821 ACRE TRACT, SAID LOT 1, BLOCK 'L' (LANDSCAPE), THE WESTERN TERMINUS OF GABRIELS HORN ROAD, A 60 FOOT R.O.W., AND LOT 1, HOA (LANDSCAPE), OF VALLEY VISTA, PHASE 1 FINAL PLAT, AND LOT 13, BLOCK 'A' OF VALLEY VISTA PHASE 2 FINAL PLAT, A DEDICATED SUBDIVISION IN WILLIAMSON COUNTY, PLAT RECORDED IN DOCUMENT NO. 2019062800 O.P.R.W.C.TX., PASSING AT A DISTANCE OF 324.08 FEET A 5/8-INCH IRON ROD WITH YELLOW CAP, AT A DISTANCE OF 349.88 FEET A 5/8-INCH IRON ROD, CONTINUING FOR A TOTAL DISTANCE OF 423.01 FEET TO THE COMMON CORNER OF SAID LOT 13, BLOCK 'A' AND LOT 14, BLOCK 'A' OF VALLEY VISTA PHASE 2 FINAL PLAT, AND LOT 6, BLOCK 'J', OF THE BAR W RANCH PHASE 1, SECTION 1, A DEDICATED SUBDIVISION IN WILLIAMSON COUNTY, PLAT RECORDED IN DOCUMENT NO. 2020078741 O.P.R.W.C.TX., AND SAID 17.821 ACRE TRACT, FOR CORNER OF THE 17.821 ACRE PARCEL, FROM WHICH A 1/2-INCH IRON ROD WITH CAP STAMPED "CBG 4835" BEARS SOUTH 83°07'05" WEST A DISTANCE OF 0.29';

THENCE NORTH 05°05'00" WEST, ALONG THE COMMON BOUNDARY LINE OF SAID 17.821 ACRE TRACT, SAID LOT 6, BLOCK 'J', LOT 7, BLOCK 'J' AND THE EASTERN TERMINUS OF GABRIELS HORN ROAD, A 60 FOOT R.O.W., OF BAR W RANCH PHASE 1, SECTION 1, AND SAID REMAINDER OF 972.33 ACRE TRACT, A DISTANCE OF 965.18 FEET TO A 1/2-INCH IRON ROD FOUND FOR COMMON CORNER OF SAID 17.821 ACRE TRACT AND SAID REMAINDER OF 972.33 ACRE TRACT, FOR CORNER OF THE 17.821 ACRE PARCEL;

THENCE NORTH 69°23'30" EAST, CONTINUING ALONG THE COMMON BOUNDARY LINE OF SAID 17.821 ACRE TRACT AND SAID REMAINDER OF 972.33 ACRE TRACT, A DISTANCE OF 539.84 FEET TO THE POINT OF BEGINNING, AND CONTAINING 17.821 ACRES (776,277 SQUARE FEET) OF LAND, MORE OR LESS.

SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	PLAT MAP
3	EASEMENTS
4	DESCRIPTION & TABLES
5	NOTES & SIGNATURES

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
9830 ColonaDE Boulevard Phone 210.503.2700
Suite 300
San Antonio, Texas 78230 T.B.P.L.S. Firm No. 10194382

CITY OF LEANDER PROJECT No. FP-23-0081

THIS PLAT FILED IN 05/23/2023

S:\Sectors\Survey\Projects\LJA5001\A641 Gabriel Horn\040 Gabriel Horn\06 CAD\Working Files\FINAL PLAT\Gabriels Horn — Final Plat 1.00012_REV2.dwg
User: bdayton Plot Date/Time: Apr. 15, 25 — 13:21:53

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
FINAL PLAT SHEET 4

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-FP01

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

FP04

SHEET NO.
06
OF 70 SHEETS

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User: cmillen
Last Modified: Sep. 16, 25 — 15:53
Plot Date/Time: Oct. 01, 25 — 15:54:50

GABRIELS HORN DEVELOPMENT
FINAL PLAT

THE STATE OF TEXAS §
COUNTY OF WILLIAMSON §

THAT, REAGANS GABRIELS REAL ESTATE, LLC, BEING THE OWNER OF THE REMAINDER OF THE 17.821 ACRE TRACT (1,405,080 SQUARE FEET) OF LAND, LOCATED IN THE HENRY GARMES SURVEY, ABSTRACT NO. 269 AND THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A 17.821 ACRE TRACT OF LAND DESCRIBED IN A SPECIAL WARRANTY DEED TO REAGANS GABRIELS REAL ESTATE, LLC RECORDED IN DOCUMENT NUMBER 2022000020 O.P.R.W.C.TX., DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS:

"GABRIELS HORN DEVELOPMENT FINAL PLAT"

_____
REAGANS GABRIELS REAL ESTATE, LLC
5522 JENOLAN RIDGE LN.
SUGAR LAND, TEXAS 77479
CONTACT PERSON: SAMIR MEREDIA
PHONE: (832) 713-4985

THE STATE OF TEXAS §
COUNTY OF WILLIAMSON §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE DAY OF___ 20___, PERSONALLY APPEARED, SAMIR MAREDIA, AS CONTACT OF REAGANS GABRIELS REAL ESTATE LLC, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE __ DAY OF _____ 20___.

NOTARY PUBLIC-STATE OF _____

PRINTED NAME: _____
MY COMMISION EXPIRES: _____

THE STATE OF TEXAS §
COUNTY OF WILLIAMSON §

THAT, BM22 LLC, BEING THE OWNER OF A BEING A 13.868 ACRE TRACT (604,092 SQUARE FEET) OF LAND, LOCATED IN THE HENRY GARMES SURVEY, ABSTRACT NO. 269 AND THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A 13.868 ACRE TRACT OF LAND DESCRIBED IN A SPECIAL WARRANTY DEED TO BM22 LLC RECORDED IN DOCUMENT NUMBER 2024015602 O.P.R.W.C.TX., DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS:

"GABRIELS HORN DEVELOPMENT FINAL PLAT"

_____
LIMBADRI SWAMY DEVUNI
2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641
CONTACT PERSON: LIMBADRI SWAMY DEVUNI
EMAIL: Swamy@Latitude-Investment.com
PHONE: (703) 220-7265

THE STATE OF TEXAS §
COUNTY OF WILLIAMSON §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE DAY OF___ 20___, PERSONALLY APPEARED, SAMIR MAREDIA, AS CONTACT OF REAGANS GABRIELS REAL ESTATE LLC, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE __ DAY OF _____ 20___.

NOTARY PUBLIC-STATE OF _____

PRINTED NAME: _____
MY COMMISION EXPIRES: _____

THE STATE OF TEXAS §
COUNTY OF WILLIAMSON §

STATE OF TEXAS §
COUNTY OF BEXAR §

THAT I, GORDON N. ANDERSON, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICIES PROVIDED BY ALAMO TITLE INSURANCE, OF NO. SAT-41-4000412200586-NK, HAVING AN EFFECTIVE DATE OF APRIL 4, 2022, AND AN ISSUED DATE APRIL 14, 2022 AND NOTHING FURTHER CERTIFICATE (FILE No. CS2024154 DATED MAY 29, 2024) AND HAVE BEEN NOTED OR SHOWN HEREON.

STATE OF TEXAS
REGISTERED
GORDON N. ANDERSON
6617
PROFESSIONAL
LAND SURVEYOR

_____ DATE
GORDON N. ANDERSON, R.P.L.S. No. 6617
LJA SURVEYING, INC.,
9830 COLONADE BOULEVARD, SUITE 300
SAN ANTONIO, TEXAS 778230
T.B.P.L.S. FIRM NO. 10194382

STATE OF TEXAS §
COUNTY OF TRAVIS §

THAT I, CHARLES R. HAGER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

_____ DATE
CHARLES R. HAGER V, P.E. No. 127034
LJA ENGINEERING, INC.
7500 RIALTO BOULEVARD, BUILDING II, SUITE 100
AUSTIN, TEXAS 78735

CITY OF LEANDER §
CERTIFICATE OF APPROVAL §

APPROVED THIS THE DAY OF ___, 20___ A.D. AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF COUNTY.

_____ _____ _____
DONNIE MAHAN, CHAIRMAN DATE:
PLANNING & ZONING COMMISION
CITY OF LEANDER, TEXAS

_____ _____ _____
ATTEST: DATE:
ELLEN COUFAL, RECORDING SECRETARY
PLANNING AND ZONING COMMISION
CITY OF LEANDER, TEXAS

THE STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON §

I, NANCY RISTER, CLERK OF COUNTY COURT, OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE _____ DAY OF _____, _____ A.D., AND DULY RECORDED ON THE _____ DAY OF _____, _____ A.D., AT _____ O'CLOCK _____, IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS IN INSTRUMENT NO. _____

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY OF OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

_____
NANCY RISTER, CLERK COUNTY COURT OF WILLIAMSON COUNTY, TEXAS

BY: _____, DEPUTY

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (4203), NAD83. ALL DISTANCES AND COORDINATES ARE SURFACE. TO ADJUST TO GRID, MULTIPLY SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.999880014.

OBSERVATIONS WERE COLLECTED USING A COMBINATION OF RTK AND THE VRS NETWORK.

LEGAL DESCRIPTION:

BEING A 17.821 ACRE TRACT (1,405,080 SQUARE FEET) OF LAND, LOCATED IN THE HENRY GARMES SURVEY, ABSTRACT NO. 269 AND THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, ALL OF A 17.821 ACRE TRACT OF LAND DESCRIBED IN A SPECIAL WARRANTY DEED TO REAGANS GABRIELS REAL ESTATE, LLC DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2022000020 IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.TX.)

FINAL PLAT NOTES:

1) THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS.
2) NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND WASTEWATER FACILITIES.
3) A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.
4) NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
5) PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.
6) ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
7) IN ADDITION TO THE EASEMENTS SHOWN HEREIN, A TEN (10') FOOT WIDE PUBLIC UTILITY EASEMENT SHALL BE DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY AND TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.
8) NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0455F OF WILLIAMSON COUNTY, EFFECTIVE ON DECEMBER 20, 2019.
9) SIDEWALKS SHALL BE INSTALLED ON SUBDIVISION SIDE OF RONALD REAGAN, AND BOTH SIDES OF GABRIELS HORN. THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF LOTS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED, SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS CONSTRUCTED.
10) ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.
11) THIS PLAT CONFORMS TO THE PRELIMINARY PLAT APPROVED BY THE PLANNING & ZONING COMMISSION ON APRIL 13, 2023.
12) APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.
13) ALL DRIVE LANES, FIRE LANES, AND DRIVEWAYS WITHIN THIS SUBDIVISION SHALL PROVIDE FOR RECIPROCAL ACCESS FOR INGRESS AND EGRESS TO ALL OTHER LOTS WITHIN THE SUBDIVISION AND TO ADJACENT PROPERTIES.
14) A PROPORTIONATE ROADWAY ADEQUACY PAYMENT FOR EACH LOT WILL BE REQUIRED WITH EACH SITE DEVELOPMENT PERMIT.

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
9830 ColonaDE Boulevard Phone 210.503.2700
Suite 300
San Antonio, Texas 78230 T.B.P.L.S. Firm No. 10194382

CITY OF LEANDER PROJECT No. FP-23-0081

THIS PLAT FILED IN 05/23/2023 5 OF 5

W:\pdfs\1040\1-Leander\Gabriels Horn\Distribution\1 Final Plat\1.0 Gabriels Horn - Final Plat 1.00012_JR.V2.dwg
User: dmyer
Plot Date/Time: Apr. 22, 25 - 17:08:24

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
FINAL PLAT SHEET 5

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: 1044-0401-P-FP01.dwg

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

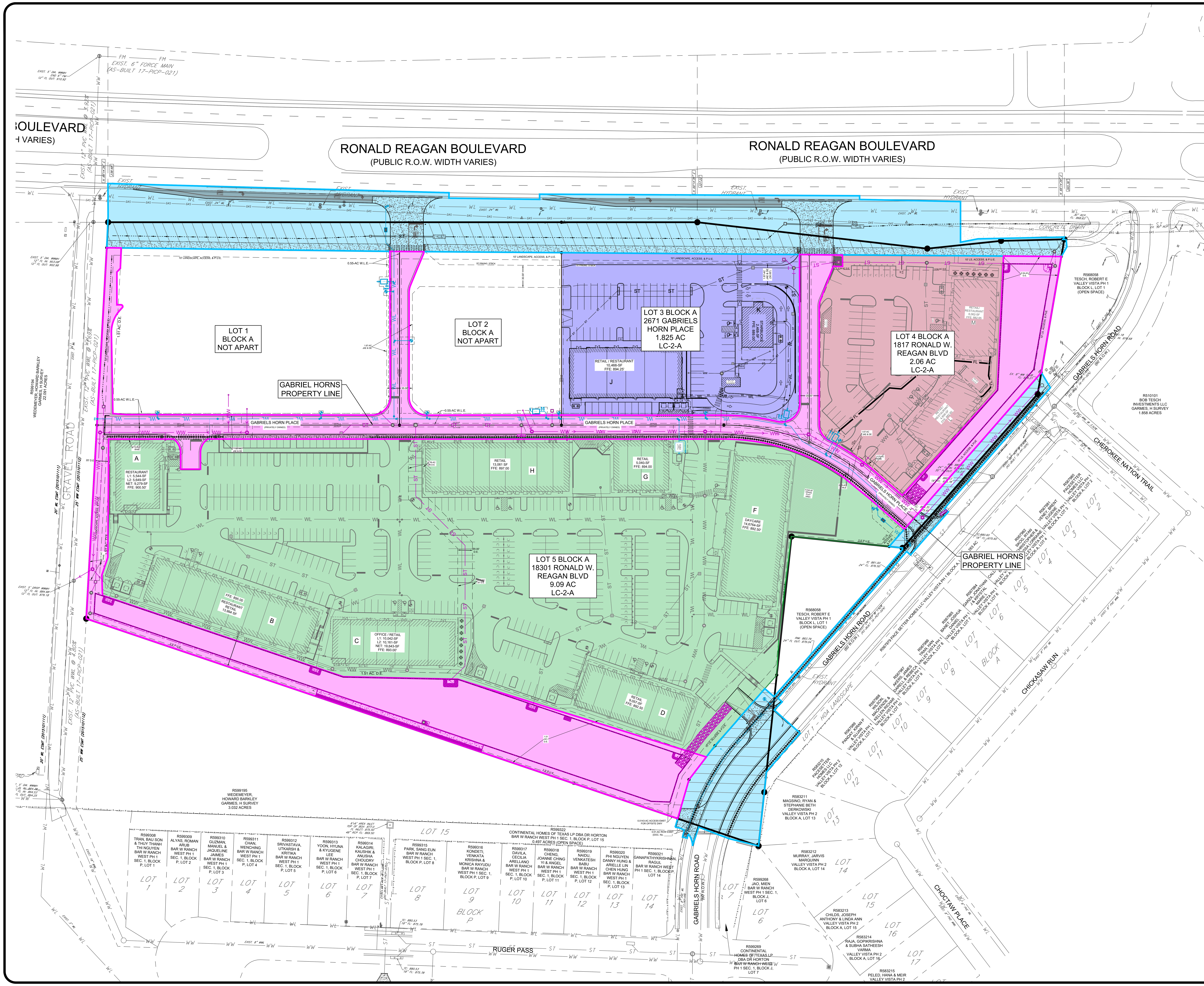
JOB NUMBER:

FP05

SHEET NO.
07
OF 70 SHEETS

LEANDER PROJECT No. SD-24-0226

I:\pdfs\1040\Submittal Sheets\CP Set\1044-0401-P-FP01.dwg
User: chaben
Last Modified: Sep. 15, 25 - 15:53
Plot Date/Time: Oct. 03, 25 - 15:24:05



LEGEND

- FIRE LANE
- 667 EXISTING CONTOUR MINOR
- 670 EXISTING CONTOUR MAJOR
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WQZ WATER QUALITY / BUFFER ZONE
- ST STORM SEWER LINE
- WW WASTEWATER LINE
- WASTEWATER SERVICE
- WL WATER LINE
- WATER SERVICE
- R.O.W. DEDICATION (EXISTING / NEW)
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- LOT 3 SDP - CoL # SD-24-0247
- LOT 4 SDP - CoL # SD-24-0246
- LOT 5 SDP - CoL # SD-24-0245
- OVERALL SHARED IMPROVEMENTS SDP-24-0226
- PICP - CoL # PICP-23-0079
- WL UTILITIES PROPOSED UNDER PICP - CoL # PICP-23-0079
- WW / ST UTILITIES PROPOSED UNDER SDP - CoL # SD-24-0226

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

ACCESS NOTES:
1. MINIMUM DRIVEWAY SPACING IS 75' FOR ALL PROPOSED DRIVEWAYS (COA TRANSPORTATION MANUAL SEC. 5.3.2 TABLE 5-2 MINIMUM FOR COMMERCIAL COLLECTORS).
2. PROPOSED DRIVEWAYS REQUIRE 200' SIGHT DISTANCE (COA TRANSPORTATION MANUAL SEC. 1.3.1 TABLE 5-2 MINIMUM FOR 2-3 LANE STREETS).

WATER QUALITY NOTE:
PROJECT IS LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE AND REQUIRES TCEQ APPROVAL OF WATER QUALITY IMPROVEMENTS

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20, 2019.

LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL, L.P. TO REAGAN GABRIELS REAL ESTATE, L.L.C. DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C.)

OWNERSHIP INFORMATION: (LOTS 1 - 2)
REAGAN GABRIELS REAL ESTATE, LLC
5522 JENOLAN RIDGE LANE
SUGARLAND, TEXAS 77479
CONTACT PERSON: SAMIR MAREDIA
PHONE: (832) 713-4985

OWNERSHIP INFORMATION: (LOTS 3 - 5)
BM 22, LLC
2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641
CONTACT PERSON: SWAMY DEVUNI
PHONE: (703) 220-7265

R.O.W. DEDICATION SUMMARY:

STREET NAME	R.O.W. AREA
GABRIELS HORN ROAD	0.46 AC.
RONALD REAGAN BLVD	0.99 AC.
TOTAL PROP. ROW	1.45 AC.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
MASTER PLAN SHEET
LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-MP01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

MP01

SHEET NO. 08 OF 70 SHEETS

I:\a641\0401\Submittal Sheets\CZP Set\A641-0401-P-MP01.dwg
User: chollen
Last Modified: Sep. 16, 25 - 12:14
Plot Date/Time: Oct. 01, 25 - 15:25:16

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
PICP EXISTING CONDITIONS & DEMOLITION PLAN
LEANDER, TEXAS

SCALE IN FEET
1" = 60'

LEGEND

- 667 — EXISTING CONTOUR MINOR
- 670 — EXISTING CONTOUR MAJOR
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- CITY LIMITS LINE
- ZONING BOUNDARY
- ST — STORM SEWER LINE
- WW — WASTEWATER LINE
- WASTEWATER SERVICE
- WL — WATER LINE
- WATER SERVICE
- LEANDER ULT.-DEV. 100-YR ATLAS 14 FP
- LEANDER EX. 100-YR ATLAS14 FP
- X — CHAIN-LINK FENCE
- TREE (HERITAGE) TO REMAIN (WILL BE REMOVED UNDER CoL # SD-24-0226)
- TREE TO REMAIN (WILL BE REMOVED UNDER COL # SD-24-0226)
- TREE TO REMAIN (HERITAGE)
- STREET SIGN
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- IRON PIPE FOUND (AS NOTED)
- COTTON-GIN SPINDLE FOUND
- MAG NAIL FOUND
- "X" SCRIBED IN CONCRETE

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN. AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20,2019.

TCEQ EDWARDS AQUIFER NOTE:
THIS SITE IS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

WATERSHED NOTE:
THIS SITE IS WITHIN THE SOUTH FORK SAN GABRIEL RIVER WATERSHED.

BUFFER ZONE NOTE:
THIS SUBDIVISION IS NOT SUBJECT TO CITY OF LEANDER BUFFER ZONE (DEFINED BY FEMA 100-YR FLOODPLAIN LIMITS).

TREE PROTECTION NOTE:
TREE REMOVAL, MITIGATION, AND OTHER APPLICABLE REQUIREMENTS SHALL BE ADDRESSED DURING SITE DEVELOPMENT. NO TREES ARE PROPOSED TO BE REMOVED AS PART OF THIS PRELIMINARY PLAT WITHIN EXISTING AND/OR PROPOSED PUBLIC R.O.W. SEE SHEET TP01 FOR TREE PROTECTION PLAN AND TP02 FOR TREE LIST.

LINE TABLE

LINE	BEARING	DISTANCE
L1	S29°46'21"E	100.81'
L2	S25°08'32"E	86.12'
L3	N72°18'55"E	94.06'

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-EX01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

JOB NUMBER:
A4971

EX01

SHEET NO.
09
OF 70 SHEETS

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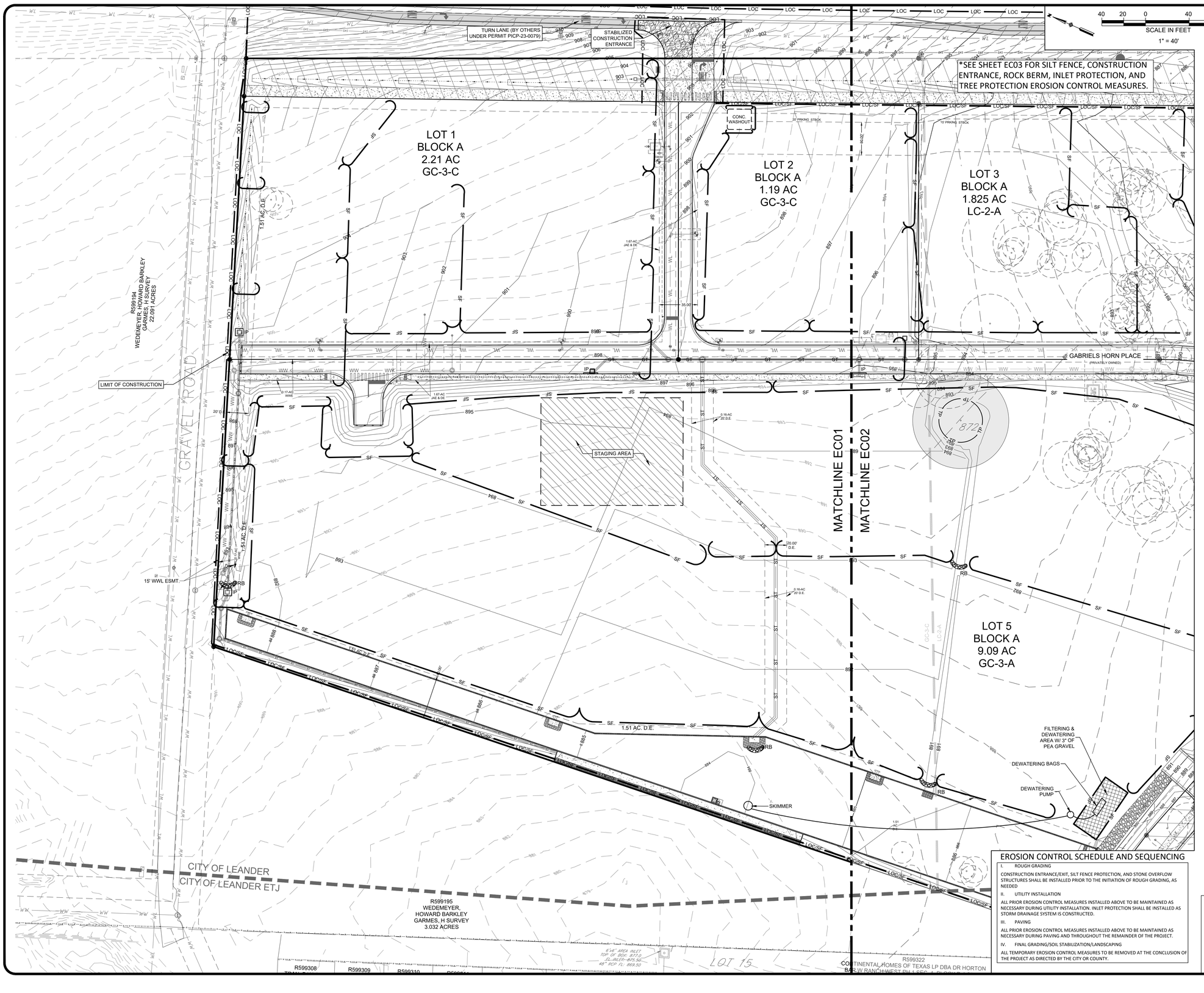
User: challen
Last Modified: Sep. 15, 25 - 12:57
Plot Date/Time: Oct. 01, 25 - 15:26:10



LEGEND

PROPOSED	EXISTING	
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
		PROPERTY BOUNDARY
RB		ROCK BERM
SCE		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN / TREE PROTECTION (CoL DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

NOTES:

1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLAIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5,1)
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SPOILS STAGING NOTES:
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CONSTRUCTION SEQUENCE

1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
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4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING. TEMPORARY ROCK BERMS SHALL BE INSTALLED DIRECTLY AFTER CLEARING AND GRUBBING IS COMPLETED.
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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
EROSION & SEDIMENTATION CONTROL PLAN
SHEET 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-EC01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
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LICENSED PROFESSIONAL ENGINEER

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JOB NUMBER: A4971

EC01

SHEET NO. 10 OF 70 SHEETS

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User: cholten
Last Modified: Sep. 15, 25 - 11:51
Plot Date/Time: Oct. 01, 25 - 10:27:51

*SEE SHEET EC03 FOR SILT FENCE, CONSTRUCTION ENTRANCE, ROCK BERM, INLET PROTECTION, AND TREE PROTECTION EROSION CONTROL MEASURES.

TURN LANE (BY OTHERS UNDER PERMIT PICP-23-0079)

STABILIZED CONSTRUCTION ENTRANCE

CONC. WASHOUT

DEWATERING BAGS

FILTERING & DEWATERING AREA W/ 3" OF PEA GRAVEL

DEWATERING PUMP

SKIMMER

STAGING AREA

LOT 2
BLOCK A
1.19 AC
GC-3-C

LOT 3
BLOCK A
1.825 AC
LC-2-A

LOT 4
BLOCK A
2.06 AC

LOT 5
BLOCK A
9.09 AC
GC-3-C

R568058
TESCH, ROBERT E
VALLEY VISTA PH 1
BLOCK L, LOT 1
(OPEN SPACE)

R510101
BOB TESCH
INVESTMENTS LL
GARMES, H SURVE
1.858 ACRES

GABRIELS HORN PLACE
(PRIVATELY OWNED)

GABRIELS HORN ROAD
(60' R.O.W.)

CHEROKEE NATION TRAIL

CHICKASAW RUN

MATCHLINE EC01

MATCHLINE EC02

R567980
PACESETTER HOMES LLC
VALLEY VISTA PH 1
BLOCK A, LOT 2

R567981
VENEZ, BRENT
EUGENE
VALLEY VISTA PH 1
BLOCK A, LOT 3

R567982
SKOP, RYAN
CHRISTOPHER &
ALYSSA LORRAINE
VALLEY VISTA PH 1
BLOCK A, LOT 4

R567983
CALDWELL, KARA
NICO
VALLEY VISTA PH 1
BLOCK A, LOT 5

R567984
GARZA, JONATHAN
J & KRYSTAL
MARIE L
VALLEY VISTA PH 1
BLOCK A, LOT 6

R567985
BANET, JOSHUA
DAVID
VALLEY VISTA PH 1
BLOCK A, LOT 7

R567986
TRAN, HAN
VALLEY VISTA PH 1
BLOCK A, LOT 8

R567987
AKERS, JAMES
DARELL & REBECA
VALLEY VISTA PH 1
BLOCK A, LOT 9

R567988
WILSON, MACKENZIE &
KELEN NICHAR
VALLEY VISTA PH 1
BLOCK A, LOT 10

R567989
PANDEY, KIRAN P
& SUJAN
VALLEY VISTA PH 1
BLOCK A, LOT 11

R583210
PACESETTER HOMES LLC
VALLEY VISTA PH 2
BLOCK A, LOT 12

R583211
MAGSINO, RYAN &
STEPHANIE BETH
DERKOWSKI
VALLEY VISTA PH 2
BLOCK A, LOT 13

R567979 PACE SETTER HOMES LLC VALLEY VISTA PH 1 BLOCK A, LOT 1 0.283 AC

R599322
CONTINENTAL HOMES OF TEXAS LP DBA DR HORTON
BAR W RANCH WEST PH 1 SEC 1 BLOCK A

LOT 1 - HOA LANDSCAPE

LEGEND

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LOC/SF		LIMITS OF CONST./SILT FENCE
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40 20 0 40 80
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TCEQ CONTRIBUTING ZONE PLAN
EROSION & SEDIMENTATION CONTROL PLAN
SHEET 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-EC01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

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Phone 512.439.4700
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FRN-F-1386

JOB NUMBER: A4971

EC02

SHEET NO. 11 OF 70 SHEETS

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User: chollen
Last Modified: Sep 15, 25 - 17:51
Plot Date/Time: Oct 01, 25 - 15:58:50

DM01 - Time of Concentration Calculations - Existing Conditions Offsite & Onsite

Drainage Area	SHEET L(ft)	Slope	2-Year P	n	Tc (Min.)	SCF L(ft)	Paved?	Slope	Tc (Min.)	STORM SEWER L(ft)	Q (cfs)	Pipe Dia (in)	Velocity (fps)	Tc (Min.)	Total Tc (Min.)	Total Tc Lag (Min.)
EX A	100	4.00%	3.92	0.15	6.7	1125	No	2.58%	7.2	--	--	--	--	--	13.9	8.4
EX B	100	11.00%	3.92	0.15	4.5	735	No	3.40%	4.1	--	--	--	--	--	8.6	5.2
EX C	5 Min. Assumed														5.0	3.0
EX D	100	1.80%	3.92	0.15	9.2	455	NO	2.65%	2.9	215	25.9	30	5.28	0.68	12.1	7.3
EX OS-B	100	3.25%	3.92	0.15	7.3	420	NO	2.62%	2.7						10.0	6.0

REACH	JUNCTION UPSTREAM	JUNCTION DOWNSTREAM	LENGTH (FT)	ROUGHNESS n	ROUGHNESS DESCRIPTION	INVERT UPSTREAM (FT)	INVERT DOWNSTREAM (FT)	AV. SLOPE (FT/FT)	PIPE DIAMETER (IN)	AV. SIDE SLOPE (H:V) RIGHT	AV. SIDE SLOPE (H:V) LEFT
REACH 1	J.2.	SP B	150	0.03	GRASS	886.00	875.50	0.0700	NA	72.9	82.5

HECHMS **DM01**

Drainage Area Calculations

Gabriels Horn, Leander, Williamson County, Texas

NOAA ATLAS 14 HECHMS Rainfall Distribution Precipitation Data for Leander, Williamson County, Texas

Existing Conditions Soils

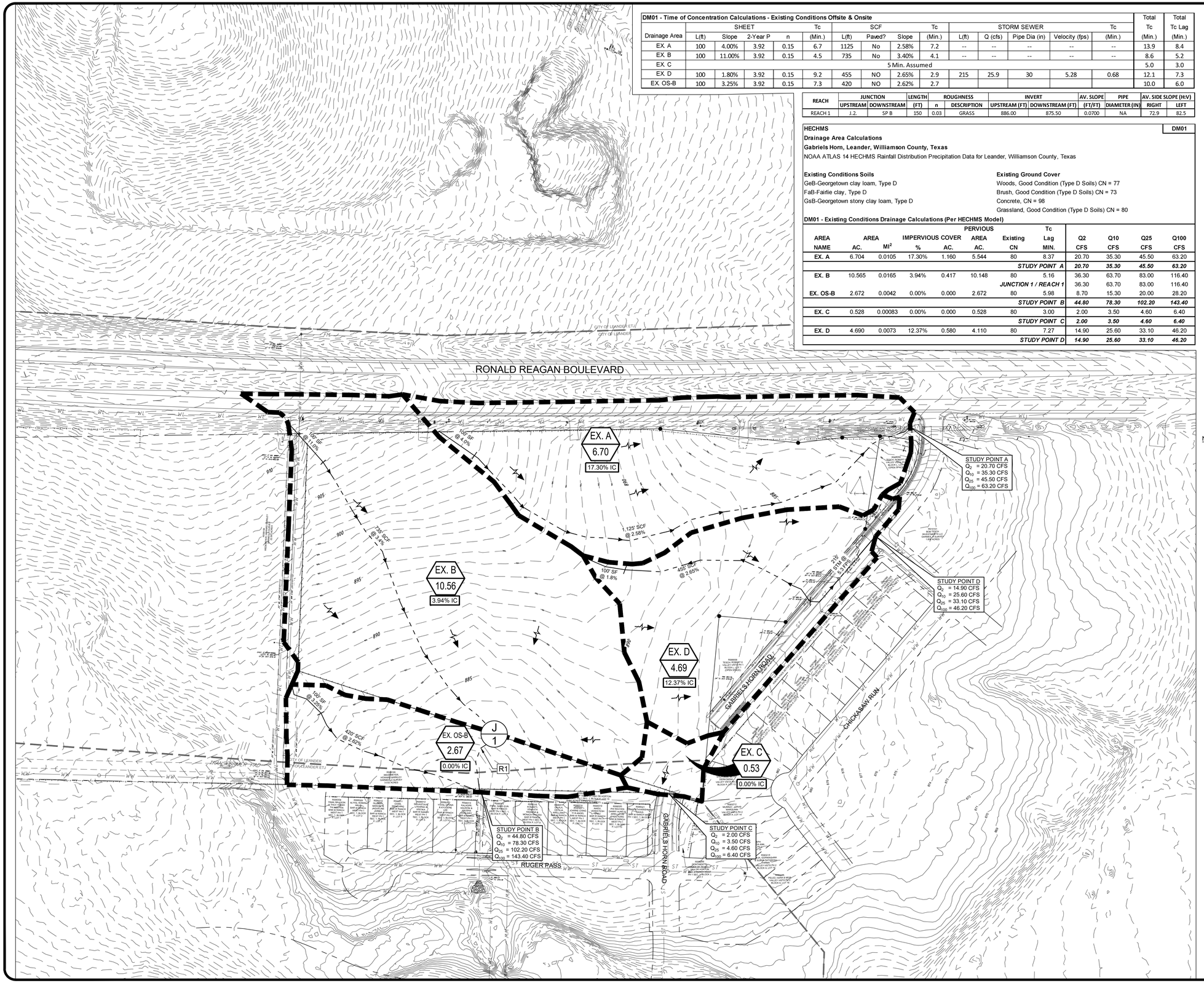
GeB-Georgetown clay loam, Type D
FaB-Fairlie clay, Type D
GsB-Georgetown stony clay loam, Type D

Existing Ground Cover

Woods, Good Condition (Type D Soils) CN = 77
Brush, Good Condition (Type D Soils) CN = 73
Concrete, CN = 98
Grassland, Good Condition (Type D Soils) CN = 80

DM01 - Existing Conditions Drainage Calculations (Per HECHMS Model)

AREA NAME	AREA AC.	AREA MI^2	IMPERVIOUS COVER %	IMPERVIOUS COVER AC.	PERVIOUS AREA AC.	Existing CN	Tc Lag MIN.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS
EX. A	6.704	0.0105	17.30%	1.160	5.544	80	8.37	20.70	35.30	45.50	63.20
							STUDY POINT A	***20.70***	***35.30***	***45.50***	***63.20***
EX. B	10.565	0.0165	3.94%	0.417	10.148	80	5.16	36.30	63.70	83.00	116.40
							JUNCTION 1 / REACH 1	36.30	63.70	83.00	116.40
EX. OS-B	2.672	0.0042	0.00%	0.000	2.672	80	5.98	8.70	15.30	20.00	28.20
							STUDY POINT B	***44.80***	***78.30***	***102.20***	***143.40***
EX. C	0.528	0.00083	0.00%	0.000	0.528	80	3.00	2.00	3.50	4.60	6.40
							STUDY POINT C	***2.00***	***3.50***	***4.60***	***6.40***
EX. D	4.690	0.0073	12.37%	0.580	4.110	80	7.27	14.90	25.60	33.10	46.20
							STUDY POINT D	***14.90***	***25.60***	***33.10***	***46.20***



100 50 0 100 200
SCALE IN FEET
1" = 100'

LEGEND

OS-A
7.082
2.62% IC — DRAINAGE AREA NUMBER AND ACREAGE

DRAINAGE AREA

PROPERTY LINE

TC PATH

XXX' LF SFY @ X.XX% — SHEET FLOW

XXX' LF SCF @ X.XX% — SHALLOW CONCENTRATED FLOW

FLOW DIRECTION ARROW

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE PER TCEQ MAPS.
2. THERE IS NO FLOODPLAIN PRESENT ON THE SITE. THE AREA LIES IN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS IDENTIFIED BY THE FEDERAL EMERGENCY AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO., 48491C0275E, EFFECTIVE SEPTEMBER 26, 2008.
3. EXISTING OFFSITE CONTOURS TAKEN FROM CITY OF LEANDER LIDAR.
4. EXISTING ONSITE CONTOURS TAKEN FROM LJA SURVEY FIELD TOPOGRAPHIC SURVEYS.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
EXISTING CONDITIONS DRAINAGE AREA MAP

LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: A441-0401-P-DM01.DWG

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1366

JOB NUMBER: A4971

DM01

SHEET NO. 12 OF 70 SHEETS

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User: rmillen
Last Modified: Sep 15, 25 - 09:43
Plot Date/Time: Oct 01, 25 - 15:28:54

Drainage Area	Impervious Cover			Percent of D.A.
	LOT	SF	AC	
A (POND A)	Lot 3	65,742.00	1.5092	33%
	Lot 4	73,675.52	1.6914	37%
	Other*	18,682.59	0.4289	10%
	Total	**158,100.11**	**3.6295**	**80%**
B (POND B)	Lot 5	269,998.90	6.1983	54%
	Other*	21,953.97	0.5040	4%
	Total	**291,952.87**	**6.7023**	**58%**

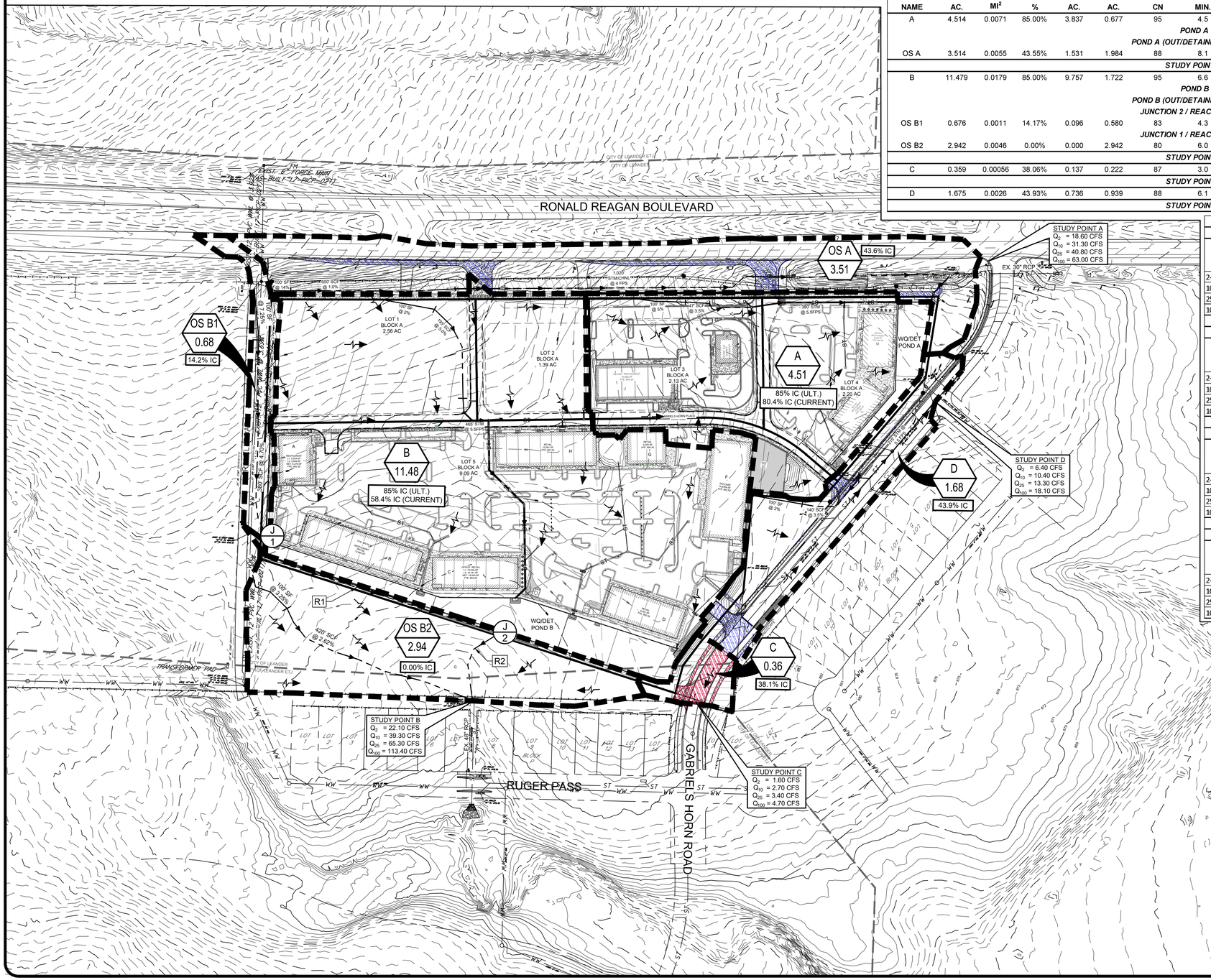
*Denotes IC from Shared & Public Improvements within Drainage Area Boundary

CURRENT / ACTUAL IMPERVIOUS COVER WITHIN EACH WQ POND DRAINAGE AREA SUMMARY TABLE

DM02 - Time of Concentration Calculations - Fully-Developed/Undetained Conditions Offsite & Fully-Developed/Detained Conditions Onsite

	SHEET				Tc	SCF			Tc	STORM SEWER				Tc	Total Tc	Total Tc Lag
Drainage Area	L(ft)	Slope	2-Year P	n	(Min.)	L(ft)	Paved?	Slope	(Min.)	L(ft)	Q (cfs)	Pipe Dia (in)	Velocity (fps)	(Min.)	(Min.)	(Min.)
A	100	5.00%	3.92	0.15	6.1	47	No	3.50%	0.3	380	22.1	Varies	5.5	1.15	7.5	4.5
B	100	2.00%	3.92	0.15	8.9	195	Yes	5.00%	0.7	465	27.0	Varies	5.5	1.41	11.0	6.6
C	5 Minutes Assumed														5.0	3.0
D	100	2.00%	3.92	0.15	8.9	140	Yes	3.50%	0.6	215	18.1	Varies	5.5	0.65	10.1	6.1
OS A	100	14.00%	3.92	0.15	4.1	500	No	1.00%	5.2	1020	34.5	Varies	4	4.25	13.5	8.1
OS B1	100	7.25%	3.92	0.15	5.3	380	NO	4.70%	1.8	--	--	--	--	--	7.1	4.3
OS B2	100	3.25%	3.92	0.15	7.3	420	NO	2.62%	2.7	--	--	--	--	--	10.0	6.0

REACH	JUNCTION		LENGTH	ROUGHNESS		INVERT		AV. SLOPE	PIPE	AV. SIDE SLOPE (H:V)	
	UPSTREAM	DOWNSTREAM	(FT)	n	DESCRIPTION	UPSTREAM (FT)	DOWNSTREAM (FT)	(FT/FT)	DIAMETER (IN)	RIGHT	LEFT
REACH 1	J.1.	J.2.	500	0.013	24" PIPE	890.00	886.00	0.0080	24.0	20.0	20.0
REACH 2	J.2.	SP B	150	0.03	GRASS	886.00	875.50	0.0700	NA	72.9	82.5



HECHMS DM02

Drainage Area Calculations

Gabriels Horn, Leander, Williamson County, Texas

NOAA ATLAS 14 HECHMS Rainfall Distribution Precipitation Data for Leander, Williamson County, Texas

Existing Conditions Soils
FaB-Fairlie clay, Type D
FaA-Fairlie Clay, Type D
GsB-Georgetown stony clay loam, type D

Existing Ground Cover
Woods, Good Condition (Type D Soils) CN = 77
Brush, Good Condition (Type D Soils) CN = 73
Concrete, CN = 98
Grassland, Good Condition (Type D Soils) CN = 80

Developed Ground Cover
Concrete, CN = 98
Grass, Good (Type D) CN = 80

DM02 - Developed Conditions Drainage Calculations (Per HECHMS Model)

AREA NAME	AREA AC.	AREA MI^2	ACTUAL IMPERVIOUS COVER %	PERVIOUS AREA AC.	COMPOSITE AC.	CN	Tc Lag MIN.	Q2 CFS	Q10 CFS	Q25 CFS	Q100 CFS
A	4.514	0.0071	85.00%	3.837	0.677	95	4.5	22.10	33.70	41.80	55.70
							POND A (IN)	*22.10*	*33.70*	*41.80*	*55.70*
							POND A (OUT/DETAINED)	*7.30*	*12.70*	*17.60*	*30.10*
OS A	3.514	0.0055	43.55%	1.531	1.984	88	8.1	12.20	19.90	25.30	34.50
							STUDY POINT A	***18.60***	***31.30***	***40.80***	***63.00***
B	11.479	0.0179	85.00%	9.757	1.722	95	6.6	49.90	76.30	94.50	125.90
							POND B (IN)	*49.90*	*76.30*	*94.50*	*125.90*
							POND B (OUT/DETAINED)	*15.70*	*30.80*	*51.20*	*88.20*
							JUNCTION 2 / REACH 2	*15.70*	*30.80*	*51.20*	*88.20*
OS B1	0.676	0.0011	14.17%	0.096	0.580	83	4.3	2.60	4.40	5.70	7.90
							JUNCTION 1 / REACH 1	*2.60*	*4.40*	*5.70*	*7.90*
OS B2	2.942	0.0046	0.00%	0.000	2.942	80	6.0	*9.50*	*16.80*	*21.90*	*30.80*
							STUDY POINT B	***22.10***	***39.30***	***65.30***	***113.40***
C	0.359	0.00056	38.06%	0.137	0.222	87	3.0	1.60	2.70	3.40	4.70
							STUDY POINT C	***1.60***	***2.70***	***3.40***	***4.70***
D	1.675	0.0026	43.93%	0.736	0.939	88	6.1	6.40	10.40	13.30	18.10
							STUDY POINT D	***6.40***	***10.40***	***13.30***	***18.10***

Overall Drainage Study Point Summary
Study Point A

Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	20.70	18.60
10-Year	35.30	31.30
25-Year	45.50	40.80
100-Year	63.20	63.00

Overall Drainage Study Point Summary
Study Point B

Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	44.80	22.10
10-Year	78.30	39.30
25-Year	102.20	65.30
100-Year	143.40	113.40

Overall Drainage Study Point Summary
Study Point C

Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	2.00	1.60
10-Year	3.50	2.70
25-Year	4.60	3.40
100-Year	6.40	4.70

Overall Drainage Study Point Summary
Study Point D

Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	14.90	6.40
10-Year	25.60	10.40
25-Year	33.10	13.30
100-Year	46.20	18.10

100 50 0 100 200
SCALE IN FEET
1" = 100'

LEGEND

- OS-A / 7.082 / 2.60% IC — DRAINAGE AREA NUMBER AND ACREAGE
- DRAINAGE AREA
- PROPERTY LINE
- TC PATH
- XXX' LF SFY @ X.XX% — SHEET FLOW
- XXX' LF SCF @ X.XX% — SHALLOW CONCENTRATED FLOW
- FLOW DIRECTION ARROW
- COMPENSATORY IMPERVIOUS COVER MITIGATED BY DET / WQ POND A 0.4317-AC NEW IC -0.0895-AC REMOVED IC = 0.3422-AC REQ'D FOR COMPENSATORY TREATMENT
- COMPENSATORY IMPERVIOUS COVER MITIGATED BY DET / WQ POND B 0.1365-AC NEW IC -0.000-AC REMOVED IC = 0.1365-AC REQ'D FOR COMPENSATORY TREATMENT)

NOTES
1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE PER TCEQ MAPS.
2. THERE IS NO FLOODPLAIN PRESENT ON THE SITE. THE AREA LIES IN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS IDENTIFIED BY THE FEDERAL EMERGENCY AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO., 48491C0275E, EFFECTIVE SEPTEMBER 26, 2008.
3. EXISTING OFFSITE CONTOURS TAKEN FROM CITY OF LEANDER LIDAR.
4. EXISTING ONSITE CONTOURS TAKEN FROM LJA SURVEY FIELD TOPOGRAPHIC SURVEYS.

Ex. 48" RCP Capacity (Bar W Ranch)	
Diameter (in)	48
Slope (ft/ft)	0.012
Manning's n Value	0.013
Length (ft)	206.00
Full Flow Capacity (cfs)	157.34
Existing Flow to Culvert (SP B) (cfs)	143.40
Developed Flow to Culvert (SP B) (cfs)	113.40

Ex. 30" RCP Capacity (Gabriels Horn Rd Culvert)	
Diameter (in)	30
Slope (ft/ft)	0.026
Manning's n Value	0.013
Length (ft)	155.00
Full Flow Capacity (cfs)	65.88
Existing Flow to Culvert (SP A) (cfs)	63.20
Developed Flow to Culvert (SP A) (cfs)	63.00

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
DEVELOPED CONDITIONS DRAINAGE AREA MAP
LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: ...\M411-0401\E-DM02...

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DM02

SHEET NO. 13 OF 70 SHEETS

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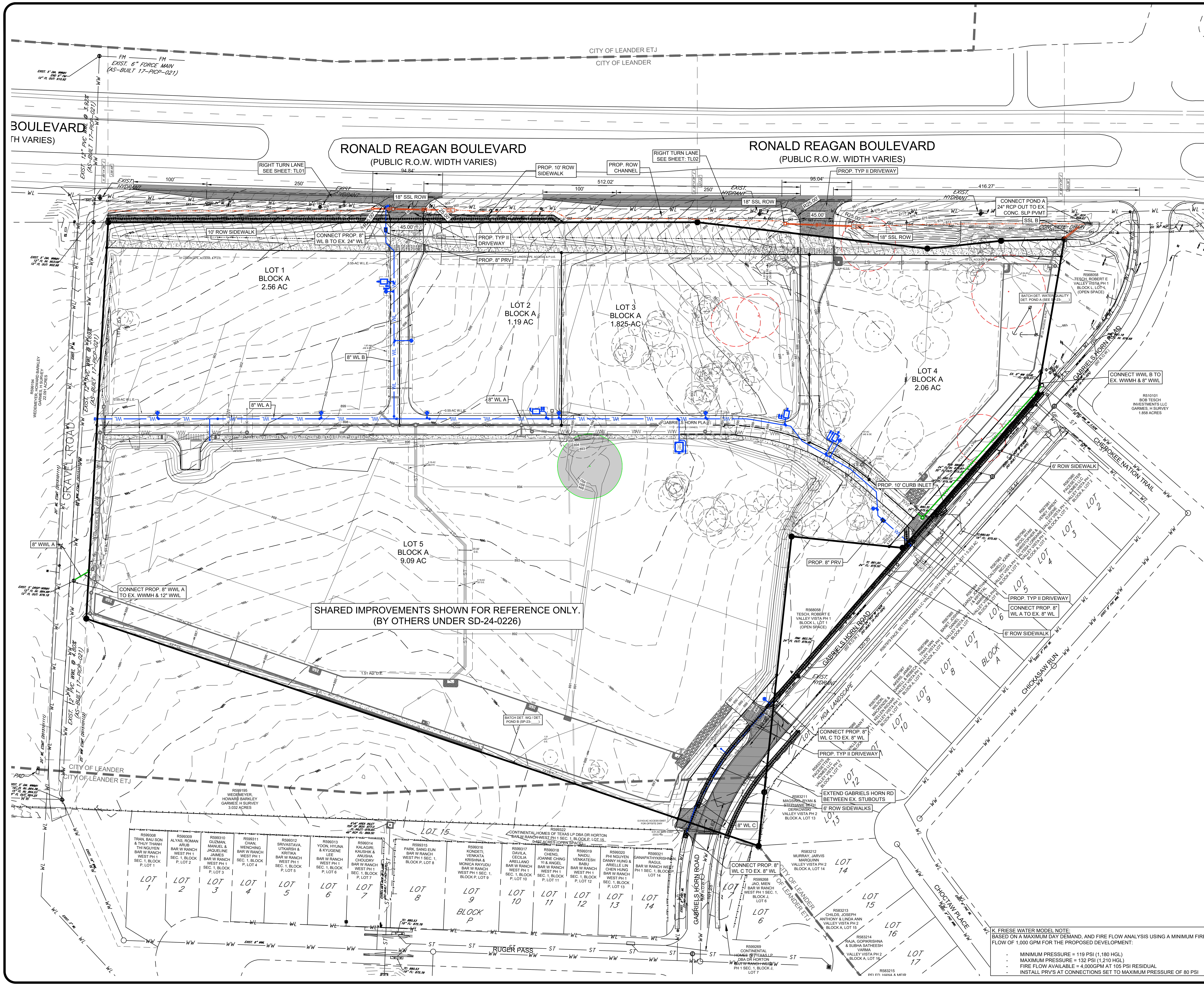
Plot Date/Time: Oct. 01, 25 - 10:30:18



LEGEND

- 667 — EXISTING CONTOUR MINOR
- 670 — EXISTING CONTOUR MAJOR
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WQZ — WATER QUALITY / BUFFER ZONE
- ST — STORM SEWER LINE
- WW — WASTEWATER LINE
- WASTEWATER SERVICE
- WL — WATER LINE
- WATER SERVICE
- R.O.W. DEDICATION SIDEWALKS (EXISTING)
- R.O.W. DEDICATION SIDEWALKS PROPOSED BY PICP-23-0079 (THIS SET)
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- IRON PIPE FOUND (AS NOTED)
- COTTON-GIN SPINDLE FOUND
- MAG NAIL FOUND
- "X" SCRIBED IN CONCRETE
- IRON ROD SET
- TREE (HERITAGE) TO REMAIN (WILL BE REMOVED DURING SDP)
- TREE TO REMAIN (WILL BE REMOVED DURING SDP)
- TREE TO REMAIN (HERITAGE)
- TREE TO REMAIN

SCALE IN FEET 1" = 60'

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

ACCESS NOTES:
1. MINIMUM DRIVEWAY SPACING IS 75' FOR ALL PROPOSED DRIVEWAYS (COA TRANSPORTATION MANUAL SEC. 5.3.2 TABLE 5-2 MINIMUM FOR COMMERCIAL COLLECTORS).
2. PROPOSED DRIVEWAYS REQUIRE 200' SIGHT DISTANCE (COA TRANSPORTATION MANUAL SEC. 1.3.1 TABLE 5-2 MINIMUM FOR 2-3 LANE STREETS).

WATER QUALITY NOTE:
PROJECT IS LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE AND REQUIRES TCEQ APPROVAL OF WATER QUALITY IMPROVEMENTS

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20, 2019.

LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL, L.P. TO REAGAN GABRIELS REAL ESTATE, L.L.C. DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C.)

OWNERSHIP INFORMATION:
REAGAN GABRIELS REAL ESTATE, LLC
5522 JENOLAN RIDGE LANE
SUGARLAND, TEXAS 77479
CONTACT PERSON: SAMIR MAREDIA
PHONE: (832) 713-4985

R.O.W. DEDICATION SUMMARY:

STREET NAME	R.O.W. AREA
GABRIELS HORN ROAD	0.46 AC.
TOTAL PROP. ROW	0.46 AC.

CITY OF LEANDER APPROVAL

K. FRIESE WATER MODEL NOTE:
BASED ON A MAXIMUM DAY DEMAND, AND FIRE FLOW ANALYSIS USING A MINIMUM FIRE FLOW OF 1,000 GPM FOR THE PROPOSED DEVELOPMENT:

- MINIMUM PRESSURE = 119 PSI (1,180 HGL)
- MAXIMUM PRESSURE = 132 PSI (1,210 HGL)
- FIRE FLOW AVAILABLE = 4,000GPM AT 105 PSI RESIDUAL
- INSTALL PRV'S AT CONNECTIONS SET TO MAXIMUM PRESSURE OF 80 PSI

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
PICP OVERALL PROJECT LAYOUT

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

REVISIONS

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: PICP-OP01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

OP01

SHEET NO. 14 OF 70 SHEETS

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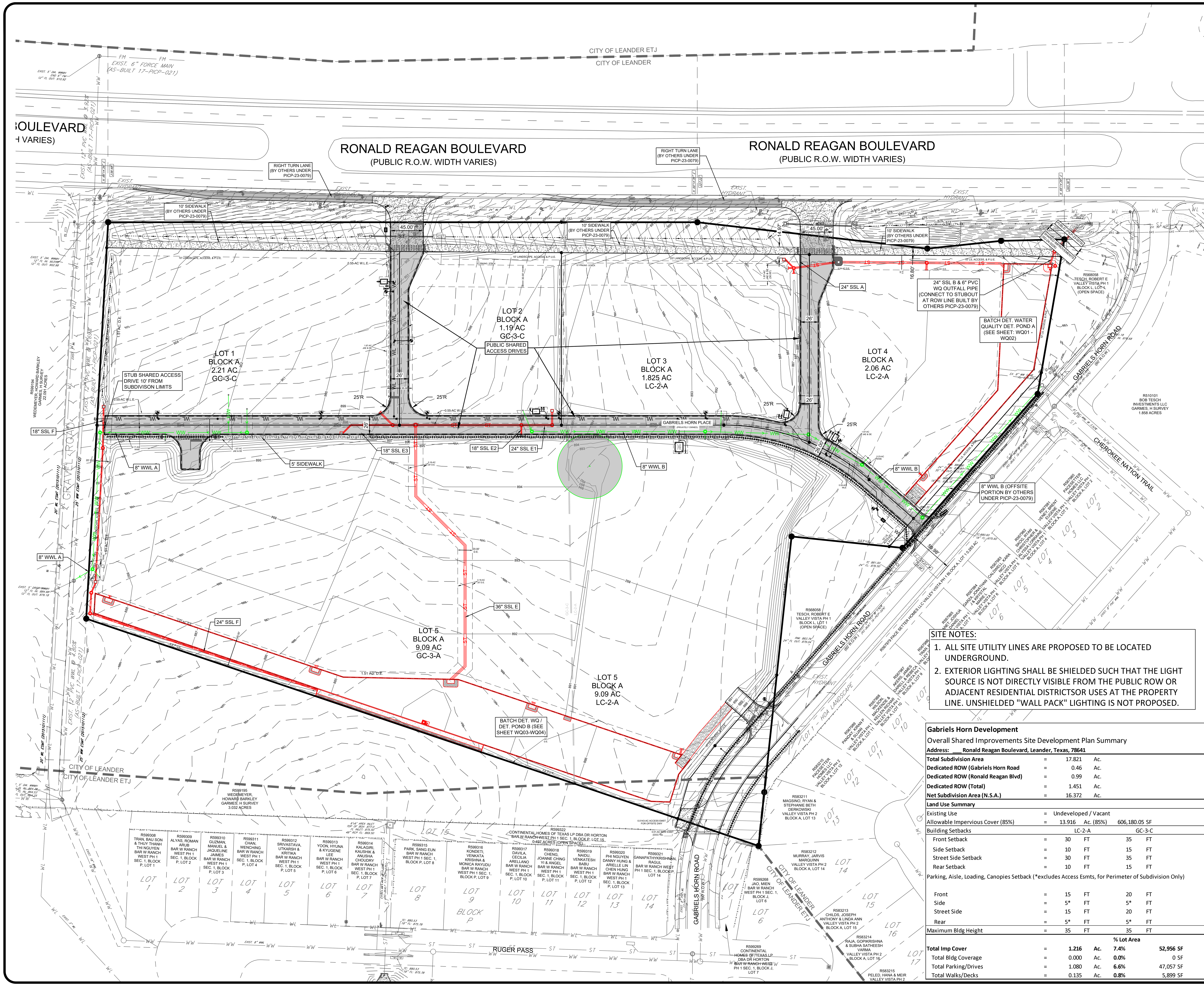
User: challen
Last Modified: Sep. 15, 25 – 09:44
Plot Date/Time: Oct. 01, 25 – 15:31:47



SITE NOTES:

1. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
2. EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC ROW OR ADJACENT RESIDENTIAL DISTRICTSOR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.

Gabriels Horn Development

Overall Shared Improvements Site Development Plan Summary

Address: ___ Ronald Reagan Boulevard, Leander, Texas, 78641

Total Subdivision Area	=	17.821	Ac.			
Dedicated ROW (Gabriels Horn Road	=	0.46	Ac.			
Dedicated ROW (Ronald Reagan Blvd)	=	0.99	Ac.			
Dedicated ROW (Total)	=	1.451	Ac.			
Net Subdivision Area (N.S.A.)	=	16.372	Ac.			
Land Use Summary						
Existing Use	=	Undeveloped / Vacant				
Allowable Impervious Cover (85%)	=	13.916	Ac. (85%)	606,180.05 SF		
Building Setbacks		LC-2-A		GC-3-C		
Front Setback	=	30	FT	35	FT	
Side Setback	=	10	FT	15	FT	
Street Side Setback	=	30	FT	35	FT	
Rear Setback	=	10	FT	15	FT	
Parking, Aisle, Loading, Canopies Setback (*excludes Access Esmts, for Perimeter of Subdivision Only)						
Front	=	15	FT	20	FT	
Side	=	5*	FT	5*	FT	
Street Side	=	15	FT	20	FT	
Rear	=	5*	FT	5*	FT	
Maximum Bldg Height	=	35	FT	35	FT	
				% Lot Area		
Total Imp Cover	=	**1.216**	**Ac.**	**7.4%**	**52,956 SF**	
Total Bldg Coverage	=	0.000	Ac.	**0.0%**	0 SF	
Total Parking/Drives	=	1.080	Ac.	**6.6%**	47,057 SF	
Total Walks/Decks	=	0.135	Ac.	**0.8%**	5,899 SF	

SCALE IN FEET 1" = 60'

LEGEND

- FIRE LANE
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WATER QUALITY / BUFFER ZONE
- STORM SEWER LINE
- WASTEWATER LINE
- WASTEWATER SERVICE
- WATER LINE
- WATER SERVICE
- R.O.W. DEDICATION (EXISTING / NEW)
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- IRON PIPE FOUND (AS NOTED)
- COTTON-GIN SPINDLE FOUND
- MAG NAIL FOUND
- "X" SCRIBED IN CONCRETE
- IRON ROD SET
- TREE TO REMAIN (HERITAGE)
- TREE TO REMAIN

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
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2. PROPOSED DRIVEWAYS REQUIRE 200' SIGHT DISTANCE (COA TRANSPORTATION MANUAL SEC. 1.3.1 TABLE 5-2 MINIMUM FOR 2-3 LANE STREETS).

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FLOODPLAIN NOTE:
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LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL, L.P. TO REAGAN GABRIELS REAL ESTATE, L.L.C. DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C.)

OWNERSHIP INFORMATION: (LOTS 1 - 2)
REAGAN GABRIELS REAL ESTATE, LLC
5522 JENOLAN RIDGE LANE
SUGARLAND, TEXAS 77479
CONTACT PERSON: SAMIR MAREDIA
PHONE: (832) 713-4985

OWNERSHIP INFORMATION: (LOTS 3 - 5)
BM 22, LLC
2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641
CONTACT PERSON: SWAMY DEVUNI
PHONE: (703) 220-7265

R.O.W. DEDICATION SUMMARY:

STREET NAME	R.O.W. AREA
GABRIELS HORN ROAD	0.46 AC.
RONALD REAGAN BLVD	0.99 AC.
TOTAL PROP. ROW	1.45 AC.

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
OSP OVERALL PROJECT LAYOUT
LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: OSP-OP01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

OP02

SHEET NO. 15 OF 70 SHEETS

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Last Modified: Oct. 01, 25 - 09:07
Plot Date/Time: Oct. 01, 25 - 15:33:24

50 25 0 50 100

SCALE IN FEET
1" = 50'

LEGEND

PROPOSED	EXISTING	
800	800	CONTOURS
		PROPOSED RETAINING WALL
		CORR. EX. 100-YR A14 FP & BUFFER ZONE
		CORR. ULT-DEV 100-YR A14 FP
		FEMA FLOODPLAIN
×100.00		TOP OF PAVEMENT
×100.00 TC		TOP OF CURB/CONCRETE
×100.00 TG		TOP OF GRATE
×100.00 LP		LOW POINT
×100.00 HP		HIGH POINT
×100.00 FS		FINISHED SLAB
×100.00 TW		TOP OF WALL
×100.00 BW		BOTTOM OF WALL
×100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
	CH	1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		COTTON SPINDLE WITH CHAPARRAL WASHER SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
3. ALL SIDEWALKS SHALL BE 6' WIDE. ALL TRAILS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
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7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT

TCEQ CONTRIBUTING ZONE PLAN

PICP GRADING PLAN SHEET

LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
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DRAWING NAME: PICP-GP01

09/10/2025
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JOB NUMBER:

GP01.0

SHEET NO. 16 OF 70 SHEETS

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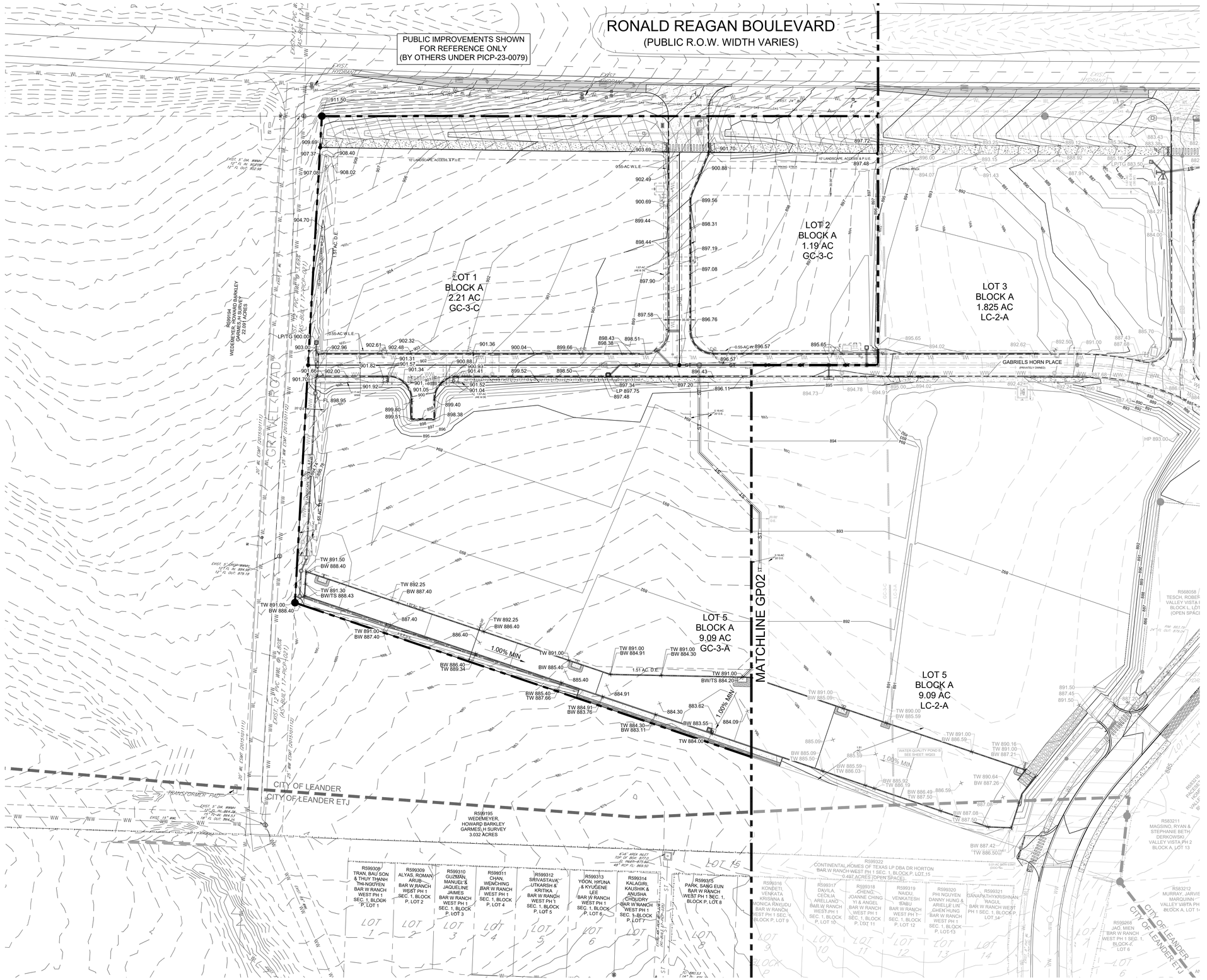

50 25 0 50 100

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1" = 50'

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100.00 TW		TOP OF WALL
100.00 BW		BOTTOM OF WALL
100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
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LEANDER PROJECT No. SD-24-0226

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
OSP GRADING PLAN SHEET 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 06/10/2025
DESIGNED BY: CRH
DRAWN BY: ---
CHECKED BY: CRH
DRAWING NAME: osp-gp01

06/10/2025

STATE OF TEXAS
CHARLES R. HAGER
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FRN-F-1386

JOB NUMBER:

GP01.1

SHEET NO. 17 OF 70 SHEETS

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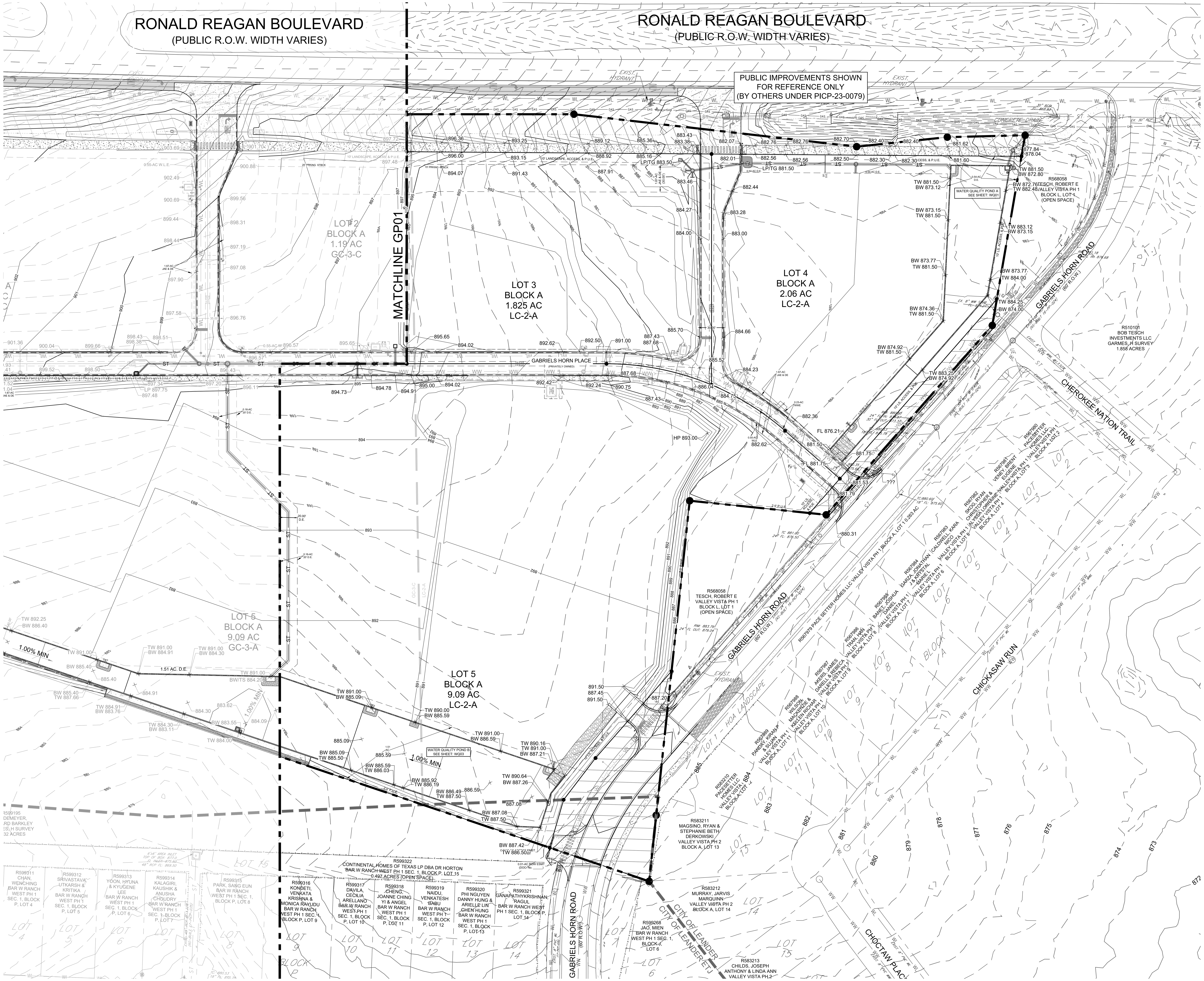

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN

OSP GRADING PLAN SHEET 2

LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 06/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: OSP-GP01

06/10/2025
STATE OF TEXAS CHARLES R. HAGER V 127034 LICENSED PROFESSIONAL ENGINEER

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SHEET NO. 18 OF 70 SHEETS

LEANDER PROJECT No. SD-24-0226

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Last Modified: Sep. 15, 25 – 09:44
Plot Date/Time: Oct. 01, 25 – 15:37:05

NOTE:
TOP OF WALL ELEVATION FOR THE BATCH-DETENTION WATER QUALITY & DETENTION BASIN A IS 881.50' TYPICAL UNLESS OTHERWISE NOTED.

POND SHALL BE INSTALLED WITH 6' HT. FENCE / PEDESTRIAN FALL RAIL ALONG TOP OF POND WALLS PER COA STD. DTL. 707S-1. THE TOTAL COMBINED HEIGHT OF THE WALL AND FENCE MUST BE A MINIMUM OF SIX (6) FEET ABOVE THE EXTERIOR FINISHED GRADE.

BATCH DETENTION WATER QUALITY W/ STACKED DETENTION POND CALCULATIONS FOR TCEQ WPAP PERMITTING IN WILLIAMSON COUNTY

POND A (Int Ronald Reagan / Gabriels Horn)

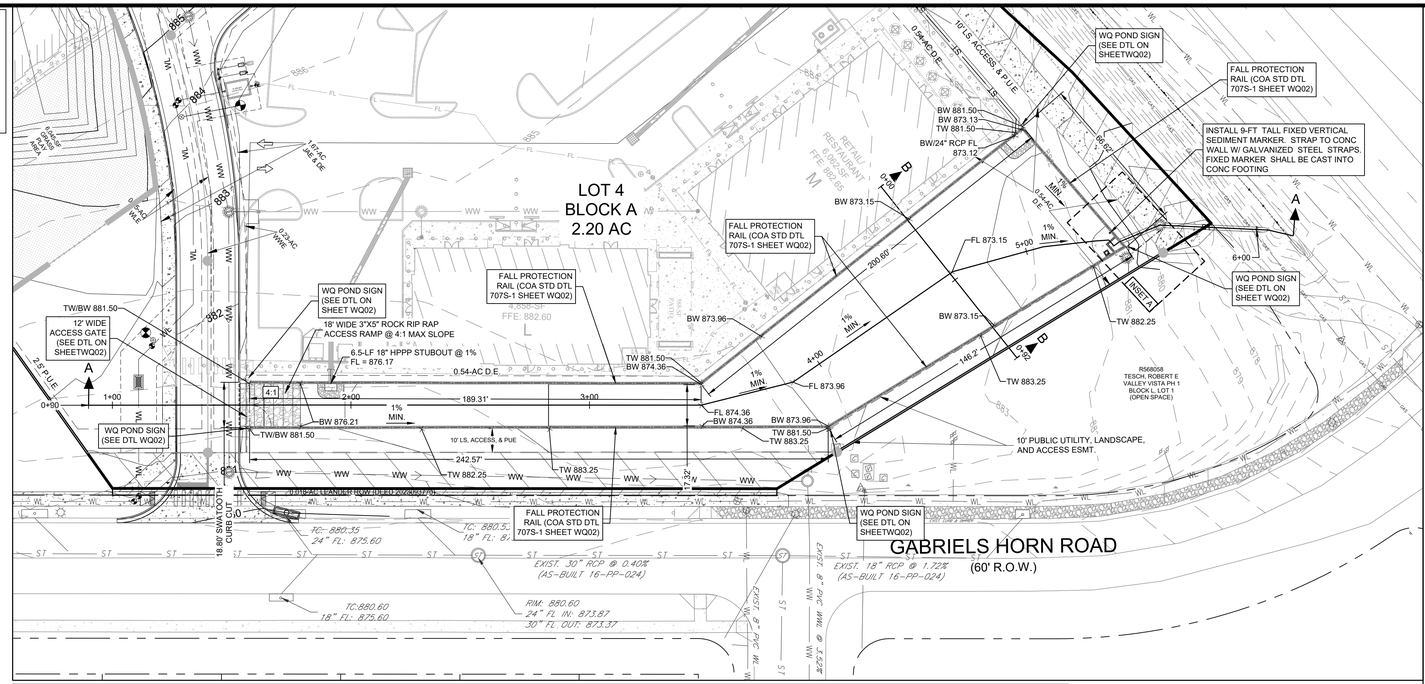
DRAINAGE AREA DATA:

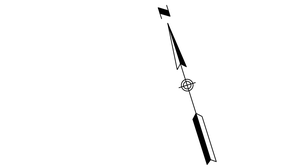
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION (91% REMOVAL EFFICIENCY)		
DRAINAGE AREA TO CONTROL (A_C)	4.514	ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	85.00	PERCENT
DRAINAGE AREA IMPERVIOUS COVER (A_I)	3.84	ACRES
AV. ANNUAL PRECIPITATION (P)	32.00	IN
L_M TOTAL DRAINING TO POND	3340.0	LBS
L_M TOTAL COMPENSITORY	298	LBS (Compensatory IC for access imp. & sidewalks)
L_M TOTAL (POND DESIGN)	3638	LBS
PERVIOUS AREA REMAINING IN DA (A_P)	0.68	ACRES
TSS LOAD REMOVED BY PROP. WQ POND (L_R)	3877	LBS
FRACTION OF ANNUAL RUNOFF / OUTFALL AREA (F)	0.94	
RAINFALL DEPTH	2.40	IN
POST-DEV. RUNOFF COEFFICIENT	0.69	
ON-SITE WATER QUALITY VOL. REQUIRED (WQV)	27,299	CF
TOTAL CAPTURE VOLUME (WQV x 1.20)	32,759	CF

WATER QUALITY CONTROL CALCULATIONS:	REQUIRED	PROVIDED
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION		
WATER QUALITY VOLUME (WQV = CD*DA*3630)	32,759 CF	32,760 CF
MAX PONDING DEPTH ABOVE WQ OUTLET (H)		4.11 FT
WATER QUALITY ELEVATION		876.61 FT MSL

BATCH DETENTION BASIN:

ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]
872.5	0	0	0
873	2,050	513	513
874	7,967	5,009	5,521
875	10,192	9,080	14,601
876	11,726	10,959	25,560
877	12,053	11,890	37,449
878	12,125	12,089	49,538
879	12,196	12,160	61,698
880	12,267	12,231	73,930
881	12,339	12,303	86,232
881.5	12,374	6,178	92,410





LEGEND

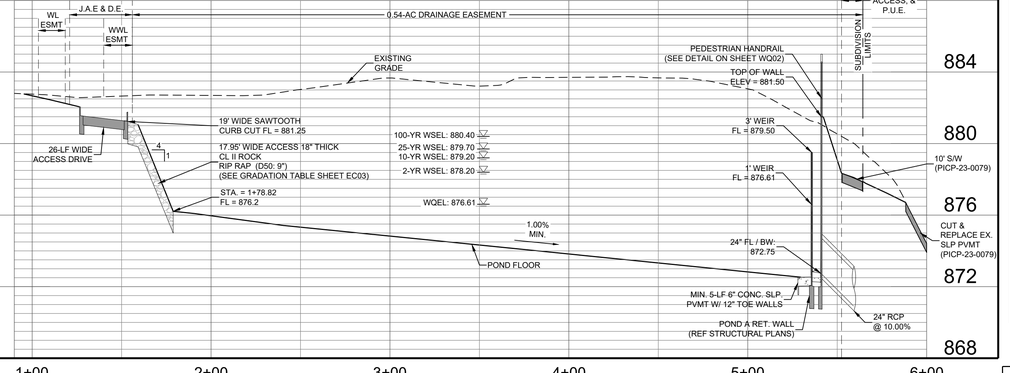
- BOUNDARY LINE/ R.O.W.
- 990 — PROPOSED CONTOURS
- 990 — EXISTING CONTOURS
- CONCRETE
- ROCK RIPRAP

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

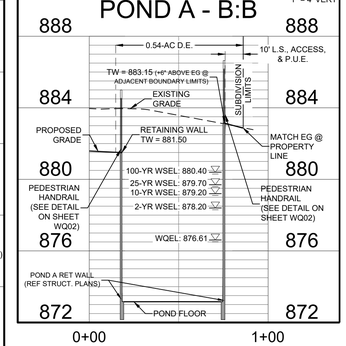
POND A - A:A

SCALE: 1" = 40' HOR, 1" = 4' VERT



POND A - B:B

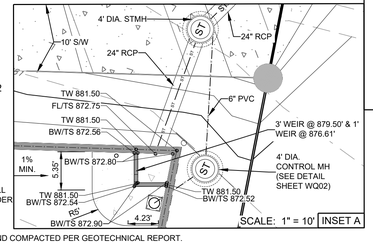
SCALE: 1" = 40' HOR, 1" = 4' VERT



Overall Drainage Study Point Summary		
Study Point A		
Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	20.70	18.60
10-Year	35.30	31.30
25-Year	45.50	40.80
100-Year	63.20	63.00

CONTROLS NARRATIVE:

BATCH DETENTION POND IS EQUIPPED WITH A RAIN SENSOR MOUNTED AT THE CONTROL PANEL. VALVE IS TO REMAIN NORMALLY CLOSED. WHEN CONTACT IS MADE BY LEVEL SWITCH, 12 HOUR DELAY TIMER SHALL BEGIN AS SOON AS NO MOISTURE IS DETECTED BY THE RAIN SENSOR. IF THE RAIN SENSOR DETECTS PRECIPITATION, DELAY TIMER WILL RESET TO 12 HOURS. ONCE VALVE OPENS, IT WILL REMAIN OPEN UNTIL THE POND IS DRAINED OR RAIN SENSOR RESETS.



Water Quality Drawdown Calculations

Time (HRS)	Drawdown Percentage (%)	Remaining WQ Volume (CF)	WQ Stage Elevation (FT)
0:00	0	32,760	876.61
12:00	0	32,760	876.61
24:00	25	24,570	875.91
36:00	50	16,380	875.23
48:00	75	8,190	874.29
60:00	100	0	872.50

Note: Batch Det. Requires 12-hr Lag and to be drained w/in the next 48-hrs.

DRAWDOWN CALCULATION FOR BATCH DET WQ BASIN

WQ VOLUME = 32760 CF

MINIMUM DRAWDOWN TIME = 36 HR = 129600 SECONDS (48 HRS w/ 12-HR DELAY)

FLOW = 32760 CF / 129600 SEC = 0.253 CFS

HEAD= 875.16 - 872.75 = 2.91 (POND AVG HEAD TO ORIFICE CL)

A = 0.253 CFS/(.60 * (64.4 *2.91) ^.5)= 0.030762 SF

R =(A/(3.14))^.5 = 0.10 FT

D (in.) = 2R * 12 = 2.38 inch orifice

Q =0.0308 * .60 * (64.4 * 2.91)^.5 = 0.253 CFS

DRAWDOWN TIME = 32760 CF / 0.253 CFS = 129600 SEC = 36 HRS

THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS

DETENTION POND SUMMARY - A

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	22.10	12.05	7.30	12.18	878.40
10YR	33.70	12.05	12.70	12.17	879.20
25YR	41.80	12.05	17.60	12.15	879.70
100YR	55.70	12.05	30.10	12.13	880.40

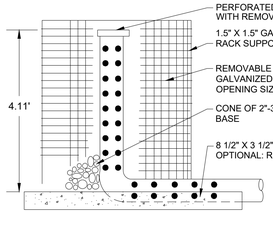
Detention Pond - Stage Storage Table

Elevation (FT)	Area (AC)	A1+A2+SQR (A1*A2) (AC)	Incremental Volume (AC-FT)	Cumulative Volume (AC-FT)
872.5	0	0	0	0
873	0.047	0.047	0.008	0.008
874	0.183	0.323	0.108	0.115
875	0.234	0.624	0.208	0.323
876	0.269	0.754	0.251	0.575
877	0.277	0.819	0.273	0.848
878	0.278	0.833	0.278	1.125
879	0.280	0.837	0.279	1.404
880	0.282	0.842	0.281	1.685
881	0.283	0.847	0.282	1.968
881.5	0.284	0.851	0.142	2.109

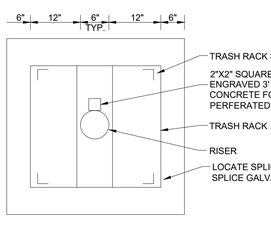
Outlet Structure - Stage Discharge Table

Stage / Elevation	1' Weir @ 876.61 Q (cfs)	3' Weir @ 879.50 Q (cfs)	TOTAL Q (cfs)
872.5	0.00	0.00	0.00
873	0.00	0.00	0.00
874	0.00	0.00	0.00
875	0.00	0.00	0.00
876	0.00	0.00	0.00
877	0.67	0.00	0.67
878	3.55	0.00	3.55
879	5.79	0.00	5.79
880	19.62	3.18	22.80
881	27.59	16.53	44.12
881.5	32.44	25.46	57.90

HEAD REQUIRED TO PASS 100-YR EVENT FROM POND A OUTFALL TO PIPE OUT		HEAD REQUIRED TO PASS 25-YR EVENT FROM POND A OUTFALL TO PIPE OUT	
100-yr Storm Event Ponding Height (above centroid)=(Q/(Cd*A))2 /(2*32.2)		25-yr Storm Event Ponding Height (above centroid)=(Q/(Cd*A))2 /(2*32.2)	
0.6 Cd		0.6 Cd	
24	Pipe Diameter or Orifice Width (in)	24	Pipe Diameter or Orifice Width (in)
3.14	Area of Pipe (sf)	3.14	Area of Pipe (sf)
1.00	Orifice Area	1.00	Orifice Area
1.00	Number of Pipes / Orifices	1.00	Number of Pipes / Orifices
3.14	Total Area (sf)	3.14	Total Area (sf)
30.1	Discharge (100 Yr) (cfs)	17.6	Discharge (25 Yr) (cfs)
872.75	Outfall Pipe FL (ft)	872.75	Outfall Pipe FL (ft)
3.96	Height Above Centroid (ft)	1.35	Height Above Centroid (ft)
877.71	**100-Yr WSEL to Pass 100-yr Discharge (ft) through Pipe Out**	**875.10**	**25-Yr WSEL to Pass 25-yr Discharge (ft) through Pipe Out**
880.40	100-Yr WSEL to Pass 100-yr Discharge (ft) over Outfall Structure Weir	879.70	25-Yr WSEL to Pass 25-yr Discharge (ft) over Outfall Structure Weir
879.50	Pond Weir Elev. (ft)	879.50	Pond Weir Elev. (ft)
Yes	Is 100-yr WSEL from Pipe Out > 100-yr WSEL over Weir?	**Yes**	Is 25-yr WSEL from Pipe Out > 25-yr WSEL over Weir?
Yes	Is Pond Weir > 100-yr WSEL from Pipe Out?	**Yes**	Is Pond Weir > 25-yr WSEL from Pipe Out?



SIDE VIEW OF RISER



TOP VIEW OF RISER (SQUARE DESIGN)

INTAKE RISER DETAIL
NOT TO SCALE

CONSTRUCTION NOTES:

1. FOR THE POND AND BERMS, EARTHWORK SHALL BE IN CONFORMANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND EARTHWORK SECTION OF THE GEOTECHNICAL REPORT.
2. EMBANKMENT SHALL BE INSTALLED IN LIFTS AND COMPACTED PER GEOTECHNICAL REPORT.
3. ALL WORK SHALL BE PERFORMED WITHIN LIMITS OF CONSTRUCTION.
4. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
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7. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
8. CONTRACTOR SHALL PROVIDE STRUCTURAL DESIGN FOR ALL RETAINING WALLS GREATER THAN 4 FEET HIGH AS A SUBMITTAL TO THE ENGINEER PRIOR TO CONSTRUCTION.
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7. THE DETENTION AND BATCH WATER QUALITY BASIN IS TO BE CONSTRUCTED FIRST IN THE SEQUENCE OF CONSTRUCTION (SOC) BEFORE SITE CLEARING AND GRADING TO ACT AS A SEDIMENTATION POND DURING CONSTRUCTION.
8. A DE-WATERING METHOD/PLAN FOR THE POND MUST BE APPROVED BY THE CITY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD/PLAN MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS IN THE PONDED WATER TO THE GREATEST EXTENT FEASIBLE.
9. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION PLAN & PROFILE SHEET 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

09/10/2025
DATE:
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: (see wq02)

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER
CRH

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ01

SHEET NO. 19 OF 70 SHEETS

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User: cgehringer
Last Modified: Oct. 06, 25 - 16:26
Plot Date/Time: Oct. 06, 25 - 16:28:06

Texas Commission on Environmental Quality

ULTIMATE BUILD OUT

TSS Removal Calculations 04-20-2009 **Project Name: Gabriels Horn Subdivision Pond A**

Date Prepared: 9/23/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point A

Total drainage basin/outfall area =	**4.51**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'A'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA A)
Post-development impervious area within drainage basin/outfall area =	**3.63**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.80**		
$L_{M\ THIS\ BASIN}$ =	**3159**	lbs.	

Compository Drainage Provided by Basin 'A' Water Quality Pond Summary

Total drainage basin/outfall area =	**5.189**	acres	<--AREA ADJACENT TO BASIN 'A' NOT CAPTURED BY POND A
Predevelopment impervious area within drainage basin/outfall area =	**2.014**	acres	(SEE SHEET DM02, DRAINAGE AREA OS-A & D)
Post-development impervious area within drainage basin/outfall area =	**2.356**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.45**		
$L_{M\ (Compository)}$ =	**298**	lbs.	
$L_{M\ (TOTAL)}$ =	**3457**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)
Removal efficiency = **91** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**4.514**	acres
A_I =	**3.630**	acres
A_P =	**0.88**	acres
L_R =	**3671**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **3457** lbs.

F = **0.94**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth = **2.40** inches
Post Development Runoff Coefficient = **0.63**
On-site Water Quality Volume = **24755** cubic feet

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

Off-site area draining to BMP = **0.00** acres
Off-site Impervious cover draining to BMP = **0.00** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

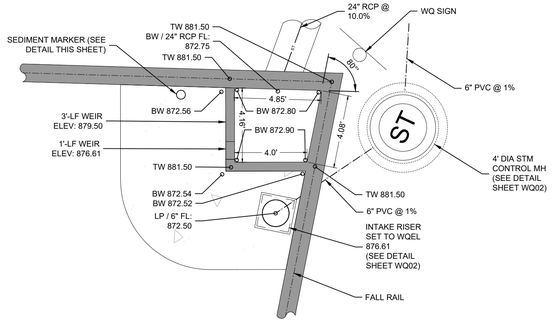
Storage for Sediment = **4951**

Total Capture Volume (required water quality volume(s) x 1.20) = 29706 cubic feet

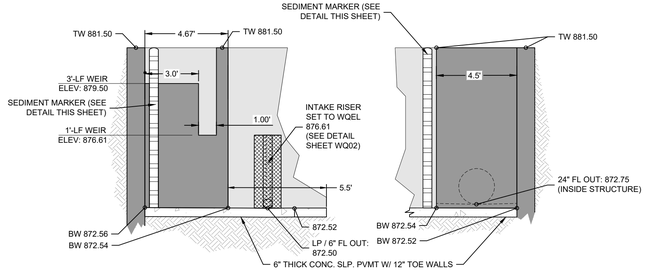
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

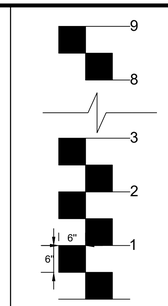
Required Water Quality Volume for extended detention basin = **29706** cubic feet
PROVIDED WATER QUALITY VOLUME= **32760** cubic feet



POND A OUTFALL STRUCTURE DETAIL
(TOP VIEW)
SCALE: 1" = 4'



POND A OUTFALL STRUCTURE DETAIL
(SECTION VIEW: FRONT AND SIDE)
SCALE: 1" = 4'



SEDIMENT MARKER DETAIL

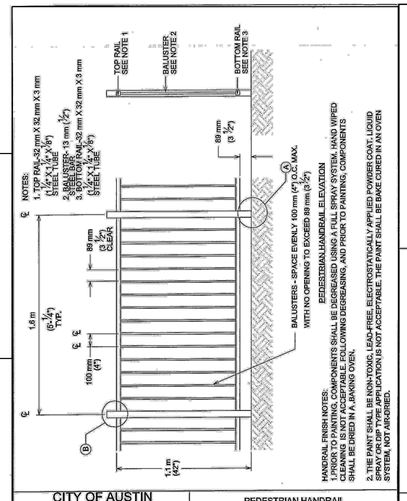
CONTRACTOR TO PAINT 6" STAINLESS STEEL POLE WITH BLACK PAINT AND LABEL ELEVATIONS IN INCREMENTS OF 1' TO ACT AS SEDIMENT DEPTH MARKER.

WATER QUALITY POND MAINTENANCE

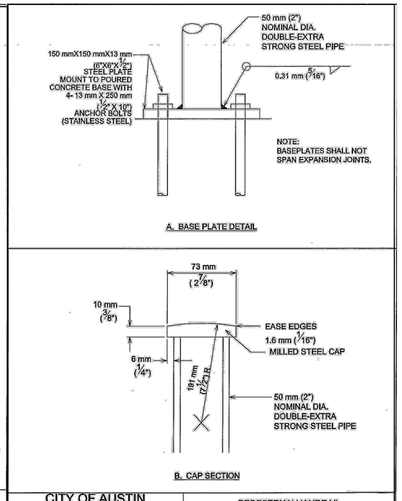
FACILITY OPERATOR:
BM 22, LLC
(703) 220-7265

EDWARDS AQUIFER ID:
RN112280268
TCEQ REGION: 11

WQ POND SIGN (RG-348A)
(N.T.S.)



CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 1 OF 4

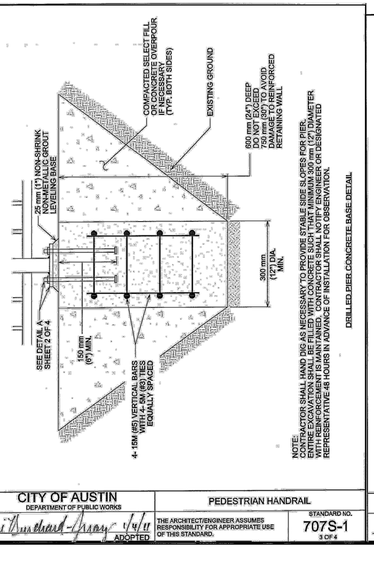


A. BASE PLATE DETAIL

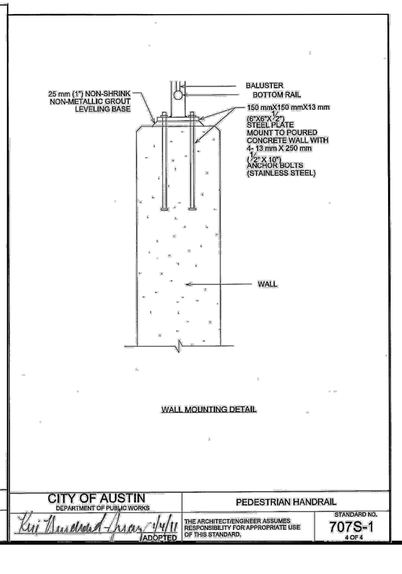
CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 2 OF 4

B. CAP SECTION

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 3 OF 4

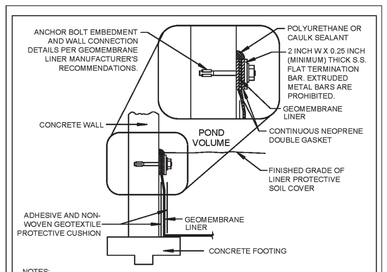


CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 3 OF 4



WALL MOUNTING DETAIL

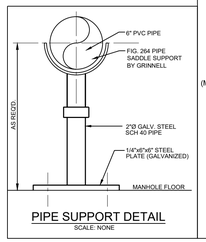
CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 4 OF 4



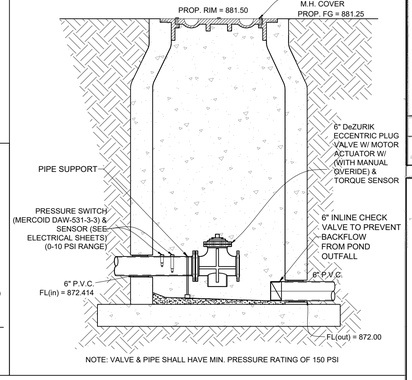
NOTES:

1. THIS SPECIFICATION IS FOR SUBMERGED GEOMEMBRANE LINER TERMINATIONS ON CONCRETE WALLS ONLY.
2. ALL TERMINATION BATTENS AND FASTENERS MUST BE STAINLESS STEEL (SS). THE TERMINATION BAR MUST HAVE A MINIMUM THICKNESS OF 1/4" (ONE QUARTER INCH) AND MINIMUM WIDTH OF 2" (TWO INCHES). EXTRUDED METAL BARS ARE PROHIBITED.
3. GEOMEMBRANE LINERS MUST MEET THE MINIMUM GUIDELINES OF ECM 1.6.2 AND BE INSTALLED PER THOSE GUIDELINES UNDER THE SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER.
4. ALL GASKETS, SEALANTS, CONCRETE WALL PREPARATION, AND ANCHORS MUST BE INSTALLED PER SPECIFICATIONS BY A CERTIFIED TECHNICIAN FOR THAT SPECIFIC MANUFACTURER.
5. PROTECTIVE SOIL COVER MUST MEET THE GUIDELINES OF ECM 1.6.2. THE TERMINATION BAR SHOULD BE ANCHORED JUST BELOW THE FINISH GRADE OF THE PROTECTIVE COVER.
6. GEOTEXTILE SHALL MEET MINIMUM MANUFACTURERS GUIDELINES AND ECM 1.6.
7. CONCRETE RETAINING WALLS MUST BE WATER-TIGHT AND PROVIDE WATERSTOPS PER STANDARD SPECIFICATION 414S.
8. DEVIATIONS FROM THIS DETAIL MAY BE PERMITTED PER MANUFACTURER GUIDELINES IF APPROVED BY THE CITY INSPECTOR AND A LICENSED GEOTECHNICAL ENGINEER.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT
CONCRETE WALL GEOMEMBRANE LINER ATTACHMENT
3/23/2023 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 661-4A

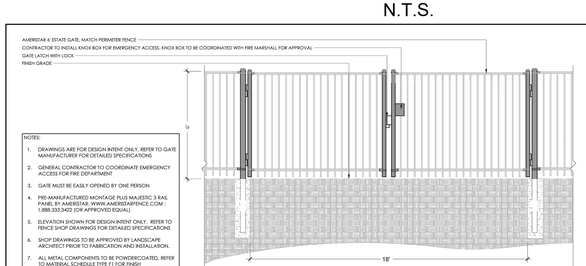


PIPE SUPPORT DETAIL
SCALE: NONE



NOTE: VALVE & PIPE SHALL HAVE MIN. PRESSURE RATING OF 150 PSI

4' DIA CONTROL MANHOLE DETAIL
N.T.S.



POND ACCESS GATE
1/2" = 1'-0"
P-RE-0714O-DETA-12

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: 09Pwqo1.DWG

09/10/2025
STATE OF TEXAS — CHARLES R. HAGER V — 127034 — LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ02

SHEET NO. 20 OF 70 SHEETS

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User: cgehringer
Last Modified: Oct 06, 25 - 16:26
Plot Date/Time: Oct 06, 25 - 16:26:09

NOTE:
TOP OF WALL ELEVATION FOR THE BATCH-DETENTION WATER QUALITY & DETENTION BASIN A IS 891.00' TYPICAL.

POND SHALL BE INSTALLED WITH 6' HT. FENCE / PEDESTRIAN FALL RAIL ALONG TOP OF POND WALLS PER COA STD. DTL. 707S-1. THE TOTAL COMBINED HEIGHT OF THE WALL AND FENCE MUST BE A MINIMUM OF SIX (6) FEET ABOVE THE EXTERIOR FINISHED GRADE.

CONSTRUCTION NOTES:

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5. THE CONTRACTOR WILL BE REQUIRED TO PERFORM TESTING REQUIREMENTS TO SATISFY CITY OF LEANDER INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR.
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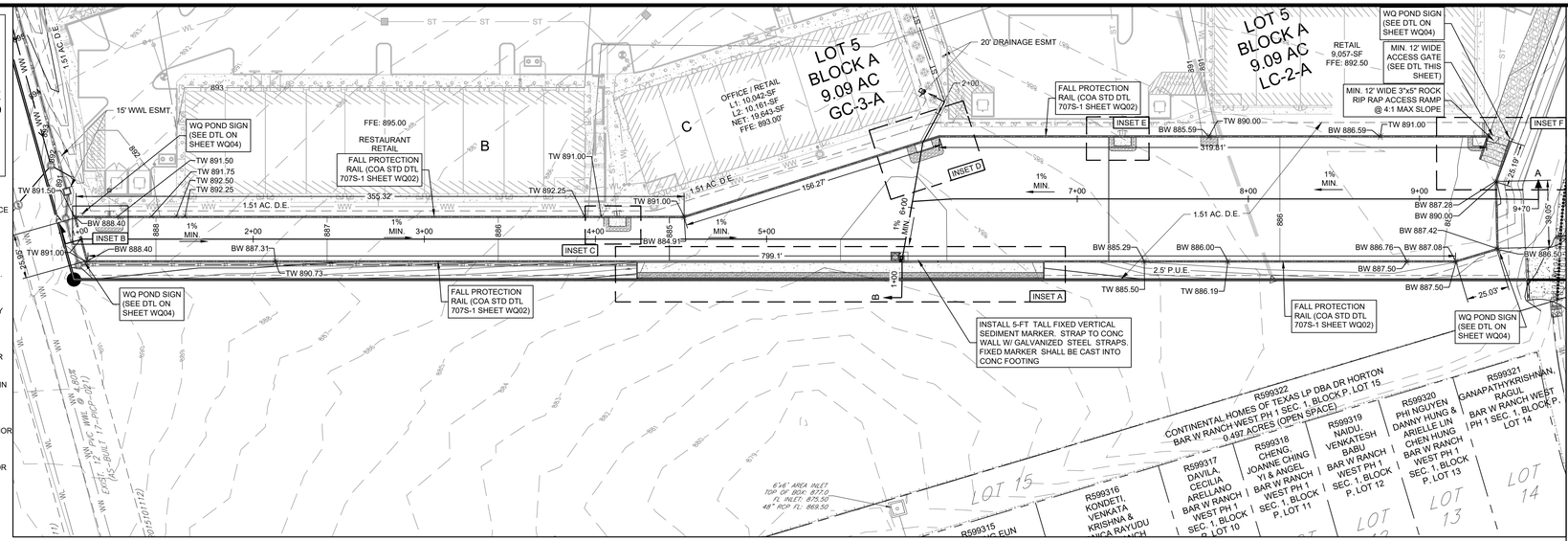
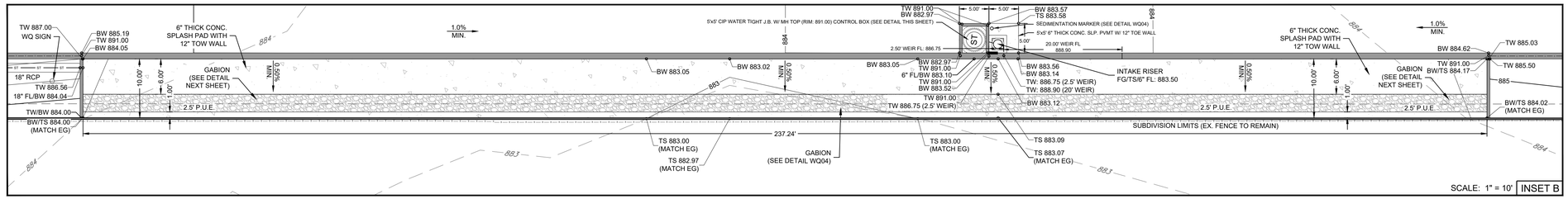




CONTROLS NARRATIVE:

BATCH DETENTION POND IS EQUIPPED WITH A RAIN SENSOR MOUNTED AT THE CONTROL PANEL. VALVE IS TO REMAIN NORMALLY CLOSED. WHEN CONTACT IS MADE BY LEVEL SWITCH, 12 HOUR DELAY TIMER SHALL BEGIN AS SOON AS NO MOISTURE IS DETECTED BY THE RAIN SENSOR. IF THE RAIN SENSOR DETECTS PRECIPITATION, DELAY TIMER WILL RESET TO 12 HOURS. ONCE VALVE OPENS, IT WILL REMAIN OPEN UNTIL THE POND IS DRAINED OR RAIN SENSOR RESETS.

BATCH DETENTION WATER QUALITY
W/ STACKED DETENTION POND CALCULATIONS
FOR TCEQ WPAP PERMITTING IN WILLIAMSON COUNTY
POND B (Ronald Reagan - Northwest)

DRAINAGE AREA DATA:

THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION (91% REMOVAL EFFICIENCY)		
DRAINAGE AREA TO CONTROL (A_C)	11.48	ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	85.00	PERCENT
DRAINAGE AREA IMPERVIOUS COVER (A_I)	9.76	ACRES
AV. ANNUAL PRECIPITATION (P)	32.00	IN
L_M TOTAL DRAINING TO POND	8492.0	LBS
L_M TOTAL COMPENSITORY	119	LBS (Compensatory IC for access imp. & sidewalks)
L_M TOTAL (POND DESIGN)	8611	LBS
PERVIOUS AREA REMAINING IN DA (A_P)	1.72	ACRES
TSS LOAD REMOVED BY PROP. WQ POND (L_R)	9858	LBS
FRACTION OF ANNUAL RUNOFF / OUTFALL AREA (F)	0.87	
RAINFALL DEPTH	1.44	IN
POST-DEV. RUNOFF COEFFICIENT	0.69	
ON-SITE WATER QUALITY VOL. REQUIRED (WQV)	41,651	CF
TOTAL CAPTURE VOLUME (WQV x 1.20)	49,981	CF

WATER QUALITY CONTROL CALCULATIONS:	REQUIRED	PROVIDED
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION		
WATER QUALITY VOLUME (WQV = CD*DA*3630)	49,981 CF	50,325 CF
MAX PONDING DEPTH ABOVE WQ OUTLET (H)		3.25 FT
WATER QUALITY ELEVATION		886.75 FT MSL

BATCH DETENTION BASIN:

ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]
883.5	0	0	0
884	2333	583	583
885	14570	8452	9035
886	24269	19420	28454
887	34080	29175	57629
888	38231	36156	93784
889	39362	38796	132581
890	39416	39389	171969
891	39470	39443	211412

DETENTION POND SUMMARY - B

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	49.90	12.08	15.70	12.24	888.40
10YR	76.30	12.08	30.80	12.20	889.10
25YR	94.50	12.08	51.20	12.17	889.40
100YR	125.90	12.08	88.20	12.14	889.80

Detention Pond - Stage Storage Table

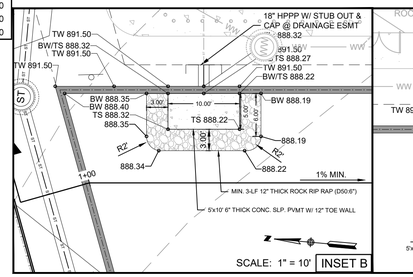
Elevation (FT)	Area (AC)	A1+A2+SQR (A1*A2) (AC)	Incremental Volume (AC-FT)	Cumulative Volume (AC-FT)
883.5	0.000	0.000	0.000	0.000
884	0.054	0.054	0.009	0.009
885	0.334	0.522	0.174	0.183
886	0.557	1.323	0.441	0.624
887	0.782	2.000	0.667	1.291
888	0.878	2.489	0.830	2.120
889	0.904	2.672	0.891	3.011
890	0.905	2.713	0.904	3.915
891	0.906	2.716	0.905	4.820

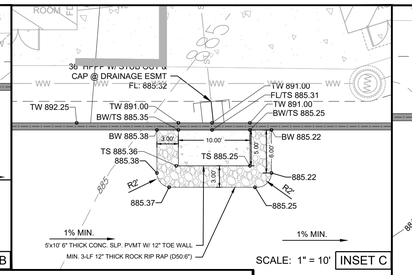
Outlet Structure - Stage Discharge Table

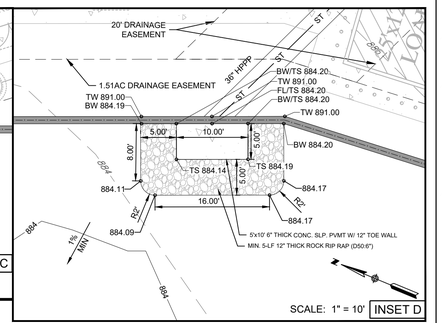
Stage / Elevation	2.5' Weir @ 886.75 Q (cfs)	20' Weir @ 888.90 Q (cfs)	TOTAL Q (cfs)
883.5	0.00	0.00	0.00
884	0.00	0.00	0.00
885	0.00	0.00	0.00
886	0.00	0.00	0.00
887	0.94	0.00	0.94
888	10.48	0.00	10.48
889	25.31	1.90	27.21
890	43.94	69.22	113.16
891	65.71	182.59	248.30

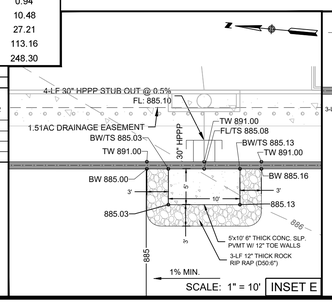
Overall Drainage Study Point Summary
Study Point B

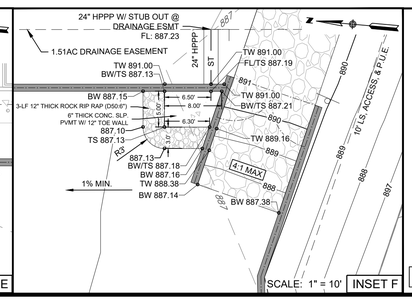
Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	44.80	22.10
10-Year	78.30	39.30
25-Year	102.20	65.30
100-Year	143.40	113.40

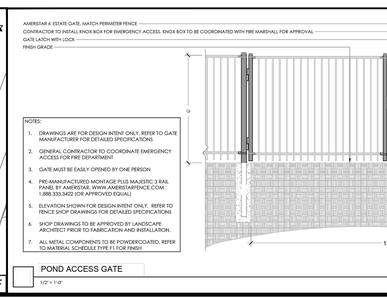












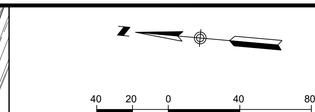
DRAWDOWN CALCULATION FOR BATCH DET WQ BASIN

WQ VOLUME =	50325 CF		
MINIMUM DRAWDOWN TIME = 36 HR = 129600 SECONDS	(48 HRS w/ 12-HR DELAY)		
FLOW = 50325 CF / 129600 SEC =	0.388 CFS		
HEAD= 885.83 - 883.75	= 2.58 (POND AVG HEAD TO ORIFICE CL)		
A = 0.388 CFS/(.60 *	(64.4 *2.58) ^.5)=	0.050203 SF	
R =(A/ 3.14))^.5 =	0.13 FT		
D (in.) = 2R * 12 =	3.03 inch orifice		
Q =0.0502 * .60 * (64.4 * 2.58)^.5 =	0.388 CFS		
DRAWDOWN TIME =	50325 CF / 0.388 CFS	= 129600 SEC	= 36 HRS
THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS			

Water Quality Drawdown Calculations

Time (HRS)	Drawdown Percentage (%)	Remaining WQ Volume (CF)	WQ Stage Elevation (FT)
0:00	0	50,325	886.75
12:00	0	50,325	886.75
24:00	25	37,744	886.32
36:00	50	25,163	885.83
48:00	75	12,581	885.18
60:00	100	0	883.50

Note: Batch Det. Requires 12-hr Lag and to be drained w/in the next 48-hrs.



LEGEND

- BOUNDARY LINE/ R.O.W.
- 990 — PROPOSED CONTOURS
- 990 — EXISTING CONTOURS
- CONCRETE
- ROCK RIPRAP

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 3

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: 05P-WQ01.DWG

09/10/2025

CHARLES R. HAGER 127034 LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

SHEET NO. WQ03

21 OF 70 SHEETS

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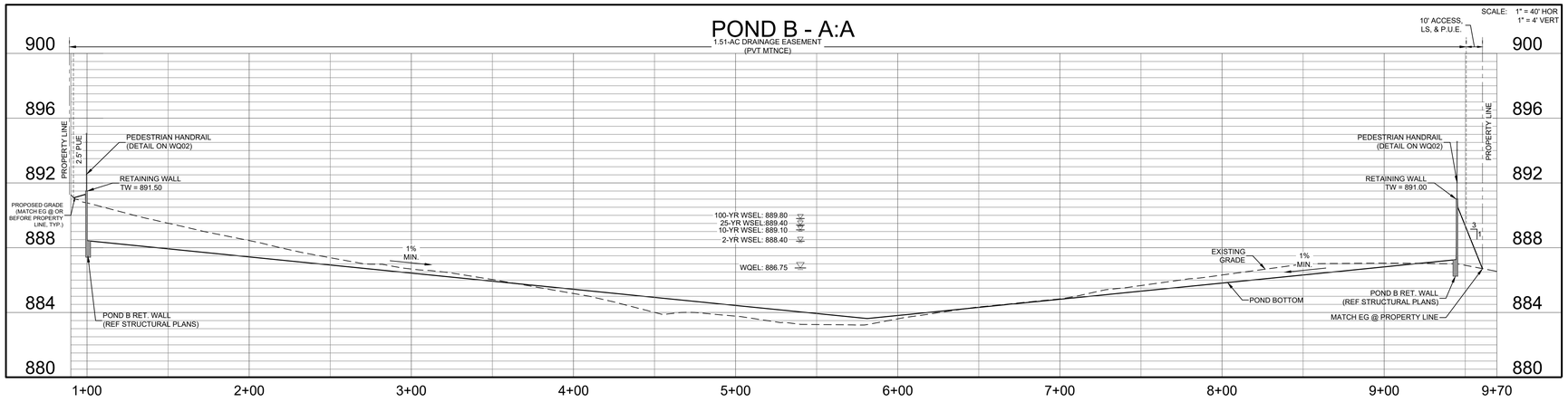
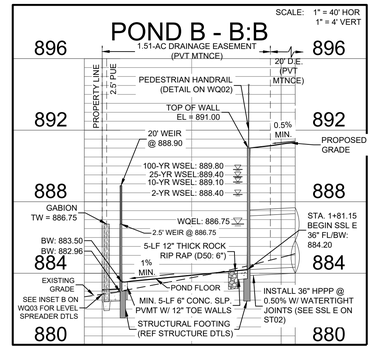




Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

CURRENT
Project Name: **Gabriels Horn Subdivision Pond B**
Date Prepared: **9/2/2025**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point B

Total drainage basin/outfall area =	**11.48**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'B'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA B)
Post-development impervious area within drainage basin/outfall area =	**6.70**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.58**		
$L_{M\ THIS\ BASIN}$ =	**5834**	lbs.	

Compository Drainage Provided by Basin 'B' Water Quality Pond Summary

Total drainage basin/outfall area =	**0.359**	acres	<--AREA ADJACENT TO BASIN 'B' NOT CAPTURED BY POND B
Predevelopment impervious area within drainage basin/outfall area =	**0.000**	acres	(SEE SHEET DM02, DRAINAGE AREA C)
Post-development impervious area within drainage basin/outfall area =	**0.137**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.38**		
$L_{M\ (Compensatory)}$ =	**119**	lbs.	
$L_{M\ (TOTAL)}$ =	**5952**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)
Removal efficiency = **91** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_C x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**11.479**	acres
A_I =	**6.702**	acres
A_P =	**4.78**	acres
L_R =	**6828**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **5952** lbs.

F = **0.87**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

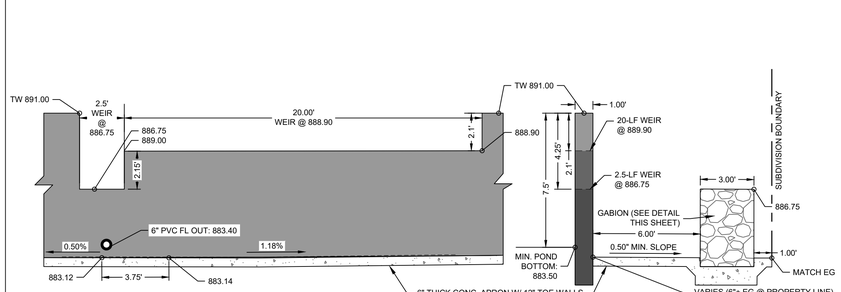
Rainfall Depth =	**1.44**	inches
Post Development Runoff Coefficient =	**0.41**	
On-site Water Quality Volume =	**24537**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**4907**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**29445**	cubic feet

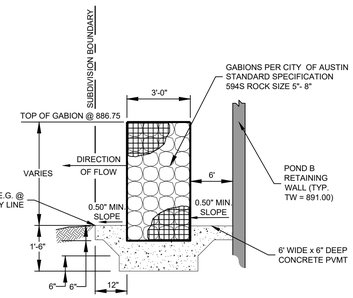
8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin =	**29445**	cubic feet
PROVIDED WATER QUALITY VOLUME=	**50325**	cubic feet

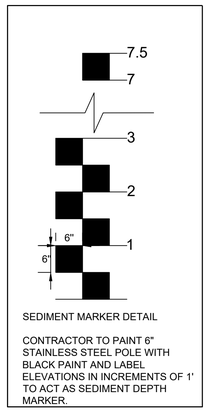


POND B OUTFALL STRUCTURE DETAIL
(FRONT X-SECTION)
SCALE: 1" = 4'

POND B OUTFALL STRUCTURE DETAIL
(SIDE X-SECTION)
SCALE: 1" = 4'



GABION BASKET DETAIL
NTS



SEDIMENT MARKER DETAIL

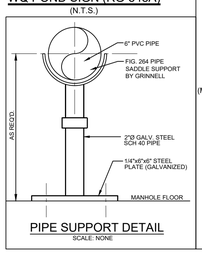
CONTRACTOR TO PAINT 6" STAINLESS STEEL POLE WITH BLACK PAINT AND LABEL ELEVATIONS IN INCREMENTS OF 1' TO ACT AS SEDIMENT DEPTH MARKER.

WATER QUALITY POND MAINTENANCE

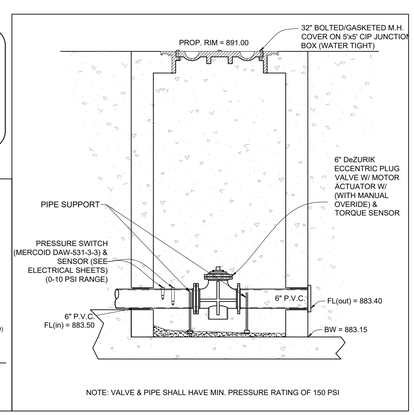
FACILITY OPERATOR:
BM 22, LLC
(703) 220-7265

EDWARDS AQUIFER ID:
RN112280268
TCEQ REGION: 11

WQ POND SIGN (RG-348A)
(N.T.S.)

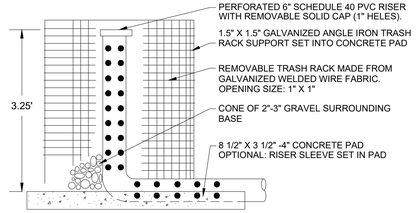


PIPE SUPPORT DETAIL
SCALE: NONE

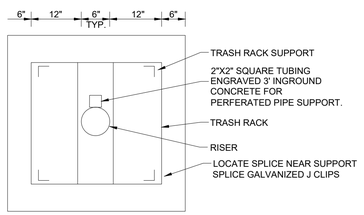


NOTE: VALVE & PIPE SHALL HAVE MIN. PRESSURE RATING OF 150 PSI

4' DIA CONTROL MANHOLE DETAIL
N.T.S.



SIDE VIEW OF RISER



TOP VIEW OF RISER (SQUARE DESIGN)

INTAKE RISER DETAIL
NOT TO SCALE

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 4

LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: G:\SHWQ01.DWG

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ04

SHEET NO. 22 OF 70 SHEETS

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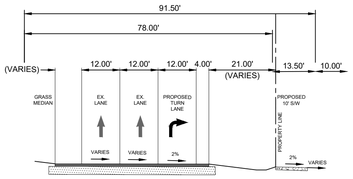
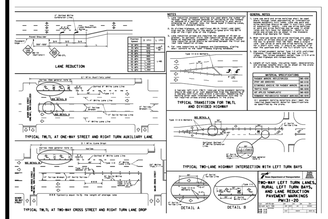
PROPOSED ROADWAY SECTION A-A

(N.T.S.)

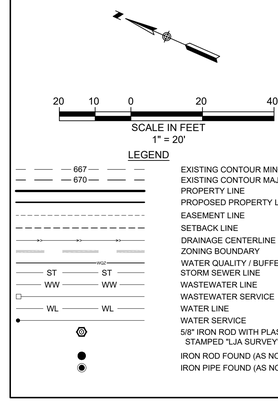


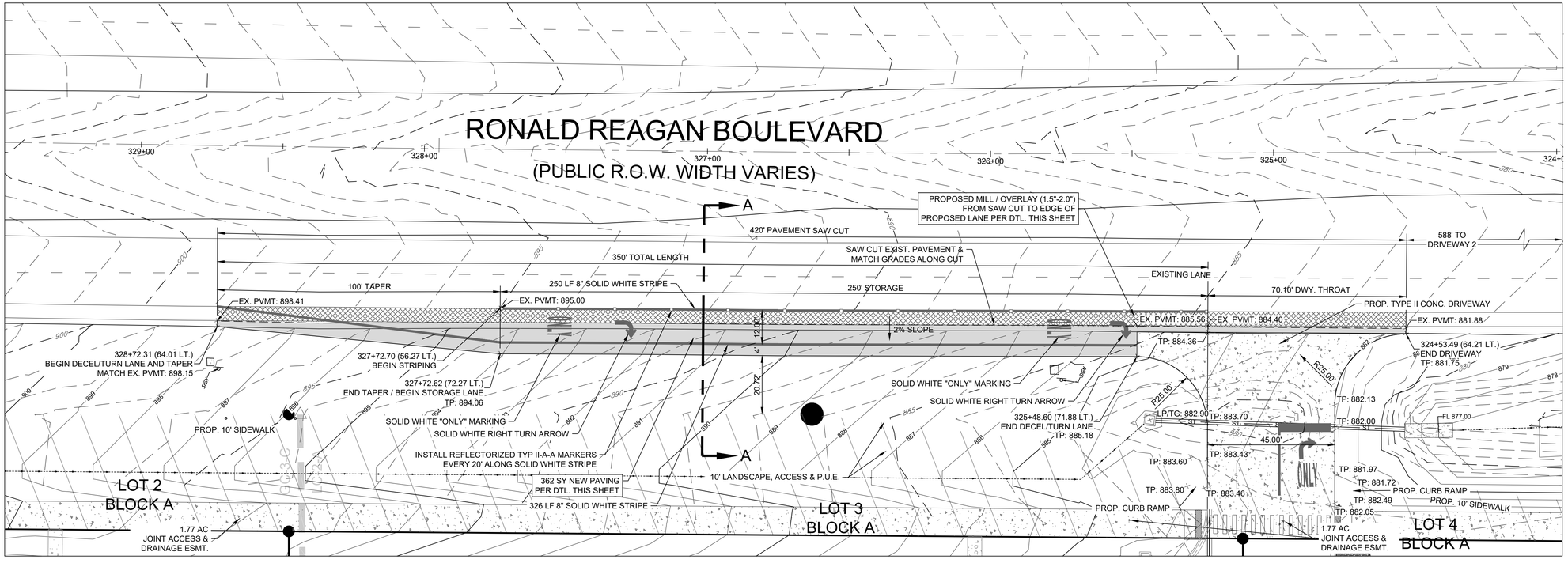


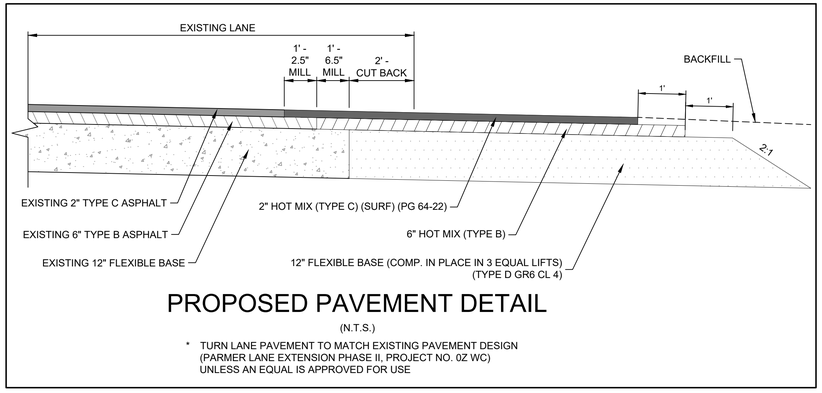
NOTES

1. THIS PROJECT LIES WITHIN THE BOUNDARY OF THE EDWARDS AQUIFER CONTRIBUTING ZONE PER TCEQ MAPS.
2. THE SUBJECT SITE IS NOT LOCATED WITHIN A DESIGNATED FLOODPLAIN, AS DEPICTED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) OF WILLIAMSON COUNTY, PANEL NUMBER 48491C0455F EFFECTIVE DECEMBER 20, 2019.
3. EXISTING ONSITE CONTOURS (1 FT INTERVAL) TAKEN FROM BRYAN TECHNICAL SERVICES, INC. FIELD TOPOGRAPHIC SURVEY DATED 12/6/2021. EXISTING OFFSITE CONTOURS (2 FT INTERVAL) TAKEN FROM CITY OF LEANDER GIS
4. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
5. PROPOSED RIGHT TURN LANE FINISHED GRADE TO MATCH EXISTING PAVEMENT GRADES. REMOVE ALL STRIPING FROM WITHIN TURN LANE AREA AND REPLACE WITH STRIPING SHOWN HEREON.
6. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
7. PROTECT ALL EXISTING UNDERGROUND UTILITIES IN PLACE.
8. ALL STREET SIGNS AND PAVEMENT MARKING SHALL CONFORM TO THE STANDARDS SET FORTH IN THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
9. ALL PAVEMENT MARKINGS SHALL BE TYPE I THERMOPLASTIC AND INSTALLED IN ACCORDANCE WITH ITEM 666 OF THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES.

CONTRACTOR TO LOCATE AND VERIFY LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER PRIOR TO CONSTRUCTION.







PROPOSED PAVEMENT DETAIL

(N.T.S.)

* TURN LANE PAVEMENT TO MATCH EXISTING PAVEMENT DESIGN (PARMER LANE EXTENSION PHASE II, PROJECT NO. 0Z WC) UNLESS AN EQUAL IS APPROVED FOR USE

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
TURN LANE PLAN - DRIVEWAY 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: ...\645-1-0401-04-TL01.dwg

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

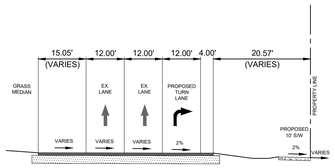
TL01

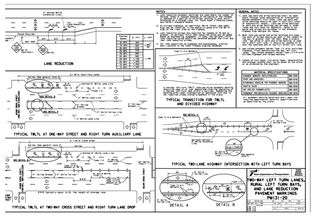
SHEET NO.
23
OF 70 SHEETS

I:\645-1-0401\Submittal Sheets\CDP Set\645-1-0401-04-TL01.dwg
User: cholen
Last Modified: Sep. 15, 25 - 09:44
Plot Date/Time: Oct. 01, 25 - 15:42:19

PROPOSED ROADWAY SECTION A-A

(N.T.S.)





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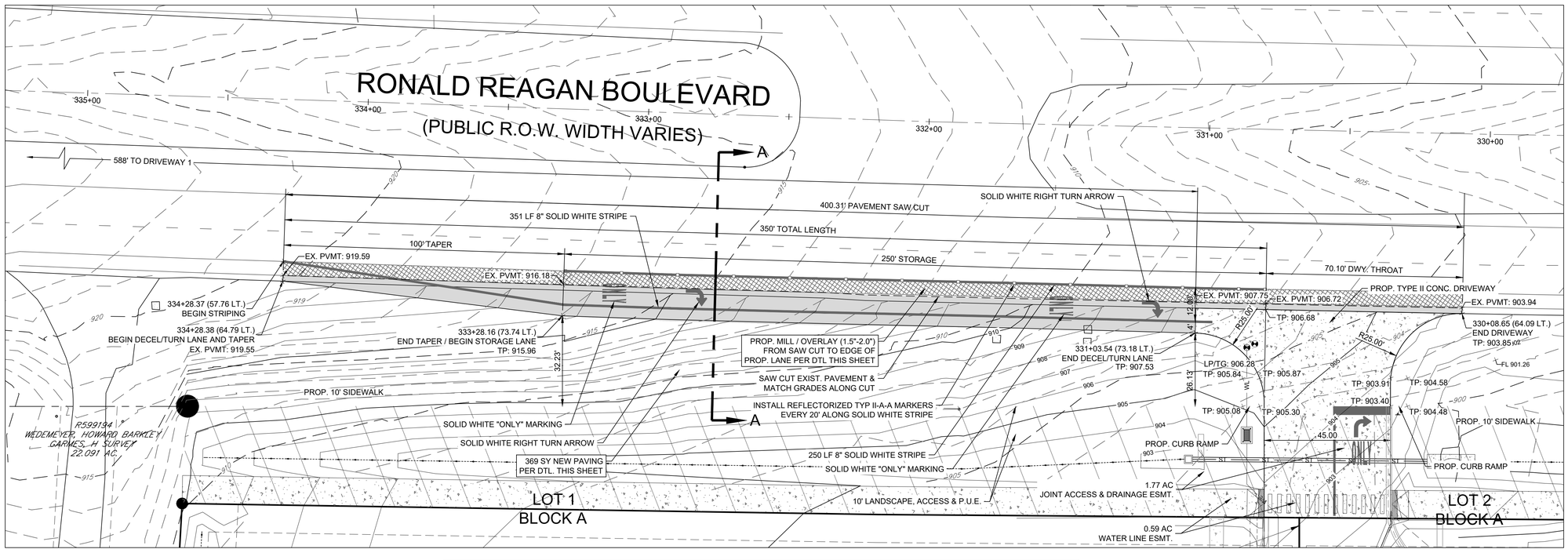
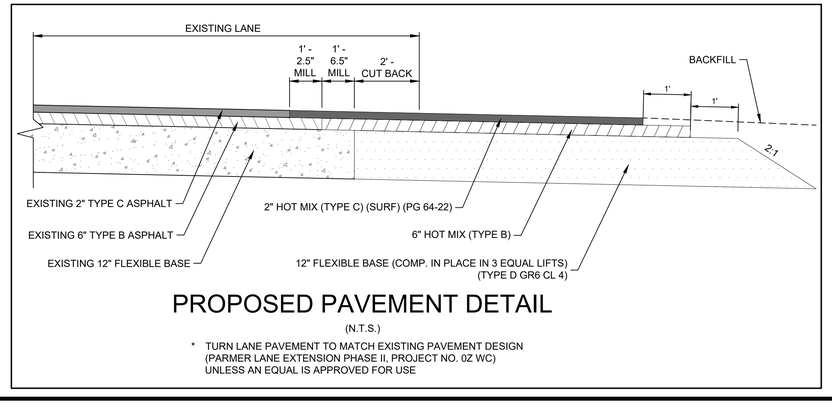
CONTRACTOR TO LOCATE AND VERIFY LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER PRIOR TO CONSTRUCTION.

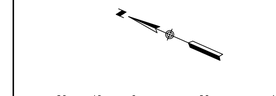




PROPOSED PAVEMENT DETAIL

(N.T.S.)

* TURN LANE PAVEMENT TO MATCH EXISTING PAVEMENT DESIGN (PARMER LANE EXTENSION PHASE II, PROJECT NO. 0Z WC) UNLESS AN EQUAL IS APPROVED FOR USE



LEGEND

- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WQZ — WATER QUALITY / BUFFER ZONE
- ST — ST — STORM SEWER LINE
- WW — WW — WASTEWATER LINE
- WASTEWATER SERVICE
- WL — WL — WATER LINE
- WATER SERVICE
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- IRON PIPE FOUND (AS NOTED)

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
TURN LANE PLAN - DRIVEWAY 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: A641-0401-R-TL01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

TL02

SHEET NO. 24 OF 70 SHEETS

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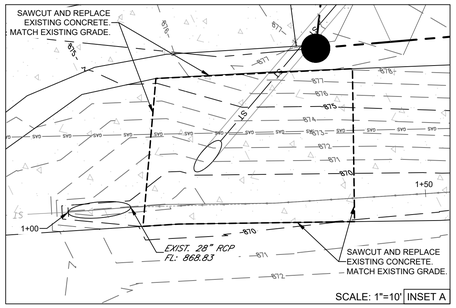
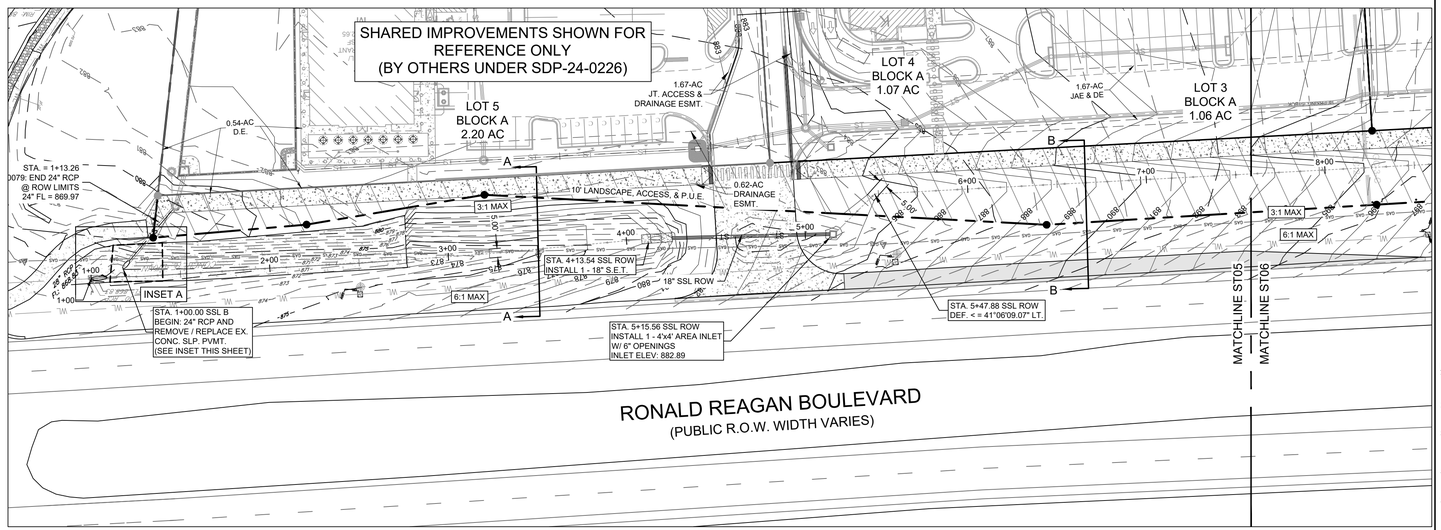
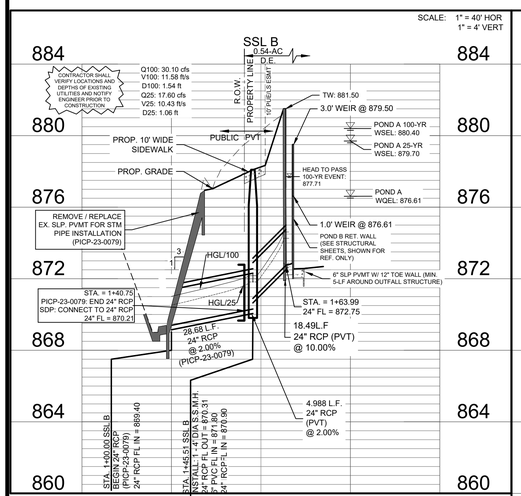
User: cholen
Last Modified: Sep. 15, 25 - 09:44
Plot Date/Time: Oct. 01, 25 - 15:42:30

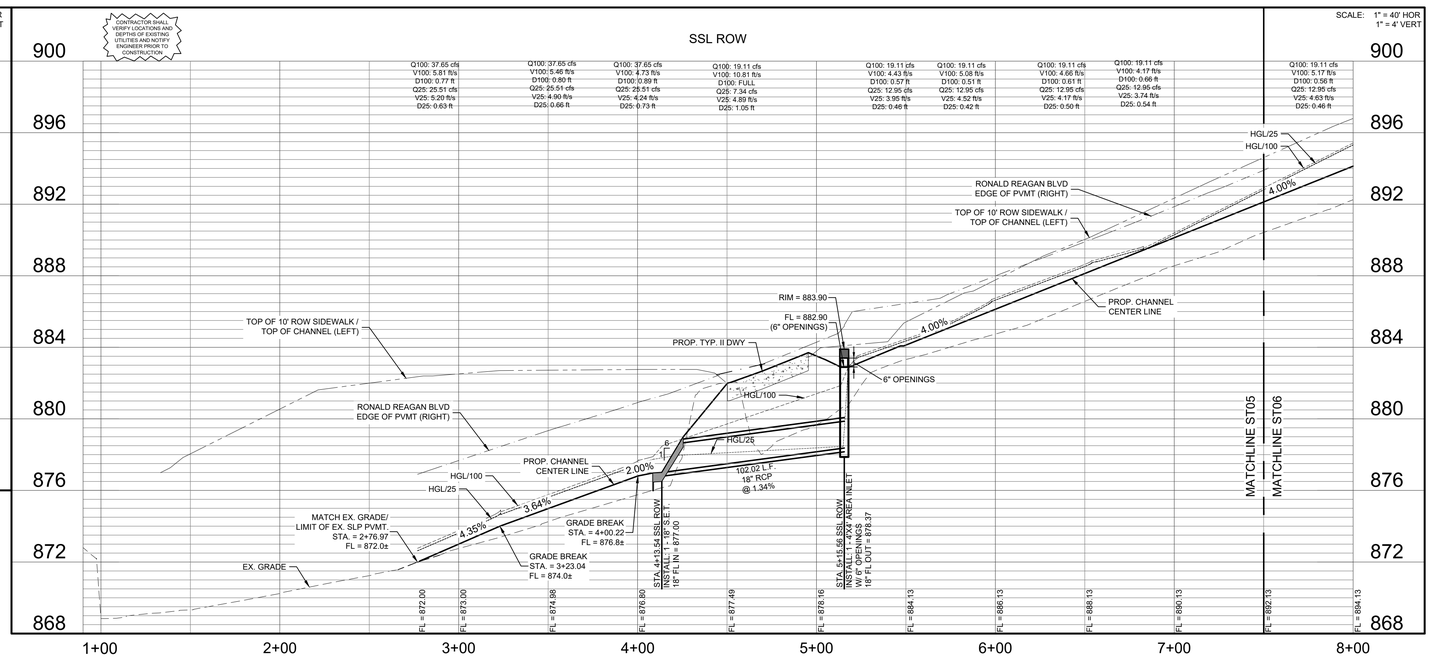
100-Year Storm Event Channel "SSL ROW" Design Summary (per CoA Drainage Criteria Manual)

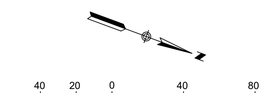
Channel	Start Station	End Station	Q_{100} (cfs)	Description	n-Value	Bottom Width (ft)	Side Slopes (RT)	Side Slopes (LT)	Slope (ft/ft)	Velocity (fps)	Normal Depth (ft)	Velocity Head$_{100}$ (ft)	Top Flow Width (ft)	Depth Required (ft) (Normal Depth + Vel. Head)	Min. Depth Provided (ft)
ROW	2+76.59	3+23.04	37.65	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0430	5.81	0.77	0.52	11.9	1.29	4.1
ROW	3+23.04	4+00.25	37.65	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0360	5.45	0.80	0.46	12.22	1.26	5.1
ROW	4+00.25	4+08.47	37.65	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0200	4.40	0.93	0.3	13.37	1.23	6.1
ROW	5+23.23	5+66.65	19.11	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0350	4.45	0.57	0.31	10.12	0.88	1.0
ROW	5+66.65	5+98.09	19.11	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0510	5.08	0.51	0.4	9.63	0.91	1.0
ROW	5+98.09	6+53.97	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0380	4.68	0.61	0.34	9.46	0.95	1.0
ROW	6+53.97	6+82.95	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0290	4.25	0.65	0.28	9.85	0.93	1.0
ROW	6+82.95	8+12.25	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0500	5.16	0.57	0.41	9.09	0.98	1.0







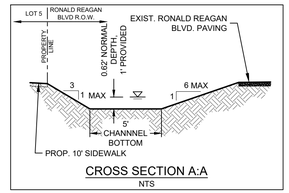




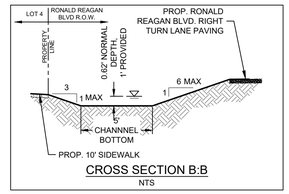
LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE RCP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
4. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF LEANDER SPECIFICATIONS.
5. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.



CROSS SECTION A:A
NTS



CROSS SECTION B:B
NTS

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
PICP STORM SEWER LINE - ROW PLAN & PROFILE
SHEET 1

LEANDER, TEXAS

NO.	REVISIONS DESCRIPTION	BY	DATE

07/08/2025
DATE:
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: PICP-ST01

07/08/2025

CHARLES R. HAGER IV, 127034, LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

ST01.0

SHEET NO. 25 OF 70 SHEETS

LEANDER PROJECT No. PICP-23-0079

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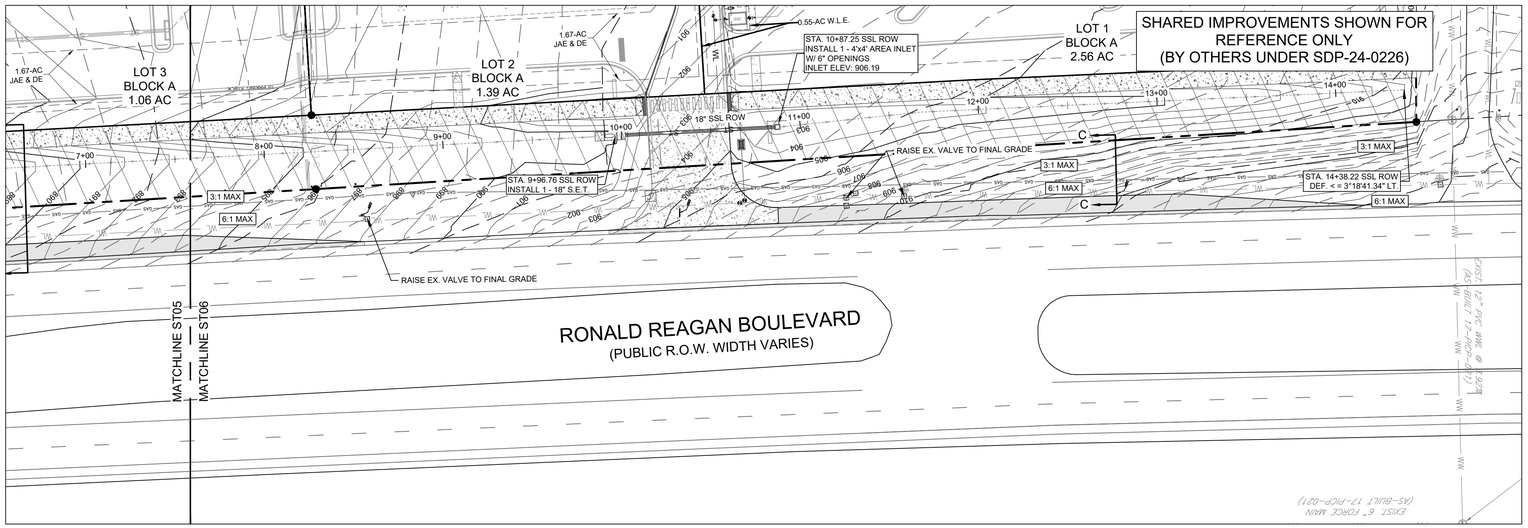
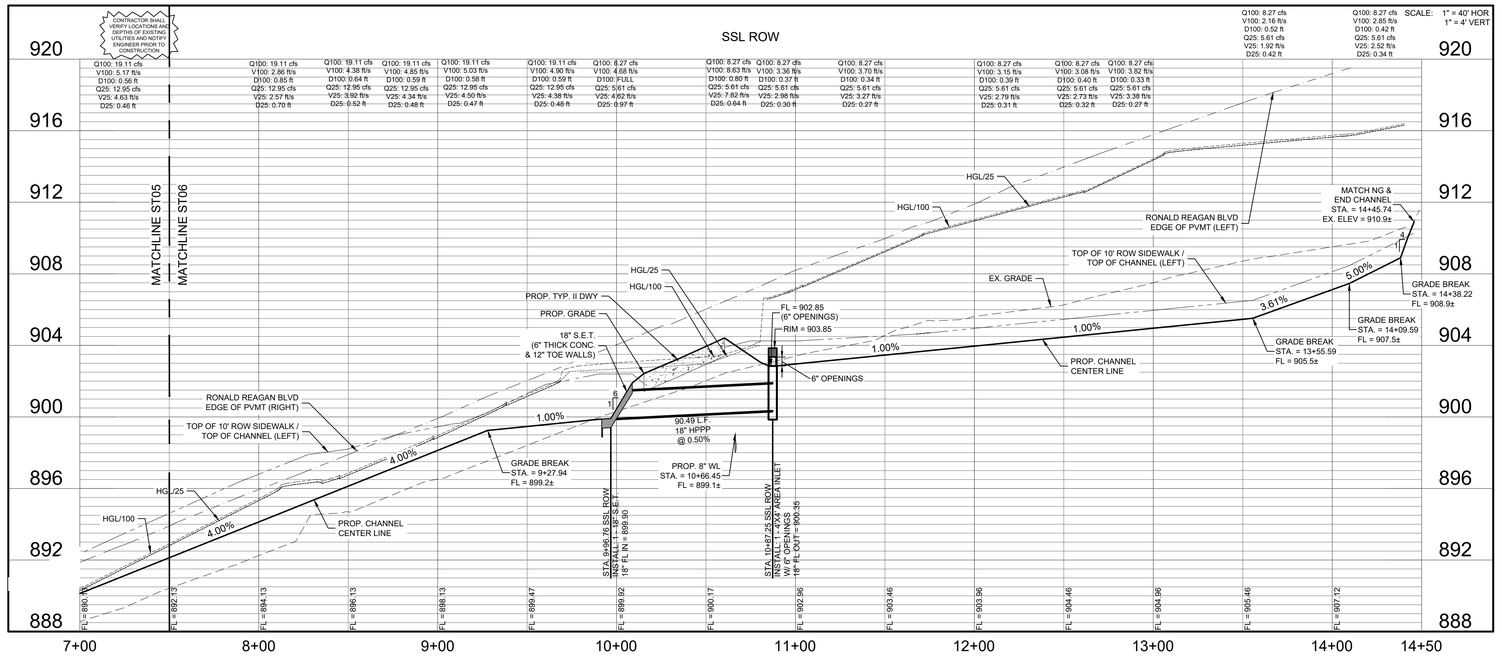
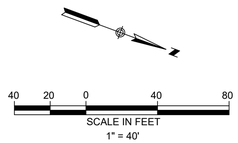
User: cfuller
Last Modified: Sep. 15, 25 - 09:45
Plot Date/Time: Oct. 01, 25 - 15:44:52

100-Year Storm Event Channel "SSL ROW" Design Summary (per CoA Drainage Criteria Manual)

Channel	Start Station	End Station	Q_{100} (cfs)	Description	n-Value	Bottom Width (ft)	Side Slopes (RT)	Side Slopes (LT)	Slope (ft/ft)	Velocity (fps)	Normal Depth (ft)	Velocity Head$_{100}$ (ft)	Top Flow Width (ft)	Depth Required (ft) (Normal Depth + Vel. Head)	Min. Depth Provided (ft)
ROW	8+12.25	8+32.72	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0110	2.99	0.83	0.14	11.46	0.97	1.0
ROW	8+32.72	8+45.37	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0300	4.30	0.64	0.29	9.8	0.93	1.0
ROW	8+45.37	8+97.76	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0410	4.81	0.59	0.36	9.35	0.95	1.0
ROW	8+97.76	9+38.66	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0470	5.05	0.57	0.4	9.17	0.97	1.0
ROW	9+38.66	9+68.80	19.11	grass-lined, clean	0.035	4	3 : 1	6 : 1	0.0440	4.93	0.58	0.38	9.26	0.96	1.0
ROW	10+84.27	10+96.66	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0340	3.42	0.36	0.18	8.28	0.54	1.0
ROW	10+96.66	11+71.33	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0440	3.74	0.32	0.22	8.05	0.54	1.0
ROW	11+71.33	12+53.33	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0260	3.12	0.39	0.15	8.53	0.54	1.0
ROW	12+53.33	12+61.33	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0340	3.42	0.36	0.18	8.28	0.54	1.0
ROW	12+61.33	13+06.05	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0450	3.77	0.34	0.22	8.03	0.56	1.0
ROW	13+06.05	14+05.39	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0100	2.23	0.51	0.08	9.57	0.59	1.0
ROW	14+05.39	14+40.43	8.27	grass-lined, clean	0.035	5	3 : 1	6 : 1	0.0190	2.80	0.43	0.12	8.84	0.55	1.0







LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

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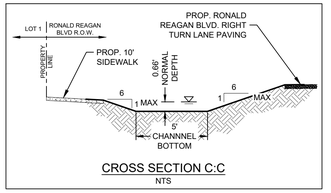

CROSS SECTION C:C
NTS

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

LEANDER PROJECT No. PICP-23-0079

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
PICP STORM SEWER LINE - ROW PLAN & PROFILE
SHEET 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE:	07/08/2025
DESIGNED BY:	CRH
DRAWN BY:	ADG
CHECKED BY:	CRH
DRAWING NAME:	PICP-ST01

07/08/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

ST01.1

SHEET NO.
26
OF 70 SHEETS

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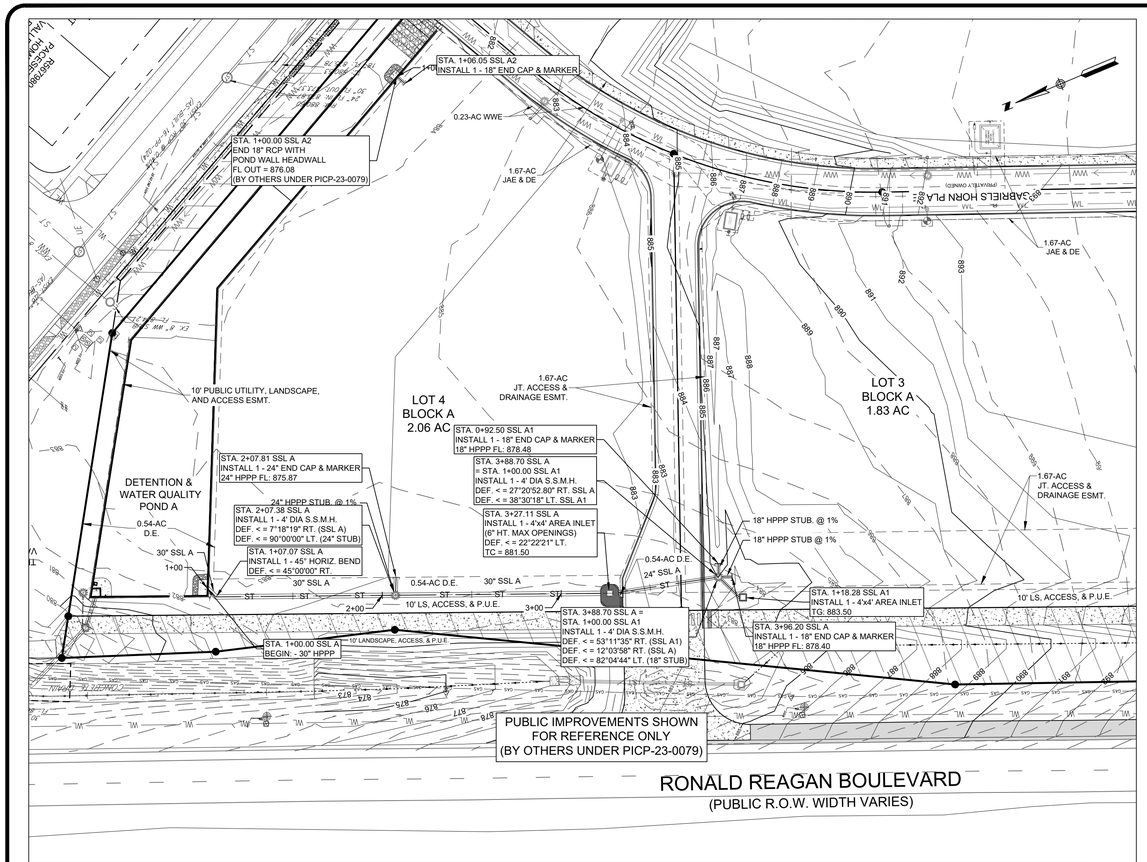

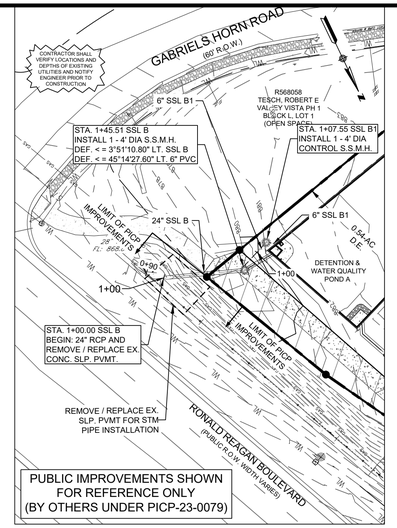

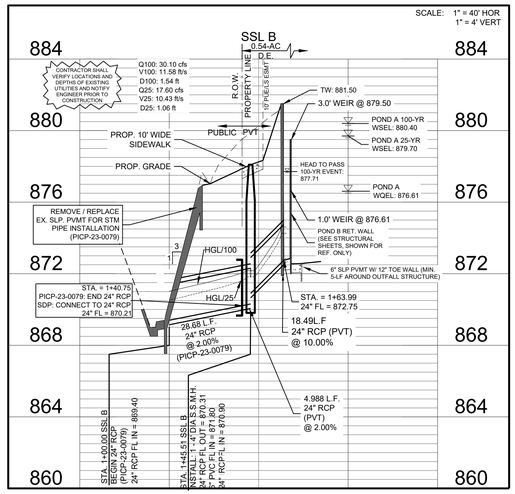

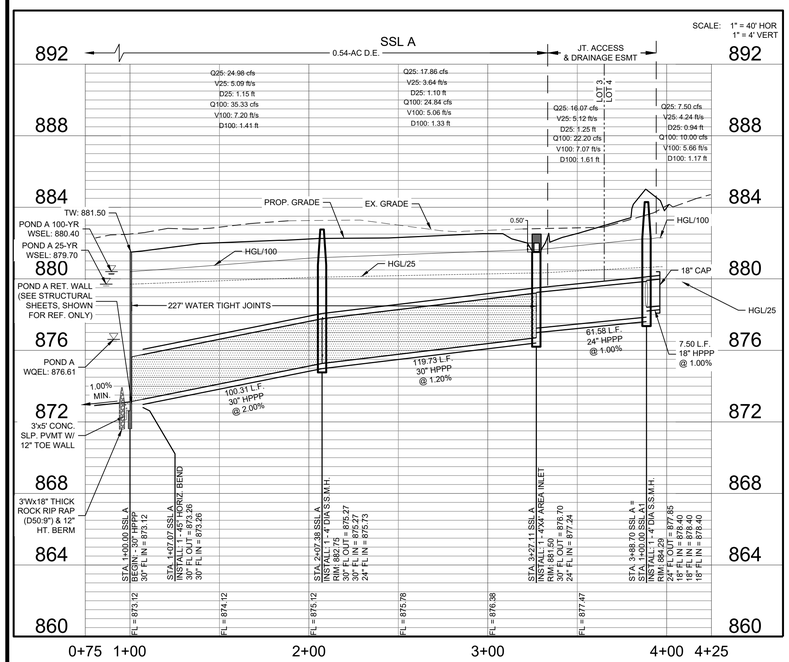

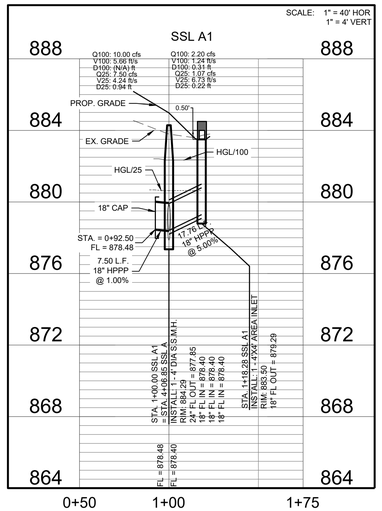

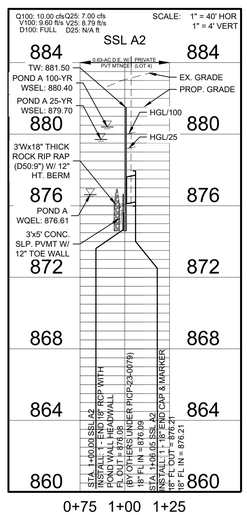

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
WM	WWMH	WASTEWATER MANHOLE
ST	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE RCP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
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NOTE: STORM SEWER DESIGN SHOWN HEREON ASSUMES A STARTING TAILWATER ELEVATION OF 880.00'.

HEAD REQUIRED TO PASS 100-YR EVENT FROM POND A OUTFALL TO PIPE OUT

100-yr Storm Event Ponding Height (above centroid)=(Q/((Cd*A))2 /(2*32.2)

0.6	Cd
24	Pipe Diameter or Orifice Width (in)
3.14	Area of Pipe (sf)
1.00	Orifice Area
1.00	Number of Pipes / Orifices
3.14	Total Area (sf)
30.1	Discharge (100 Yr) (cfs)
872.75	Outfall Pipe FL (ft)
3.96	Height Above Centroid (ft)
877.71	**100-Yr WSEL to Pass 100-yr Discharge (ft) through Pipe Out**
880.40	100-Yr WSEL to Pass 100-yr Discharge (ft) over Outfall Structure Weir
879.50	Pond Weir Elev. (ft)
Yes	Is 100-yr WSEL from Pipe Out > 100-yr WSEL over Weir?
Yes	Is Pond Weir > 100-yr WSEL from Pipe Out?

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
OSP STORM SEWER LINE 'A', 'A1', 'B' & 'B1' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: 08#-ST01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
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FRN-F-1386

JOB NUMBER:

SHEET NO. ST02.0

OF 70 SHEETS

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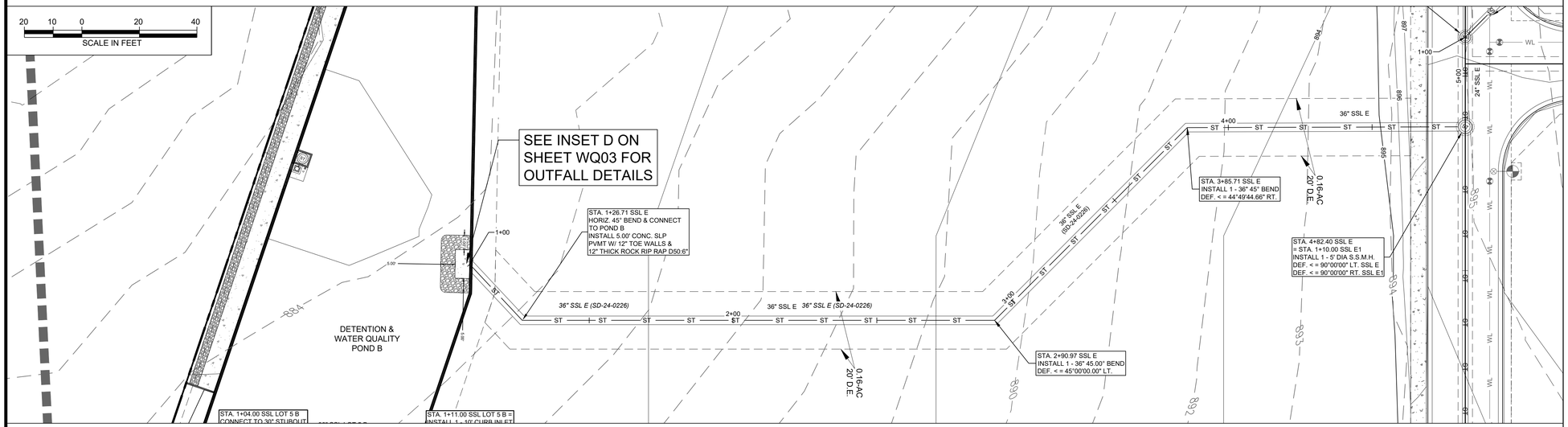
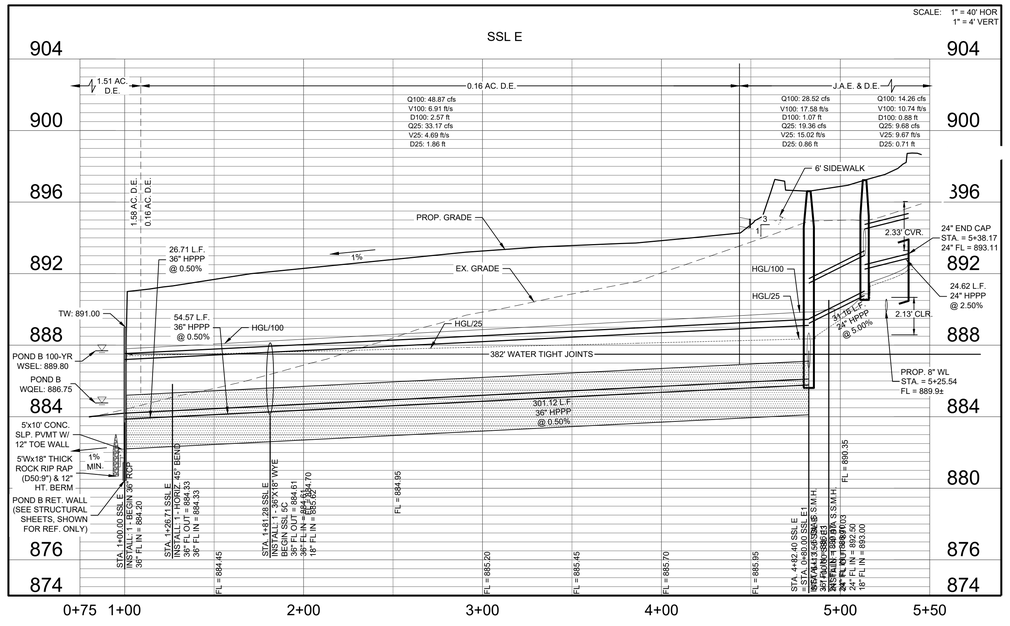
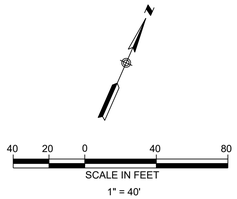
Plot Date/Time: Oct. 01, 25 - 15:41:27







LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

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Pond B SSL E Outfall Rip Rap Sizing	
Q_{100} =	22.13 cfs
V =	6.57 fps (36" Pipe Out)
D_{50} =	6.09 ($D_{50} = 0.0105V^{2.05}$) inches min.
USE CLASS 1(D_{50} = 6" DIA.) RIP-RAP	

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
OSP STORM SEWER LINE 'E' PLAN & PROFILE

LEANDER, TEXAS

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: OSP-ST01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
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LICENSED PROFESSIONAL ENGINEER

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FRN-F-1386

JOB NUMBER:

ST02.1

SHEET NO.
28
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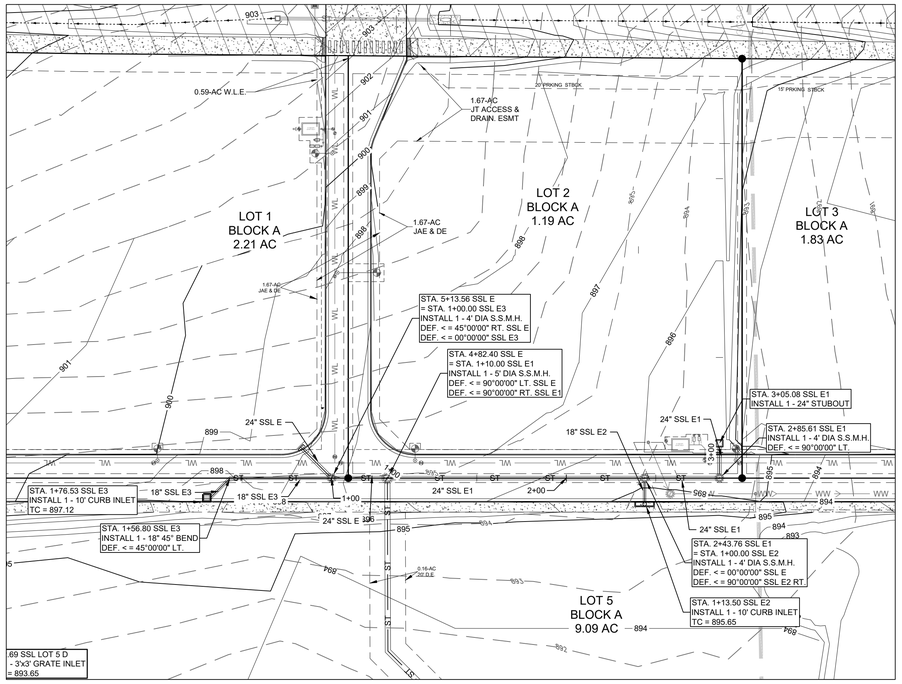

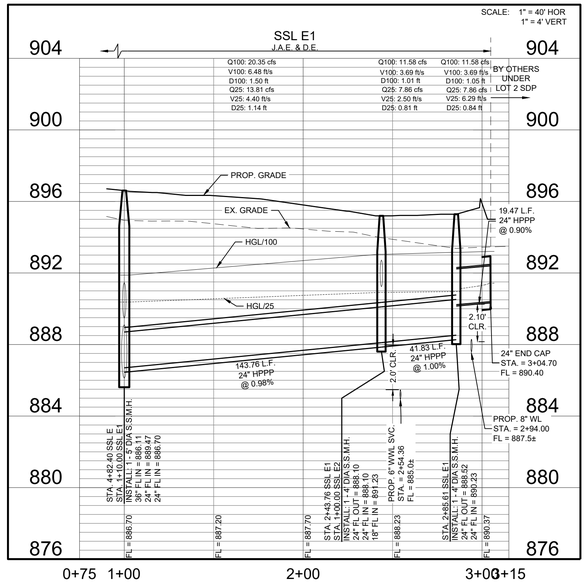

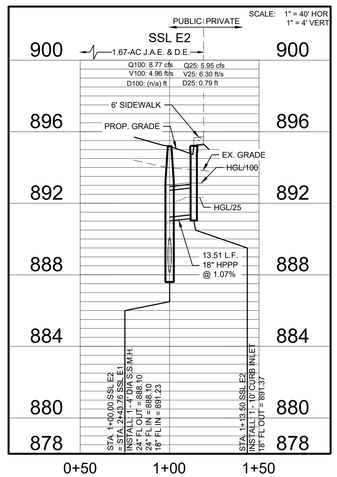

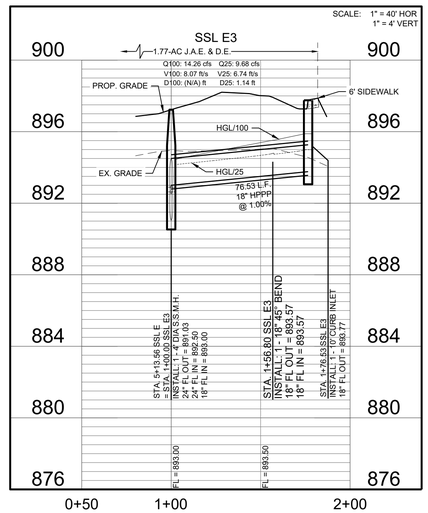

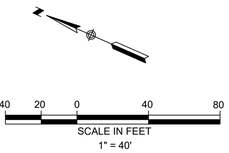

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
OSP STORM SEWER LINE 'E1' 'E2' & 'E3' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: OSP-ST01

09/10/2025
STATE OF TEXAS
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JOB NUMBER:

ST01.2

SHEET NO. 29 OF 70 SHEETS

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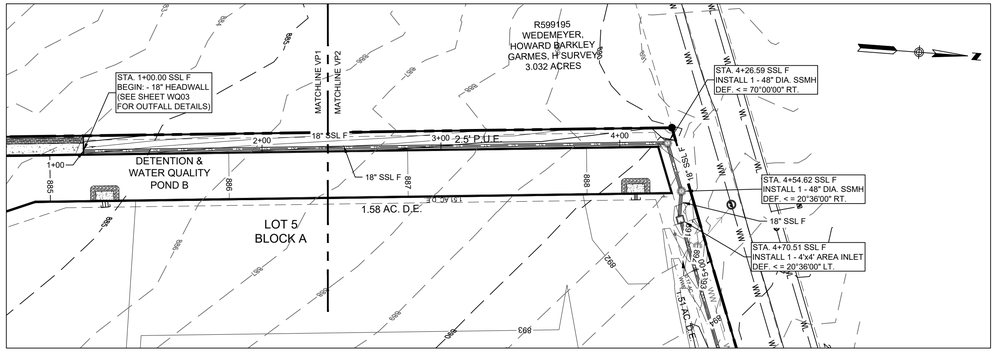
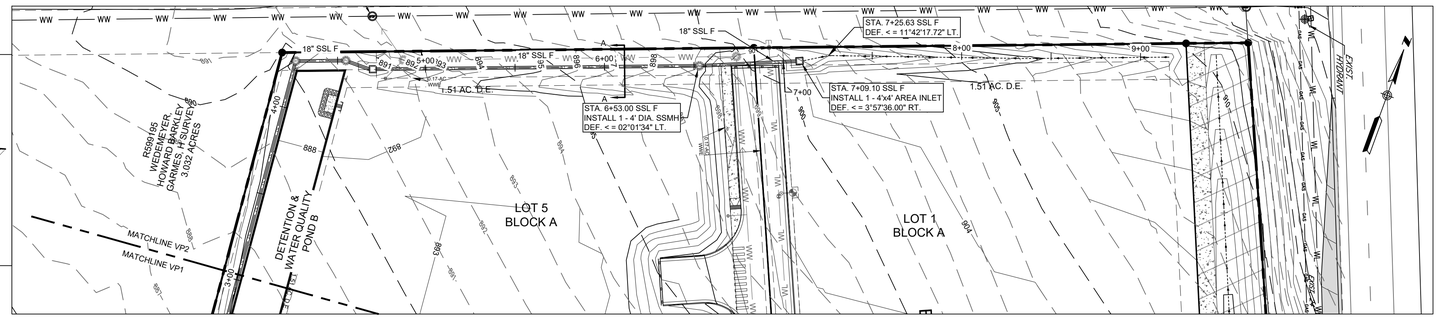
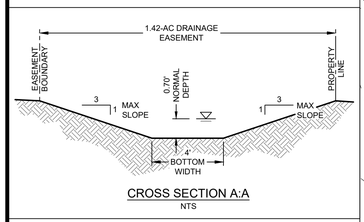
Last Modified: Sep 15, 25 - 09:45
Plot Date/Time: Oct 01, 25 - 15:51:09

100-Year Storm Event Channel "SSL F" Design Summary (per CoA Drainage Criteria Manual)

Channel	Start Station	End Station	Q_{100} (cfs)	Description	n-Value	Bottom Width (ft)	Side Slopes (RT)	Side Slopes (LT)	Slope (ft/ft)	Velocity (fps)	Normal Depth (ft)	Velocity Head$_{100}$ (ft)	Top Flow Width (ft)	Channel Depth Required (ft) (Normal Depth + Vel. Head)	Channel Depth Provided (ft)
SSL F	4+55.20	5+61.44	9.41	grass-lined, clean	0.035	4	3 : 1	3 : 1	0.0509	4.49	0.40	0.31	6.42	0.71	1.0
SSL F	5+61.44	6+33.77	9.41	grass-lined, clean	0.035	4	3 : 1	3 : 1	0.0413	4.17	0.43	0.27	6.56	0.70	1.0







CROSS SECTION A:A
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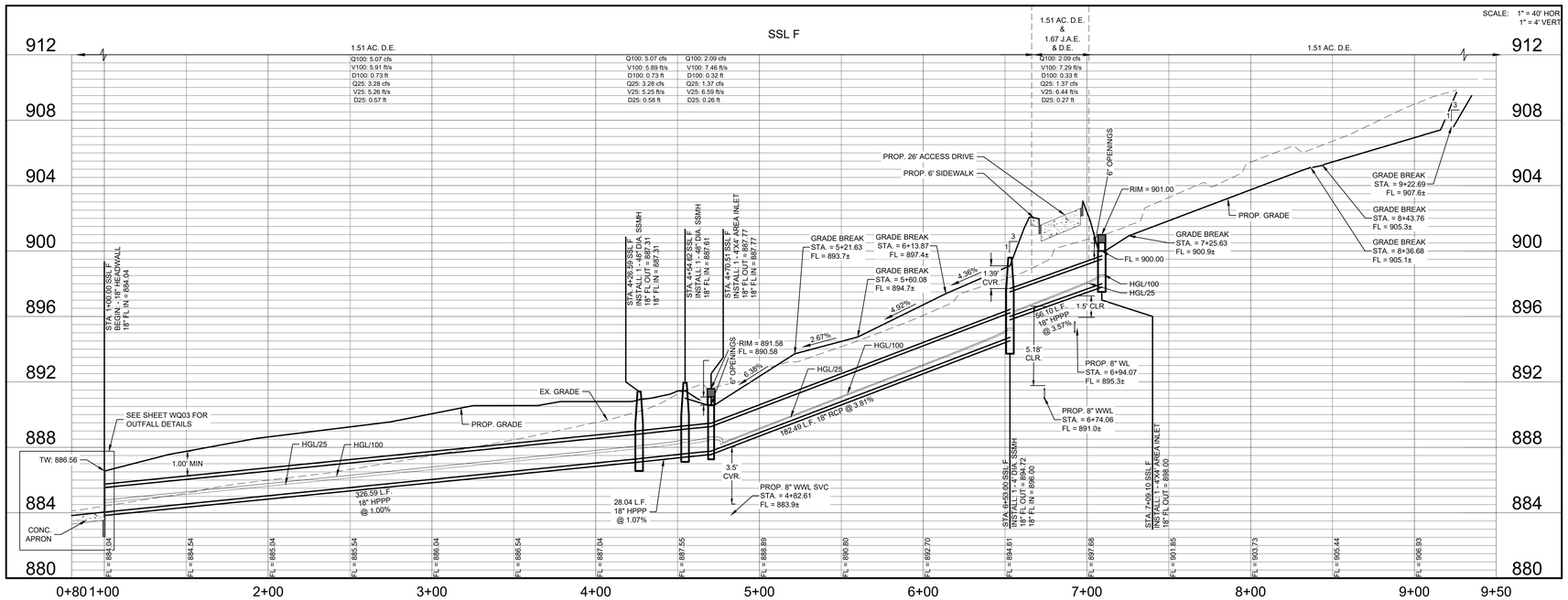

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
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TCEQ CONTRIBUTING ZONE PLAN
OSP STORM SEWER LINE 'F' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: ADG
CHECKED BY: CRH
DRAWING NAME: OSP-ST01

09/10/2025
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JOB NUMBER:

ST02.3

SHEET NO. 30 OF 70 SHEETS

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Last Modified: Sep. 15, 25 - 09:45
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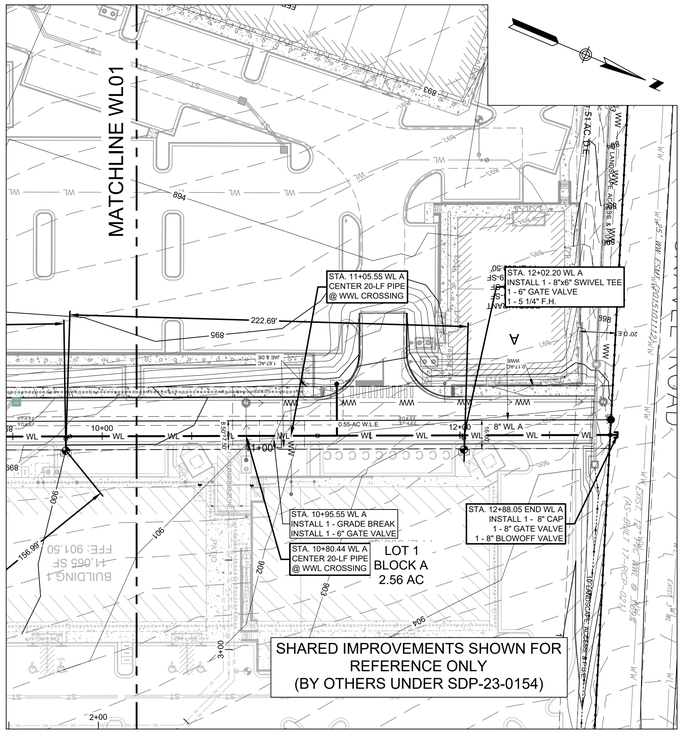
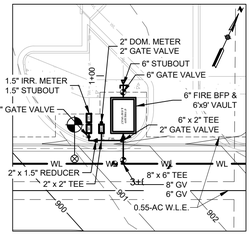


6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

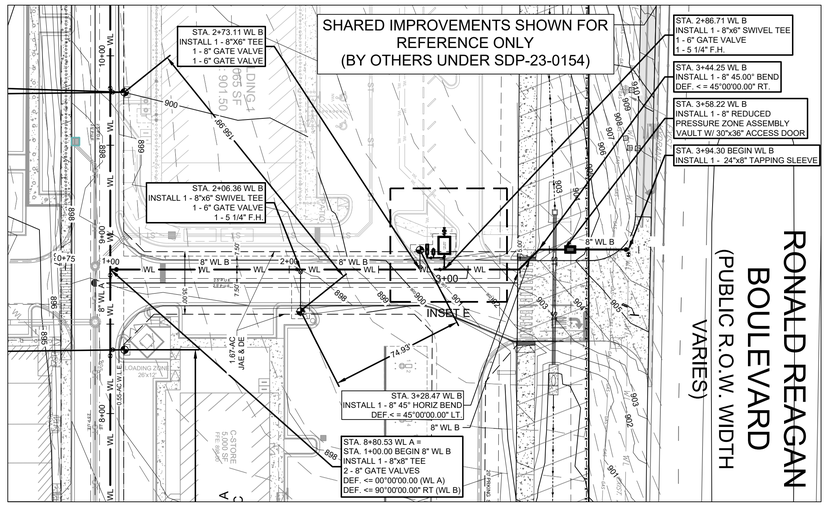
1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217 (7)(D).

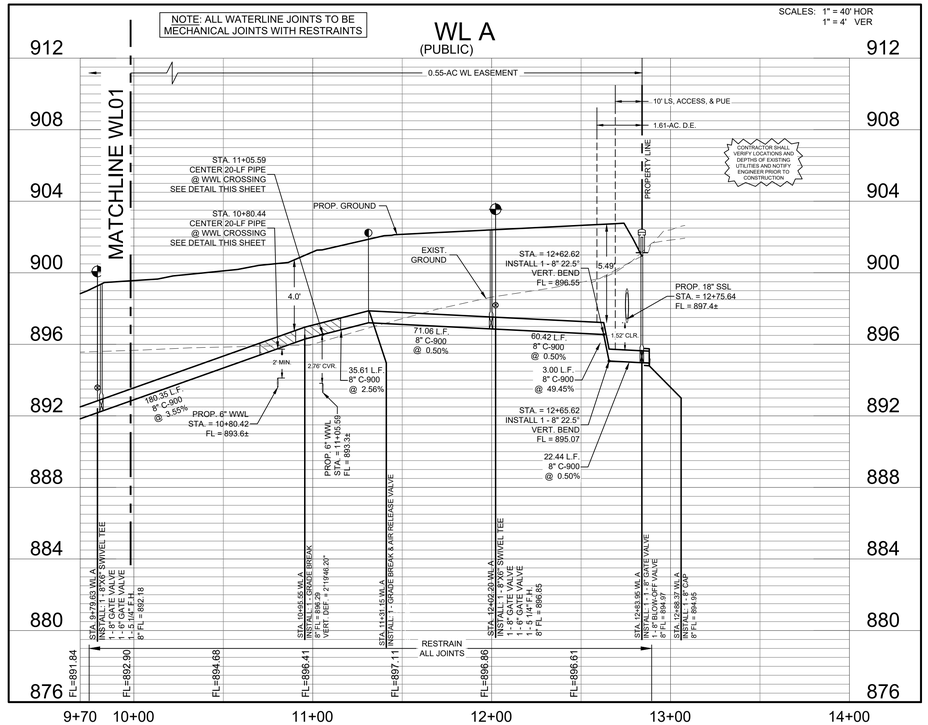


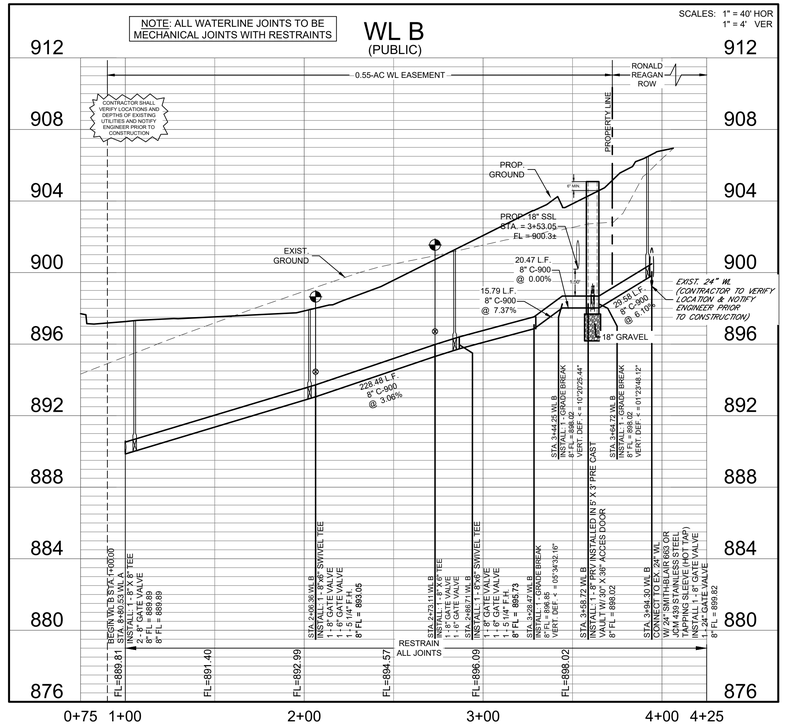
INSET E
SCALE 1" = 20'

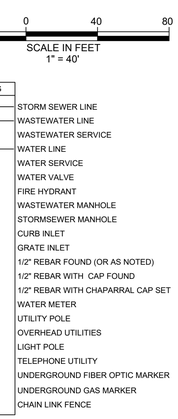
K. FRIESE WATER MODEL NOTE:
BASED ON A MAXIMUM DAY DEMAND, AND FIRE FLOW ANALYSIS USING A MINIMUM FIRE FLOW OF 1,000 GPM FOR THE PROPOSED DEVELOPMENT:

- MINIMUM PRESSURE = 119 PSI (1,180 HGL)
- MAXIMUM PRESSURE = 132 PSI (1,210 HGL)
- FIRE FLOW AVAILABLE = 4,000GPM AT 105 PSI RESIDUAL
- INSTALL PRV'S AT CONNECTIONS SET TO MAXIMUM PRESSURE OF 80 PSI









WATER NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900-DR14 MIN. 305 PSI PRESSURE RATING
2. ALL WATER IMPROVEMENTS SHALL BE INSTALLED TO CITY OF LEANDER SPECIFICATIONS AND STANDARDS.
3. ALL POTABLE WATER LINES SHALL BE AWWA C900-DR14 PVC (WITH MIN. 305 PSI PRESSURE RATING). FIRE HYDRANT LEADS SHALL BE CLASS 350 DUCTILE IRON.
4. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER WATER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
5. NO. 10 SOLID COPPER WIRE SHALL BE INSTALLED AS TRACER WIRE ABOVE ALL NONMETALLIC WATER LINES
6. ALL SERVICE LINES SHALL INCLUDE GATE VALVE AT MAIN LINE.
7. THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH LEANDER FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE.
8. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
9. TAPPING SLEEVES TO BE SMITH-BLAIR 663 OR JCM 439 ALL STAINLESS TAPPING SLEEVES.
10. WATER SERVICE IS PROVIDED BY THE CITY OF LEANDER.
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12. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.
13. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.
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DETAILS FROM TCEQ 217.53

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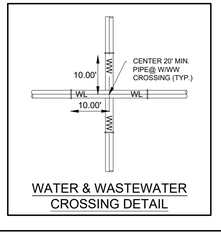
2. PIPES MUST BE CENTERED ON THE CROSSING.
3. PIPES MUST TERMINATE AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE.
4. WW PIPE MUST BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE CLASS PIPE.



WATER & WASTEWATER
CROSSING DETAIL

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER LINE 'A' & 'B' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: A641-0601-ENVR.01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WL01

SHEET NO. 31 OF 70 SHEETS

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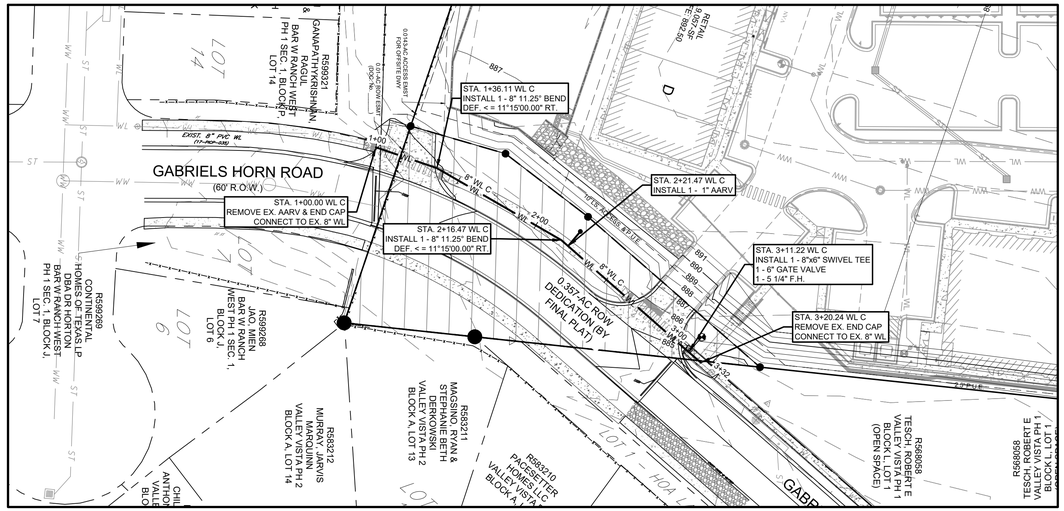
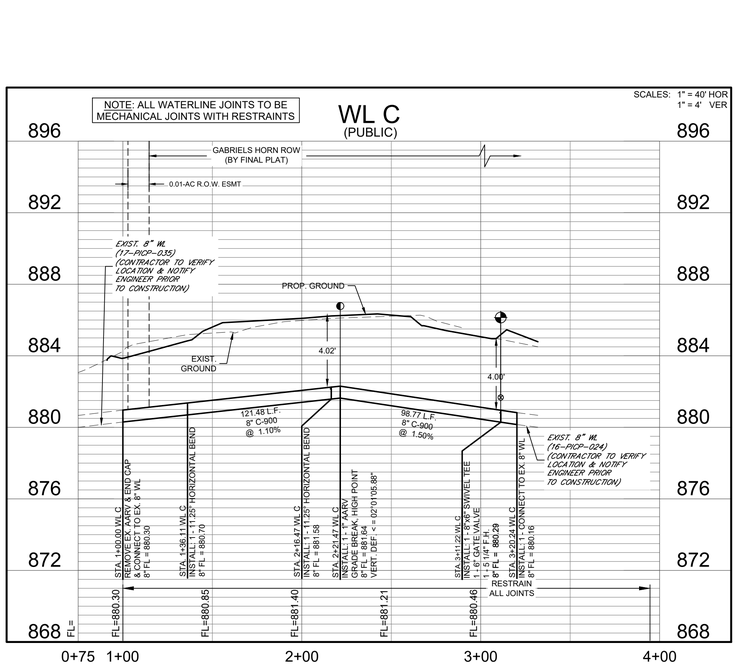
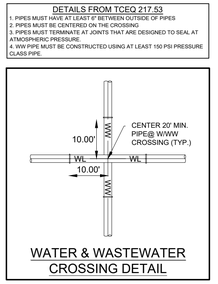
Plot Date/Time: Oct. 01, 25 - 15:56:41







6 INCHES TO 2 FEET OF CLEARANCE

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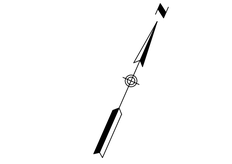

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
ST	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
OU	OU	OVERHEAD UTILITIES
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

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CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER LINE 'C' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: A971-WL01.dwg

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER
CRHager

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WL03

SHEET NO. 32 OF 70 SHEETS

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Plot Date/Time: Oct. 01, 25 - 10:56:50

DETAILS FROM TCEQ 217.53

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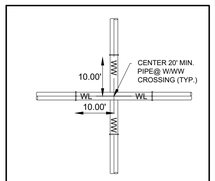
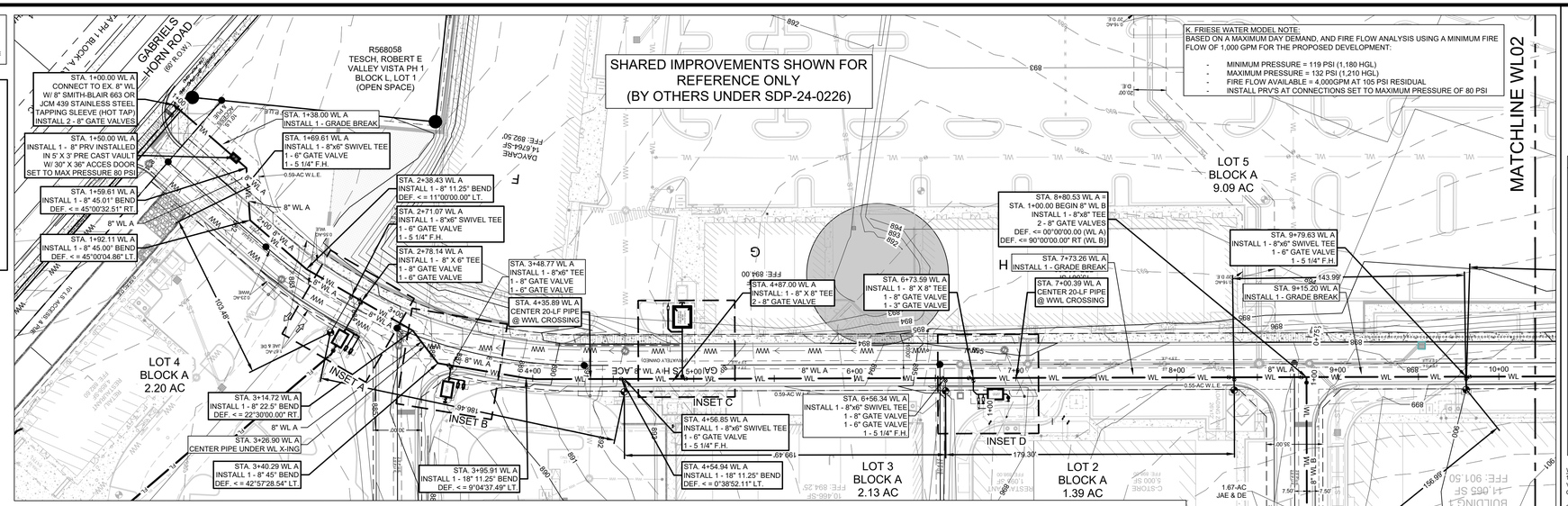
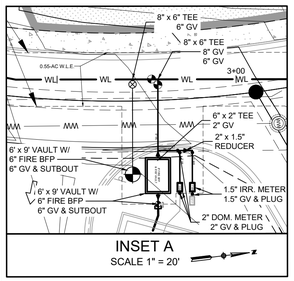
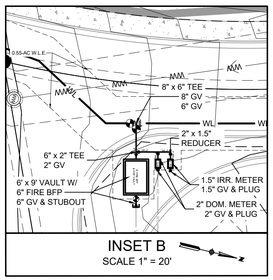


WATER & WASTEWATER CROSSING DETAIL

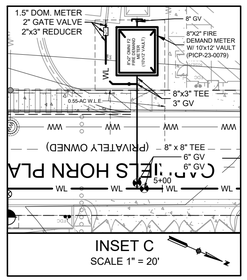




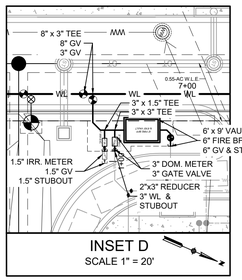
INSET A
SCALE 1" = 20'



INSET B
SCALE 1" = 20'



INSET C
SCALE 1" = 20'



INSET D
SCALE 1" = 20'

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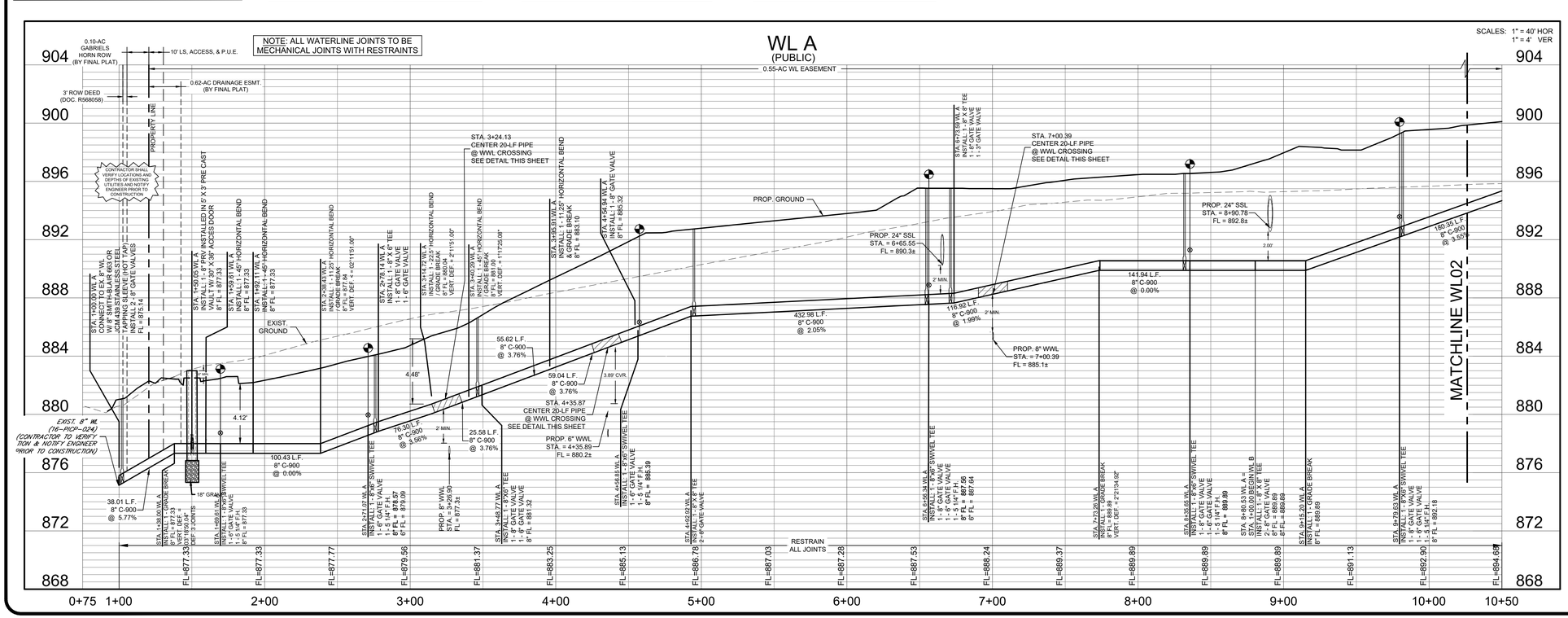

LEGEND

PROPOSED	EXISTING	
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		WASTEWATER SERVICE
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		WATER SERVICE
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Gabriels Horn - Leander
Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 1	16,500	1,660	Retail (SF)	9.94	2.21
	4,400	200	Restaurant (SF)	22.00	
Lot 2	5,000	1,660	Retail (SF)	3.01	1.19
	1,050	200	Restaurant (SF)	5.25	
Lot 3	4,920	200	Restaurant (SF)	24.6	1.83
	7,953	1,660	Retail (SF)	4.8	
Lot 4	6,700	200	Restaurant (SF)	33.5	2.06
	4,120	1,660	Retail (SF)	2.5	
Lot 5	55,882	1,660	Retail (SF)	33.7	9.09
	9,229	200	Restaurant (SF)	46.1	
	24,167	3,000	Office & Day Care(SF)	8.1	
			TOTAL	193.4	16.38

Water Flow Calculation

Peak Hour	Q = 2.2 GPM * UE =	425.6	GPM
Peak Day	Q = 1.3 GPM* UE =	251.5	GPM

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

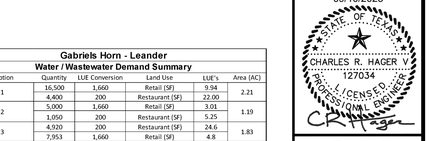
GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER LINE 'A' PLAN & PROFILE

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: A641-0401-p-wl01.dwg

09/10/2025



LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WL03

SHEET NO. 33 OF 70 SHEETS

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Last Modified: Sep. 15, 25 - 13:11
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NOTE: ALL WASTEWATER IMPROVEMENTS WITHIN THE GABRIELS HORN SUBDIVISION BOUNDARY ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE GABRIELS HORN POA.

WWL B CAPACITY CALCULATION SUMMARY

AVERAGE DRY WEATHER FLOW (gpm)
F = (270 gpd x # Units x 0.5 LUE/Unit) / 1,440

PEAK FLOW FACTOR (>= 4)
PFF = [(18+0.0206(F)$^{0.5}$)/(4+0.0206(F)$^{0.5}$)]

PEAK DRY WEATHER FLOW (gpm)
Qpdwf = PFF X F

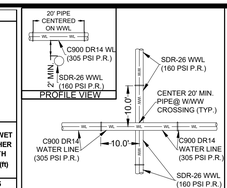
PEAK DRY WEATHER VELOCITY (ft/s)
Vpdwf > 2ft/s

INFLOW / INFILTRATION
(I/I) = 750 0.521 gpm/acre

PEAK WET WEATHER FLOW (gpm)
Qpwwf = Qpdwf + I/I

PEAK WET WEATHER VELOCITY (ft/s)
Vpwwf < 10 ft/s

WWL A STATION FROM	WWL A STATION TO	CONTIBUTING AREA (AC)	ADDED LUEs	CUM. LUEs	Manning's "n"	AVERAGE DRY WEATHER FLOW F (gpm)	PEAK FLOW FACTOR PFF (>= 4)	PEAK DRY WEATHER FLOW Qpdwf (gpm)	**PEAK DRY WEATHER FLOW Qpdwf (cfs)**	INFLOW / INFILTRATION I/I (gpm)	PEAK WET WEATHER FLOW Qpwwf (gpm)	**PEAK WET WEATHER FLOW Qpwwf (cfs)**	PIPE SIZE (IN)	PIPE SLOPE (%)	FULL FLOW CAPACITY (cfs)	**PEAK DRY WEATHER VELOCITY Vpdwf (ft/s)**	**PEAK DRY WEATHER DEPTH d_{pdwf} (ft)**	**PEAK WET WEATHER VELOCITY Vpwwf (ft/s)**	**PEAK WET WEATHER DEPTH d_{pwwf} (ft)**
END	9+11.76	0.50	8.26	8.26	0.013	1.40	4	6.12	**0.014**	0.26	6.38	**0.014**	6	2.00	0.79	**1.53**	**0.05**	**1.53**	**0.05**
9+11.76	6+76.17	1.00	0.00	8.26	0.013	1.40	4	6.12	**0.014**	0.52	6.64	**0.015**	8	1.91	1.67	**1.45**	**0.04**	**1.48**	**0.04**
6+76.17	5+35.59	1.50	42.90	51.17	0.013	8.70	4	36.23	**0.081**	0.78	37.01	**0.082**	8	0.63	0.96	**1.67**	**0.13**	**1.68**	**0.01**
5+35.59	4+51.94	2.00	0.00	51.17	0.013	8.70	4	36.23	**0.081**	1.04	37.27	**0.083**	8	1.00	1.30	**1.97**	**0.12**	**1.98**	**0.12**
4+51.94	3+42.75	3.00	35.98	87.15	0.013	14.82	4	60.38	**0.135**	1.56	61.94	**0.138**	8	1.00	1.30	**2.29**	**0.15**	**2.30**	**0.15**
3+42.75	1+00.00	5.00	0.00	87.15	0.013	14.82	4	60.38	**0.135**	2.60	62.98	**0.140**	8	0.50	0.85	**1.80**	**0.18**	**1.80**	**0.18**



6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING AT-LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217.53 (d)(7)(D).

Gabriels Horn - Leander
Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 1	16,500	1,660	Retail (SF)	9.94	2.21
	4,400	200	Restaurant (SF)	22.00	
Lot 2	5,000	1,660	Retail (SF)	3.01	1.19
	1,050	200	Restaurant (SF)	5.25	
Lot 3	4,920	200	Restaurant (SF)	24.6	1.83
	7,953	1,660	Retail (SF)	4.8	
Lot 4	6,700	200	Restaurant (SF)	33.5	2.06
	4,120	1,660	Retail (SF)	2.5	
Lot 5	55,882	1,660	Retail (SF)	33.7	9.09
	9,279	200	Restaurant (SF)	46.4	
	24,167	3,000	Office & Day Care(SF)	8.1	
			TOTAL	193.7	16.38

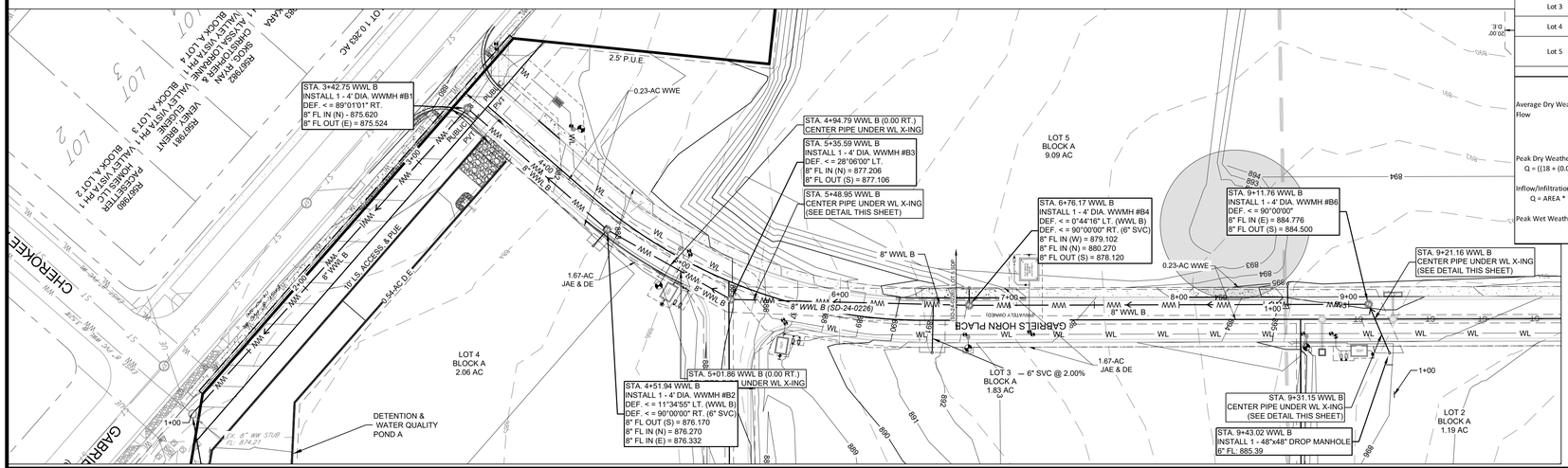
Wastewater Flow Calculation

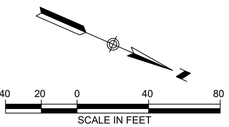
Average Dry Weather Flow
Q = 245 GPD * LUE = 47,453.9 GPD
Q =0.170 GPM * LUE = 33.0 GPM

Peak Dry Weather
Q = ((18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F = 128.6 GPM

Inflow/Infiltration
Q = AREA * 750 GPD/1440 = 16.38 acres * 0.520ft = 8.5 GPM

Peak Wet Weather
Peak Dry Weather + Inflow/Infiltration = **137.1** **GPM**





LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
WMH	WMH	WASTEWATER MANHOLE
SSMH	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE
		TREE TO REMAIN (HERITAGE)

WASTEWATER NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PER TCEQ RULES.
3. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN) COVER OVER WASTEWATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. INSTALL CLEANOUTS WITHIN GRASSED AREAS PER CITY OF AUSTIN STANDARD DETAIL NO. 520-AW-03. CLEANOUTS WITHIN PAVED AREAS SHALL BE INSTALLED PER STANDARD DETAIL NO. 520S-4-SM AND SHALL REQUIRE HEAVY DUTY TRAFFIC RATED HOUSINGS AND LIDS.
6. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE FUTURE GROUND ELEVATION. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW-511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5
7. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED .
8. WASTEWATER SERVICE IS PROVIDED BY THE CITY OF LEANDER.
9. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL WATER AND WASTEWATER CROSSINGS CONFORM TO TCEQ DESIGN CRITERIA

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WASTEWATER LINE 'B' PLAN & PROFILE
LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: A641-040\Exhibits\WW01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER
CRHager

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

WW01

SHEET NO.
34
OF 70 SHEETS

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Last Modified: Sep 15, 25 - 09:45
Plot Date/Time: Oct 01, 25 - 10:53:10

WWL A CAPACITY CALCULATION SUMMARY

AVERAGE DRY WEATHER FLOW (gpm)
F = (270 gpd x # Units x 0.5 LUE/Unit) / 1,440

PEAK FLOW FACTOR (>= 4)
$PFF = [(18+0.0206(F)^{0.5})/(4+0.0206(F)^{0.5})]$

INFLOW / INFILTRATION
(I/I) = 750 0.521 gpm/acre

PEAK DRY WEATHER FLOW (gpm)
Qpdwf = PFF X F

PEAK WET WEATHER FLOW (gpm)
Qpwwf = Qpdwf + I/I

PEAK DRY WEATHER VELOCITY (ft/s)
Vpdwf > 2ft/s

PEAK WET WEATHER VELOCITY (ft/s)
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WWL A STATION FROM	WWL A STATION TO	CONTRIB. AREA (AC)	ADDED LUEs	CUM. LUEs	Manning's "n"	AVERAGE DRY WEATHER FLOW F (gpm)	PEAK FLOW FACTOR PFF (>= 4)	PEAK DRY WEATHER FLOW Qpdwf (gpm)	PEAK DRY WEATHER FLOW Qpdwf (cfs)	INFLOW / INFILTRATION I/I (gpm)	PEAK WET WEATHER FLOW Qpwwf (gpm)	PEAK WET WEATHER FLOW Qpwwf (cfs)	PIPE SIZE (IN)	PIPE SLOPE (%)	FULL FLOW CAPACITY (cfs)	PEAK DRY WEATHER VELOCITY Vpdwf (ft/s)	PEAK DRY WEATHER DEPTH d_{pdwf} (ft)	PEAK WET WEATHER VELOCITY Vpwwf (ft/s)	PEAK WET WEATHER DEPTH d_{pwwf} (ft)
END	5+15.91	0.50	15.97	15.97	0.013	2.71	4	11.69	**0.026**	0.26	11.95	**0.027**	6	2.00	0.79	**1.86**	**0.06**	**1.88**	**0.06**
5+15.91	3+16.19	1.00	62.36	78.33	0.013	13.32	4	54.53	**0.121**	0.52	55.05	**0.123**	8	1.00	1.21	**2.22**	**0.14**	**2.23**	**0.14**
3+16.19	1+29.98	1.50	0.00	78.33	0.013	13.32	4	54.53	**0.121**	0.78	55.31	**0.123**	8	4.67	2.61	**3.81**	**0.10**	**3.83**	**0.10**
1+29.98	1+00.00	2.00	28.21	106.54	0.013	18.11	4	73.11	**0.163**	1.04	74.15	**0.165**	8	2.00	1.71	**3.09**	**0.14**	**3.10**	**0.14**

Gabriels Horn - Leander
Water / Wastewater Demand Summary

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Peak Dry Weather	Q = ((18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F =	128.6	GPM
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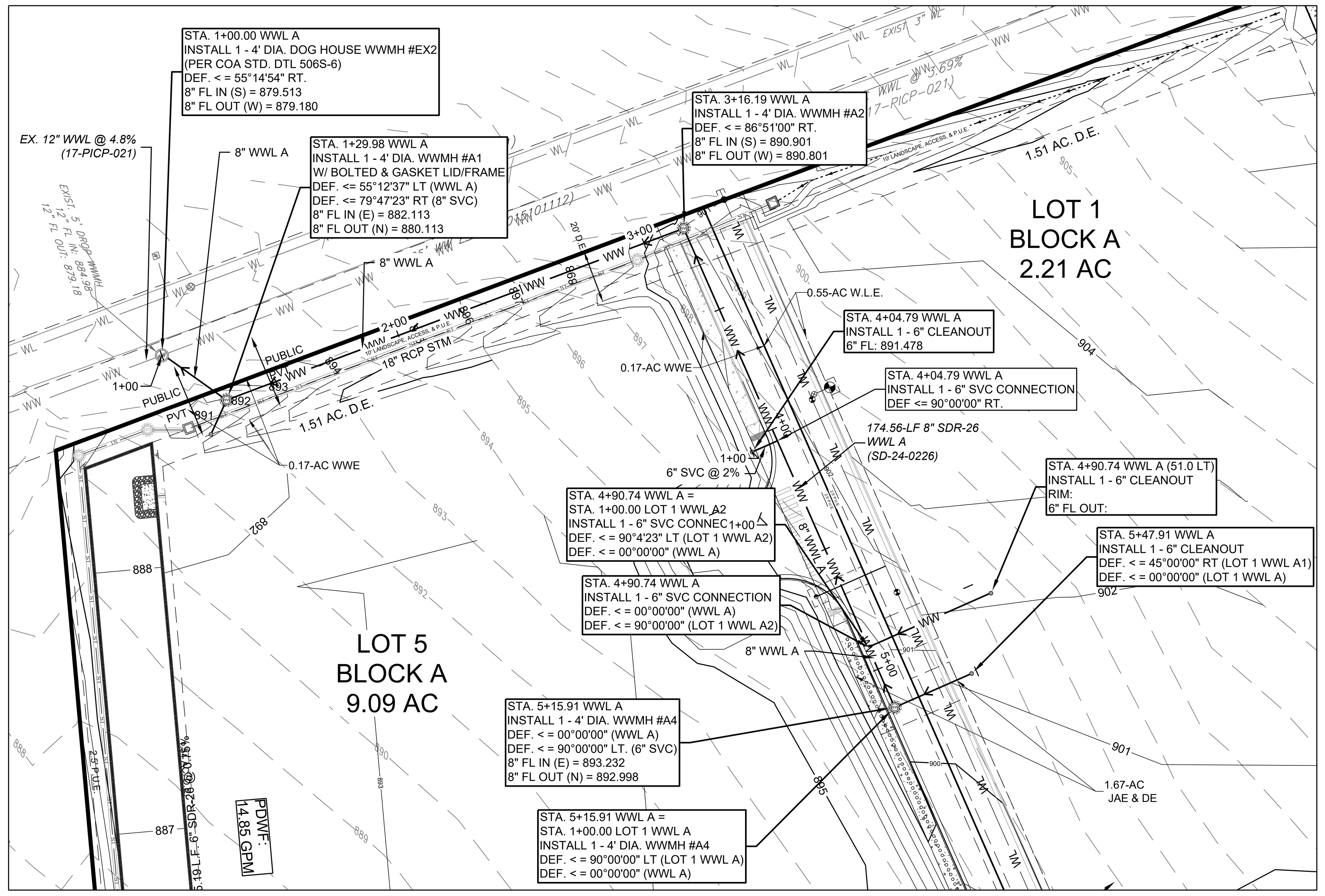
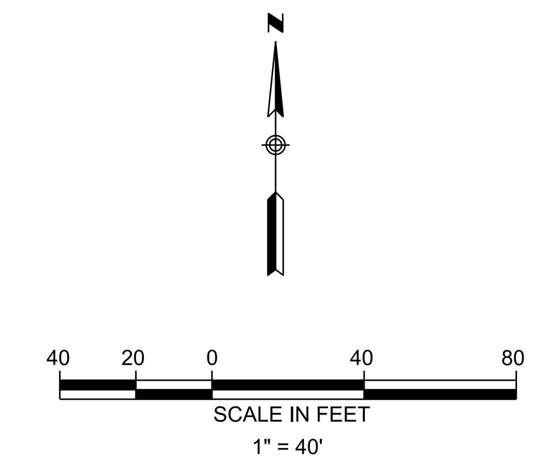
Peak Wet Weather	Peak Dry Weather + Inflow/Infiltration =	**137.1**	**GPM**



NOTE: ALL WASTEWATER IMPROVEMENTS WITHIN THE GABRIELS HORN SUBDIVISION BOUNDARY ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE GABRIELS HORN POA.



LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE
895	893	MAJOR CONTOUR
895	893	MINR CONTOUR

WASTEWATER NOTES:
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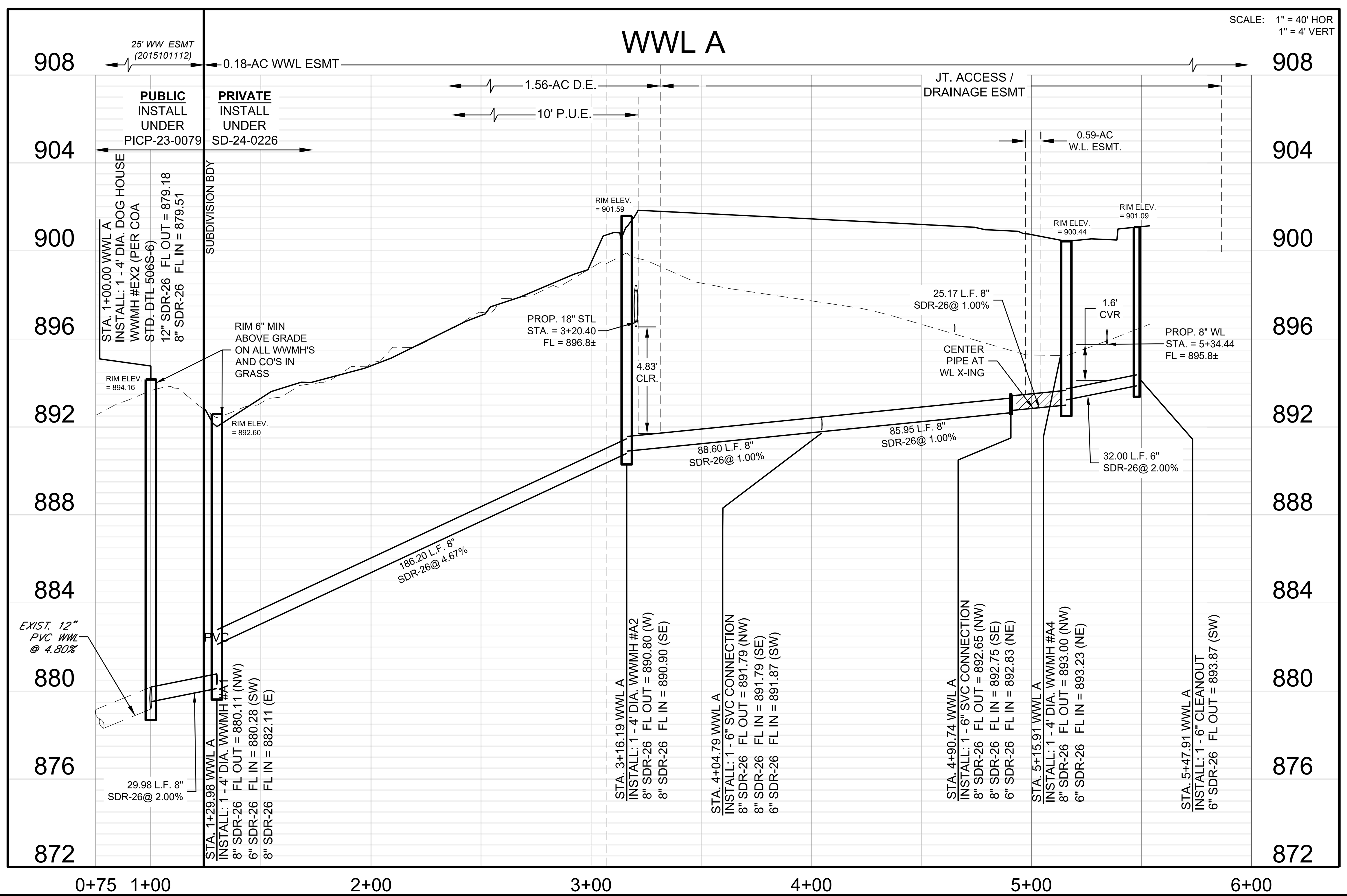

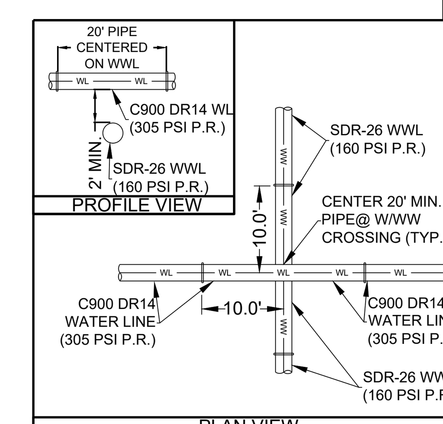

WATER & WASTEWATER X-ING DETAIL

6 INCHES TO 2 FEET OF CLEARANCE
1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
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2 FEET OR MORE OF CLEARANCE BETWEEN PIPES
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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WASTEWATER LINE 'A' PLAN & PROFILE
LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-WW01

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A641-0401

WW02

SHEET NO. 35 OF 70 SHEETS

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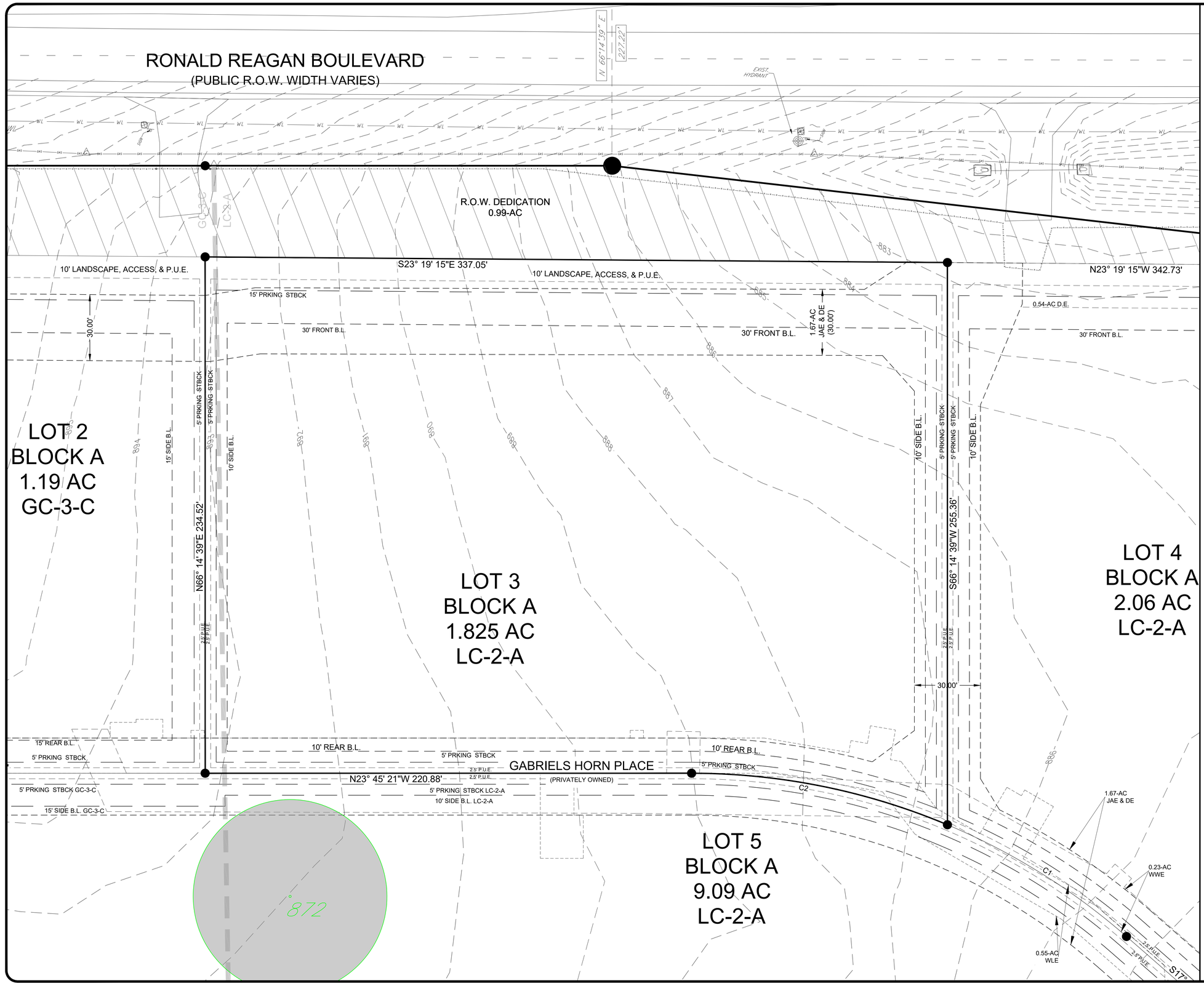

20 10 0 20 40

SCALE IN FEET
1" = 20'

LEGEND

- 667 / 670 — EXISTING CONTOUR MINOR / EXISTING CONTOUR MAJOR
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- CITY LIMITS LINE
- ZONING BOUNDARY
- ST — STORM SEWER LINE
- WW — WASTEWATER LINE
- WASTEWATER SERVICE
- WL — WATER LINE
- WATER SERVICE
- LEANDER ULT.-DEV. 100-YR ATLAS 14 FP
- LEANDER EX. 100-YR ATLAS14 FP
- CHAIN-LINK FENCE
- TREE TO BE REMOVED DURING SDP
- TREE TO REMAIN
- TREE TO REMAIN (HERITAGE)
- STREET SIGN
- 5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
- IRON ROD FOUND (AS NOTED)
- IRON PIPE FOUND (AS NOTED)
- COTTON-GIN SPINDLE FOUND
- MAG NAIL FOUND
- "X" SCRIBED IN CONCRETE

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN. AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20,2019.

TCEQ EDWARDS AQUIFER NOTE:
THIS SITE IS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

WATERSHED NOTE:
THIS SITE IS WITHIN THE SOUTH FORK SAN GABRIEL RIVER WATERSHED.

BUFFER ZONE NOTE:
THIS SUBDIVISION IS NOT SUBJECT TO CITY OF LEANDER BUFFER ZONE (DEFINED BY FEMA 100-YR FLOODPLAIN LIMITS).

TREE PROTECTION NOTES:
1. TREE REMOVAL, MITIGATION, AND OTHER APPLICABLE REQUIREMENTS FROM PICP-23-0079 & OVERALL SHARED IMPROVEMENT SDP RELATING TO THE TREES SHOWN AS REMOVED WITHIN THE SUBJECT LOT SHALL BE ADDRESSED AS PART OF THIS SITE DEVELOPMENT PROJECT. SEE LANDSCAPE SHEETS FOR TREE LIST AND MITIGATION SUMMARY REQUIRED FOR PROPOSED SITE IMPROVEMENTS.
2. TREE SURVEY PERFORMED BY WESTAR ALAMO LAND SURVEYORS, LLC DATED 3/7/2022.
3. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 EXIST. CONDITIONS &DEMOLITION PLAN

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: LOT 3-EX03

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

EX03

SHEET NO. 36 OF 70 SHEETS

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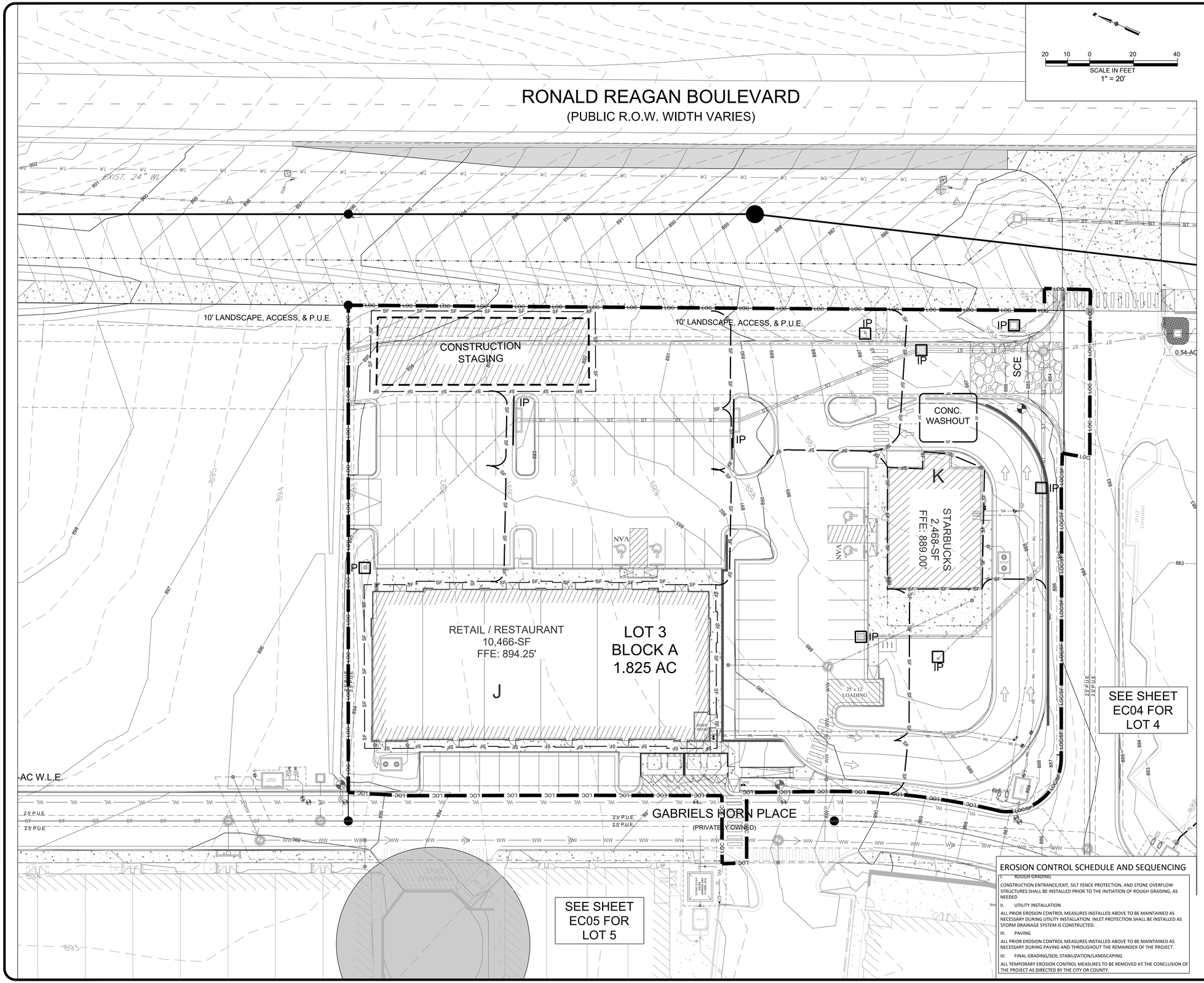

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
LOC	LOC	LIMITS OF CONSTRUCTION
SF	SF	SILT FENCE (CoA DTL. 642S-1)
LOC/SF	LOC/SF	LIMITS OF CONST./SILT FENCE (CoA DTL. 642S-1)
TP	TP	TREE PROTECTION (CoL DTL. 303-2)
IP	IP	INLET PROTECTION (GEOCURVE, SEE EC02)
RB		ROCK BERM (CoA DTL. 639S-1)
SCE		STABILIZED CONSTRUCTION ENTRANCE (CoA DTL. 641S-1)
CONSTRUCTION STAGING		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
CONC. WASHOUT		CONCRETE WASHOUT (CoL DTL. 303-1)
		TREE TO REMAIN / TREE PROTECTION (CoL DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

NOTES:
1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLALIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5.1)
2. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT HAVE MIGRATED ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION AND SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. CONTRACTOR SHALL MAINTAIN THE DE-WATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DE-WATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DE-WATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
7. ALL DISTURBED AREAS OUTSIDE OF IMPERVIOUS COVER AND RIPRAP IMPROVEMENTS ARE TO BE PERMANENTLY SEEDED AND STABILIZED ONCE CONSTRUCTION OF THE AREA IS COMPLETE.

SPOILS STAGING NOTES:
ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT, AND CONTRACTOR STAGING AREAS.

CONSTRUCTION SEQUENCE
1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING.
5. ROUGH GRADE STREETS.
6. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
7. DELIVER STORM SEWER CUT SHEETS TO THE CITY OF LEANDER.
8. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE DISTURBED AREA AS MUCH AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
9. DELIVER FINAL GRADE CUT SHEETS TO THE CITY OF LEANDER.
10. REGRADE STREETS TO SUBGRADE.
11. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
12. INSTALL CURB AND GUTTER.
13. LAY FINAL BASE COURSE ON ALL STREETS.
14. LAY ASPHALT.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITH THE R.O.W.
16. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
17. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 16.

NOTE: ROUGH GRADING ONLY - STEPS 1 THROUGH 3 ONLY.
ROUGH GRADING AND UTILITIES ONLY - STEPS 1 THROUGH 4 ONLY.
FULL DEVELOPMENT PERMIT - ENTIRE SEQUENCING

CLEARING AND GRUBBING UNDER A DEVELOPMENT PERMIT, SOLELY FOR THE PURPOSE OF SURVEYING AND SOIL EXPLORATION, SHALL BE HANDCUTTING OR BLADE-UP OPERATION.

EROSION CONTROL SCHEDULE AND SEQUENCING

I. ROUGH GRADING

CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED

II. UTILITY INSTALLATION

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.

III. PAVING

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.

IV. FINAL GRADING/SOIL STABILIZATION/LANDSCAPING

ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OR COUNTY.

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 EROSION & SEDIMENTATION CONTROL PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: LOT 3-EC03

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
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Phone 512.439.4700
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JOB NUMBER: A4971

EC03

SHEET NO. 37 OF 70 SHEETS

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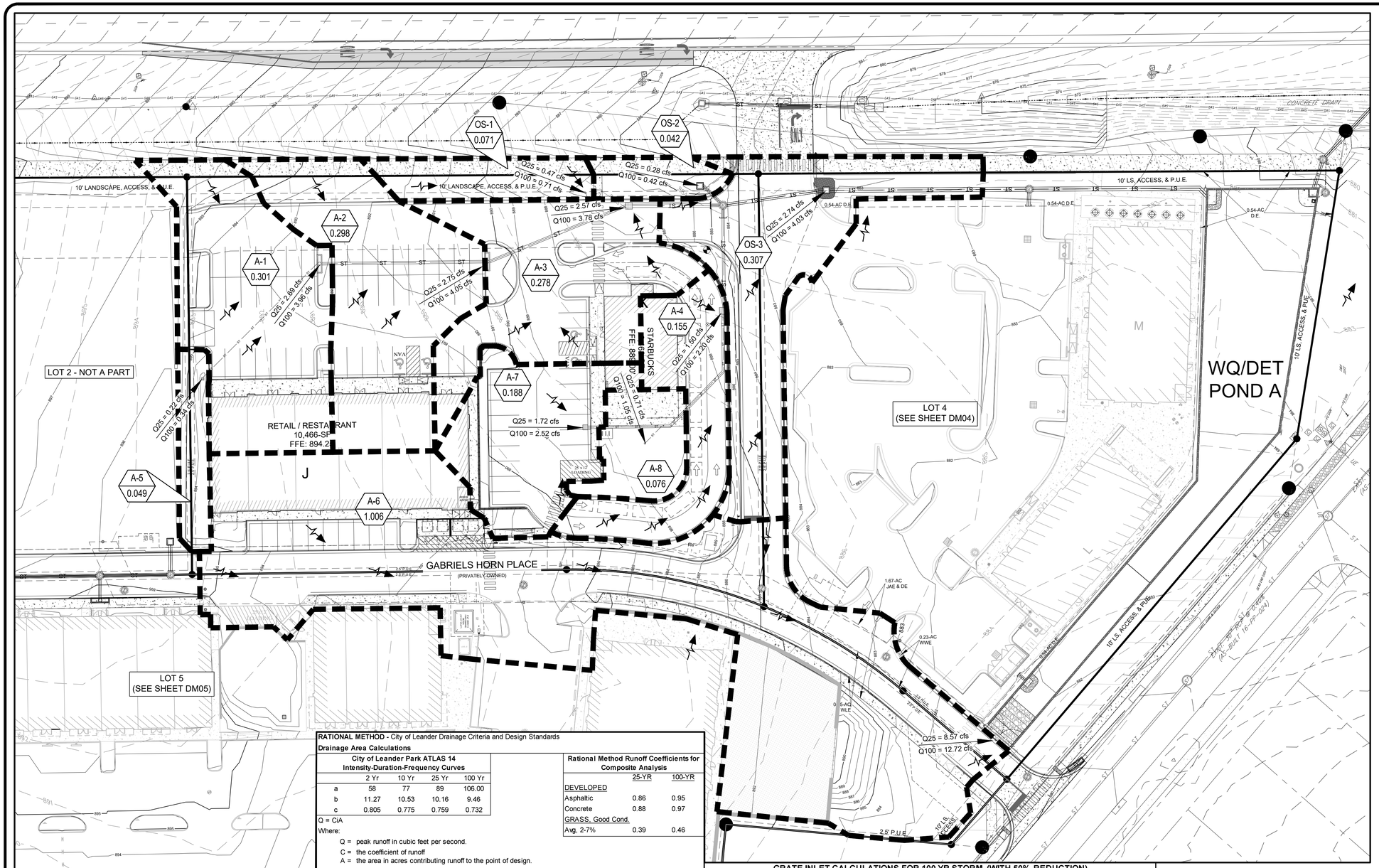

30 15 0 30 60

SCALE IN FEET
1" = 30'

LEGEND

- OS-A1 / 7.08Z / 2.60% 'C' — DRAINAGE AREA NUMBER AND ACREAGE
- DRAINAGE AREA
- PROPERTY LINE
- TC PATH
- XXX' LF SFY @ X.XX% — SHEET FLOW
- XXX' LF SCF @ X.XX% — SHALLOW CONCENTRATED FLOW
- FLOW DIRECTION ARROW

RATIONAL METHOD - City of Leander Drainage Criteria and Design Standards

Drainage Area Calculations

City of Leander Park ATLAS 14 Intensity-Duration-Frequency Curves

	2 Yr	10 Yr	25 Yr	100 Yr
a	58	77	89	106.00
b	11.27	10.53	10.16	9.46
c	0.805	0.775	0.759	0.732

Rational Method Runoff Coefficients for Composite Analysis

	25-YR	100-YR
DEVELOPED		
Asphaltic	0.86	0.95
Concrete	0.88	0.97
GRASS, Good Cond.		
Avg, 2-7%	0.39	0.46

Q = CiA

Where:

Q = peak runoff in cubic feet per second.
C = the coefficient of runoff
A = the area in acres contributing runoff to the point of design.
i = the average intensity of rainfall in inches per hour

$i = a/(t+b)^c$

Where,

t = Time of concentration for the entire drainage area of interest

T(sht flow) = $Ln/(42s^{0.5})$ T(shallow concentrated flow) = $Ln/(60s^{0.5})$

where,

L = Length of the reach in ft.
n = Manning's n
s = Slope of the ground in ft/ft

Developed Conditions Drainage Calculations (Site Calculations)

DRAINAGE AREA	AREA (AC)	PERV. (AC)	IMP. (AC)	C25	C100	ToC (min.)	I25	I100	Q25 (cfs)	Q100 (cfs)
A-1	0.301	0.045	0.256	0.789	0.876	5	11.30	15.00	2.69	3.96
A-2	0.298	0.027	0.271	0.817	0.905	5	11.30	15.00	2.75	4.05
A-3	0.278	0.025	0.253	0.818	0.906	5	11.30	15.00	2.57	3.78
A-4	0.155	0.002	0.153	0.854	0.943	5	11.30	15.00	1.50	2.20
A-5	0.049	0.049	0.000	0.390	0.460	5	11.30	15.00	0.22	0.34
A-6	1.006	0.362	0.717	0.754	0.843	5	11.30	15.00	8.57	12.72
A-7	0.188	0.021	0.167	0.807	0.895	5	11.30	15.00	1.72	2.52
A-8	0.076	0.005	0.071	0.829	0.918	5	11.30	15.00	0.71	1.05
OS-1	0.071	0.041	0.030	0.587	0.665	5	11.30	15.00	0.47	0.71
OS-2	0.042	0.023	0.018	0.598	0.677	5	11.30	15.00	0.28	0.42
OS-3	0.307	0.046	0.261	0.790	0.877	5	11.30	15.00	2.74	4.03

GRATE INLET CALCULATIONS FOR 100 YR STORM (WITH 50% REDUCTION)

MODELED AS AN ORIFICE $Q=C_0 A_G (2 g d)^{.5}$, C_0 =0.67

MODELED AS A WEIR $Q=C_w P d^{1.5}$, Cw =3.0

AREA #	Q100 (CFS)	Flow Area (Sq. In.)	Inlet Size	A (SF)	A x 50% (SF)	P (FT)	$d_{ORIFICE}$ (FT)	d_{WEIR} (FT)	d_{allow} (FT)	Is $d_{orifice}$ and/or $d_{weir} > d_{allow}$?
A-3	3.78	972	**36"x36"**	9.00	4.50	12.00	0.02	0.22	0.50	NO
A-4	2.20	972	**36"x36"**	9.00	4.50	12.00	0.01	0.16	0.50	NO
A-5	0.34	243	**18"x18"**	2.25	1.13	16.00	0.00	0.04	0.50	NO
A-7	2.52	972	**36"x36"**	9.00	4.50	12.00	0.01	0.17	0.50	NO
A-8	1.05	113	**12"x12"**	0.78	0.39	4.00	0.25	0.20	0.50	NO
OS-1	0.71	113	**12"x12"**	0.78	0.39	4.00	0.11	0.15	0.50	NO
OS-2	0.42	1728	**48"x48"**	12.00	6.00	16.00	0.00	0.04	0.50	NO
OS-3	4.03	1728	**48"x48"**	12.00	6.00	16.00	0.02	0.19	0.50	NO

SUMP INLET CALCULATIONS FOR 100YR STORM

Weir Equation $Q = C_w h^{1.5} L$

C_w = 3.0

If $h_{weir} > 0.5$, use orifice equation

$Q=C_0 A_G (2 g d)^{.5}$, C_0 =0.67, A_G = Lx6"/12

Note: Per Standard Curb Inlet Detail, Curb Inlets have 6" depression from the curb gutter with a distance of 11.75" from the lip to top of curb (h_{allow}). The inlet opening has a height of 6". The centroid of the inlet opening is 3" above the inlet lip.

					WEIR CALC		ORIFICE CALC			
INLET NO.	FLOW (CFS)	Q_{BYPASS} (CFS)	Q_{TOTAL} (CFS)	L (FT)	Q/L or A (CFS/LF)	h_{weir}(FT) (a+Yo)	A_g (SF)	$h_{orifice}$ (FT)	h_{allow} (FT)	INLET TYPE
A-1	3.96	0.0	3.96	9.0	0.44	0.28	4.50	0.28	0.98	10' Curb Inlet
A-2	4.05	0.0	4.05	9.0	0.45	0.28	4.50	0.28	0.98	10' Curb Inlet

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 ONSITE DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: LOT 3-DM03

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
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JOB NUMBER: A4971

DM03

SHEET NO. 38 OF 70 SHEETS

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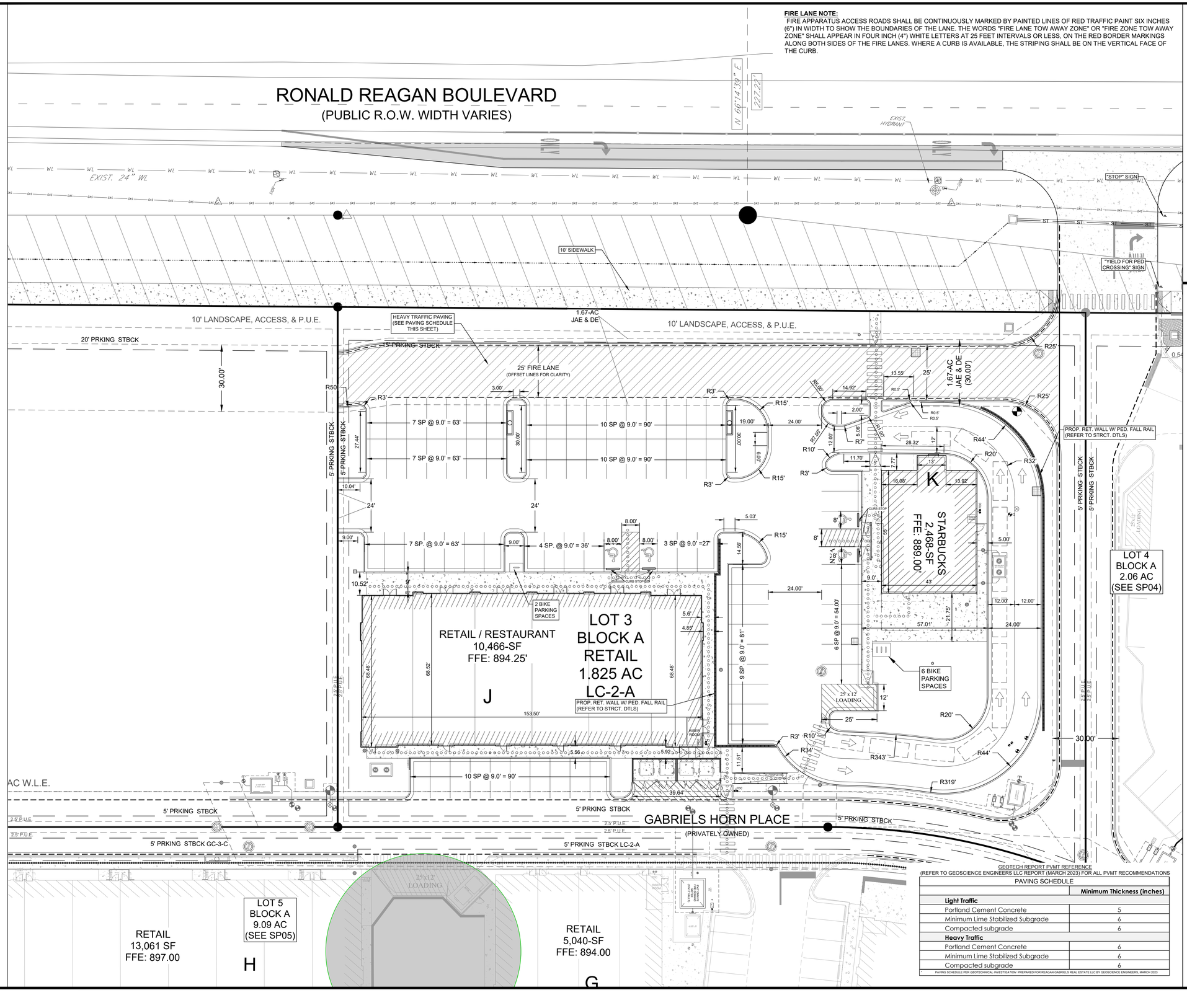

FIRE LANE NOTE:
FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE TOW AWAY ZONE" OR "FIRE ZONE TOW AWAY ZONE" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET INTERVALS OR LESS, ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.

20 10 0 20 40
SCALE IN FEET
1" = 20'

LEGEND

- EXISTING CONTOUR MINOR (667)
- EXISTING CONTOUR MAJOR (670)
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WQZ WATER QUALITY / BUFFER ZONE
- ST STORM SEWER LINE
- WW WASTEWATER LINE
- WASTEWATER SERVICE
- WL WATER LINE
- WATER SERVICE
- R.O.W. DEDICATION (EXISTING / NEW)
- ADA ACCESIBLE ROUTE
- FIRE LANE
- TREE TO REMAIN
- HEAVY TRAFFIC PAVING

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

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LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL, L.P. TO REAGAN GABRIELS REAL ESTATE, L.L.C. DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C.)

ACCESS NOTES:
1. MINIMUM DRIVEWAY SPACING IS 75' FOR ALL PROPOSED DRIVEWAYS (COA TRANSPORTATION MANUAL SEC. 5.3.2 TABLE 5-2 MINIMUM FOR COMMERCIAL COLLECTORS).
2. PROPOSED DRIVEWAYS REQUIRE 200' SIGHT DISTANCE (COA TRANSPORTATION MANUAL SEC. 1.3.1 TABLE 5-2 MINIMUM FOR 2-3 LANE STREETS).

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20, 2019.

LEGAL DESCRIPTION:
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GENERAL PUBLIC NOTES:
HOURS OF OPERATION TO THE GENERAL PUBLIC TO BE BETWEEN 5:00 AM AND 10:00 PM SUNDAY THROUGH THURSDAY, AND 5:00 AM TO 11:00 PM FRIDAY AND SATURDAY.

INTENDED USES:
THIS LOT IS INTENDED FOR COMMERCIAL RETAIL AND RESTAURANT USES. 4,194 SF ARE INTENDED AS RESTAURANT USE AND 8,701 SF IS INTENDED AS RETAIL USE.

GEOTECH REPORT PVMT REFERENCE
(REFER TO GEOSCIENCE ENGINEERS LLC REPORT (MARCH 2023) FOR ALL PVMT RECOMMENDATIONS

PAVING SCHEDULE	
	Minimum Thickness (inches)
Light Traffic	
Portland Cement Concrete	5
Minimum Lime Stabilized Subgrade	6
Compacted subgrade	6
Heavy Traffic	
Portland Cement Concrete	6
Minimum Lime Stabilized Subgrade	6
Compacted subgrade	6

* PAVING SCHEDULE PER GEOTECHNICAL INVESTIGATION PREPARED FOR REAGAN GABRIELS REAL ESTATE LLC BY GEOSCIENCE ENGINEERS, MARCH 2023

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 DETAILED SITE PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: LOT 3.dwg

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

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Plot Date/Time: Oct. 01, 25 - 15:38:09

TH VARIES)

(PUBLIC R.O.W. W

EXIST. 24" WL

EXIST. HYDRANT

10' LANDSCAPE, ACCESS, & P.U.E.

10' LANDSCAPE, ACCESS, & P.U.E.

1.67-AC
JAE & DE

0.54-AC

LOT 4
(SEE SHEET
GP04)

LOT 2
BLOCK A
1.19 AC
GC-3-C

RETAIL / RESTAURANT
10,466-SF
FFE: 894.25'

LOT 3
BLOCK A
1.825 AC
LC-2-A

J

STARBUCKS
2,468-SF
FFE: 889.00'

K

1.67-AC
JAE & DE

2.5' P.U.E.

2.5' P.U.E.

INSET A
1" = 10'

RISER
ROOM

FDC

INSET A

GABRIELS HORN PLACE
(PRIVATELY OWNED)

0.55-AC W.L.E.

2.5' P.U.E.

2.5' P.U.E.

0.23-AC WWE

1.67-AC
JAE & DE

0.55-AC W.L.E.

RETAIL
5,040-SF
FFE: 894.00

G

LOT 5
(SEE SHEET
GP05.1-GP05.4)

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

20 10 0 20 40
SCALE IN FEET
1" = 20'

LEGEND

PROPOSED	EXISTING	
800	800	MAJOR CONTOURS
800	800	MINOR CONTOURS
		PROPOSED RETAINING WALL
		ACCESSIBLE ROUTE
x 100.00		TOP OF PAVEMENT
x 100.00 TC		TOP OF CURB/CONCRETE
x 100.00 TG		TOP OF GRATE
x 100.00 LP		LOW POINT
x 100.00 HP		HIGH POINT
x 100.00 FS		FINISHED SLAB
x 100.00 TW		TOP OF WALL
x 100.00 BW		BOTTOM OF WALL
x 100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		COTTON SPINDLE WITH CHAPARRAL WASHER SET
	W	WATER METER
		UTILITY POLE
OU	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
O	O	CHAIN LINK FENCE

NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
3. ALL SIDEWALKS SHALL BE 6' WIDE. ALL TRAILS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 GRADING PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: LOT 3-GP03

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

SHEET NO. GP03

40 OF 70 SHEETS

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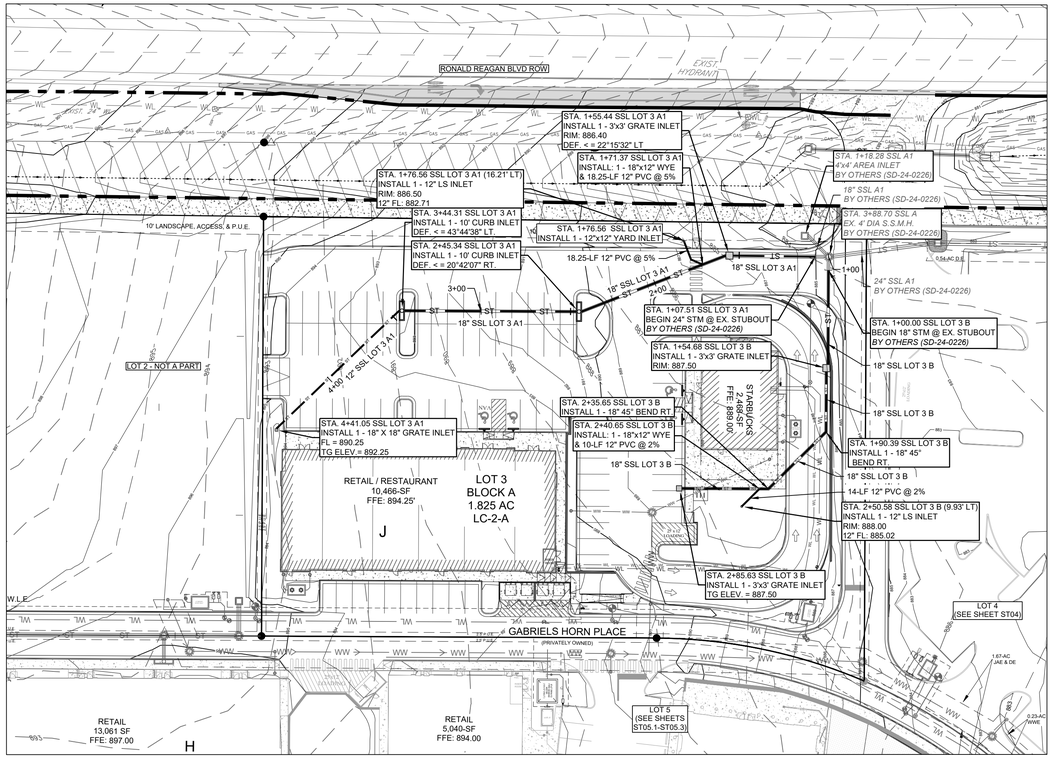
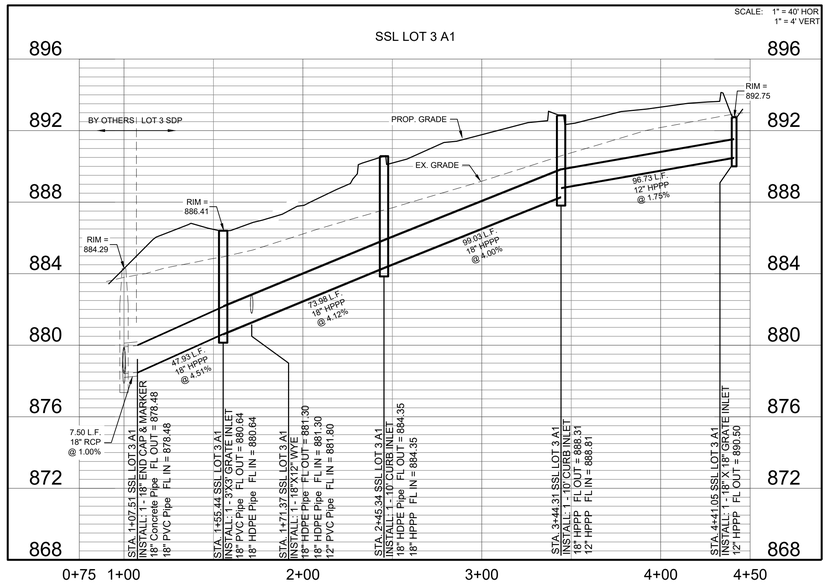
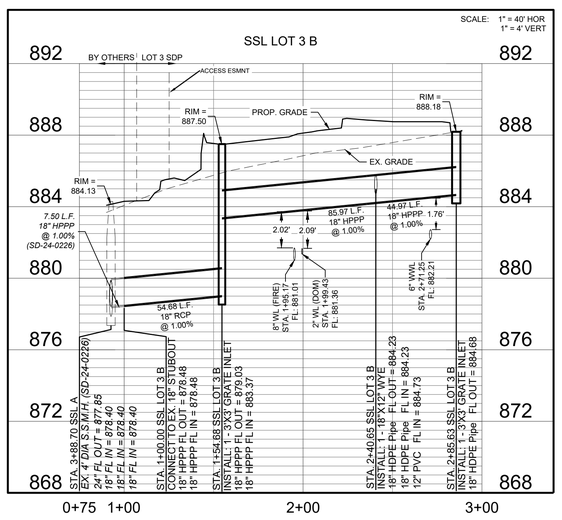
Last Modified: Sep. 15, 25 - 09:46
Plot Date/Time: Oct. 01, 25 - 15:59:50







40 20 0 40 80

SCALE IN FEET
1" = 40'

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
•		WASTEWATER SERVICE
WL	WL	WATER LINE
□		WATER SERVICE
	⊗	WATER VALVE
		FIRE HYDRANT
(W)	WWMH	WASTEWATER MANHOLE
(ST)	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
	●	1/2" REBAR FOUND (OR AS NOTED)
	●	1/2" REBAR WITH CAP FOUND
	●	1/2" REBAR WITH CHAPARRAL CAP SET
⊠		WATER METER
	⌀	UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE RCP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
4. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF LEANDER SPECIFICATIONS.
5. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 STORMSEWER PLAN AND PROFILE

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: LOT 3 ST03

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

ST03

SHEET NO. 41
OF 70 SHEETS

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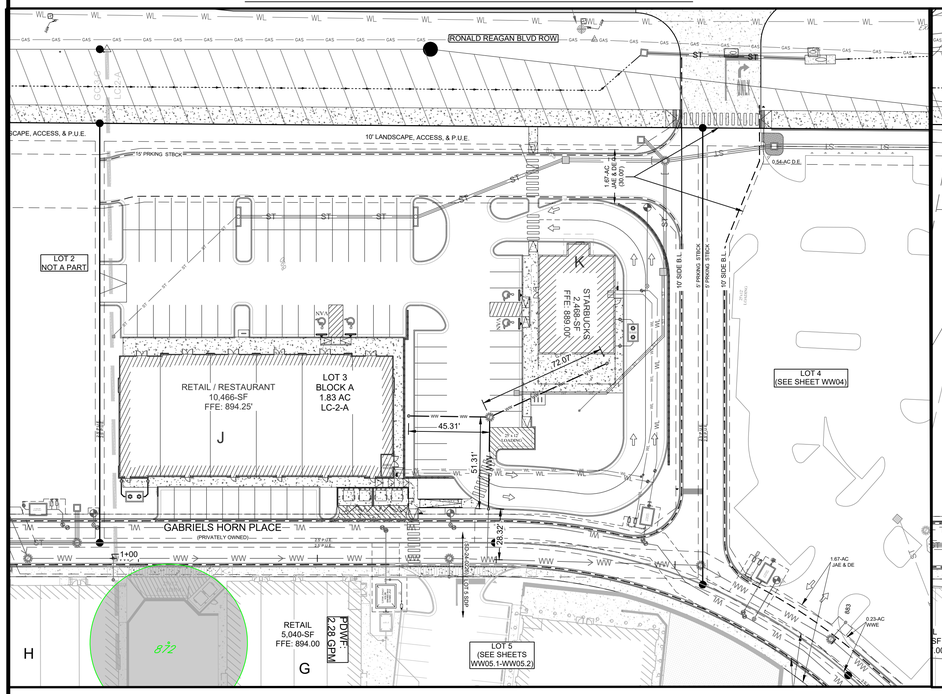
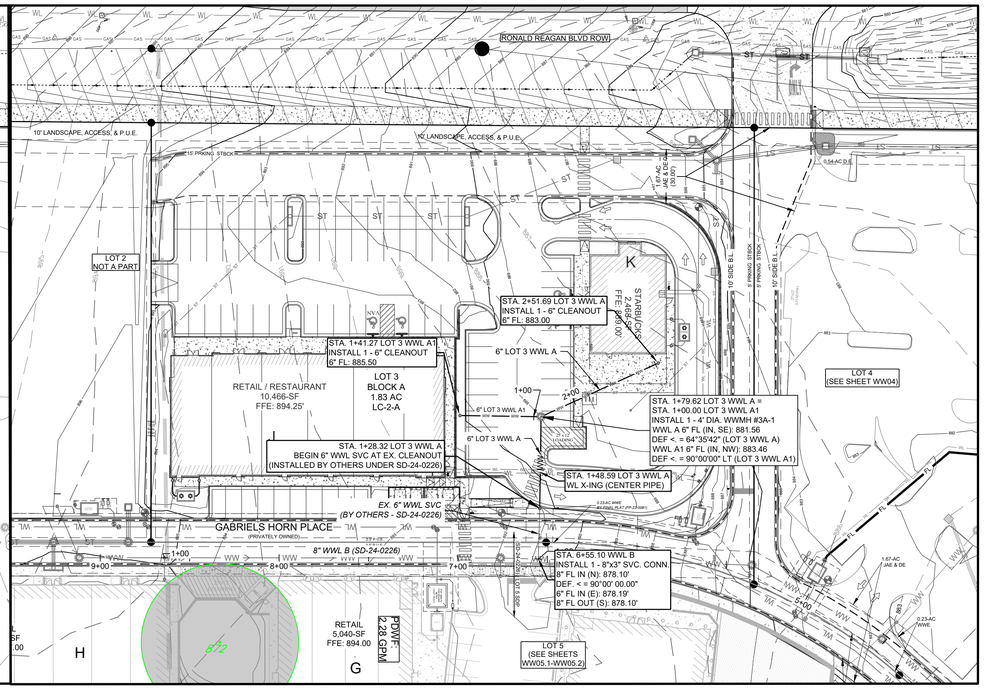
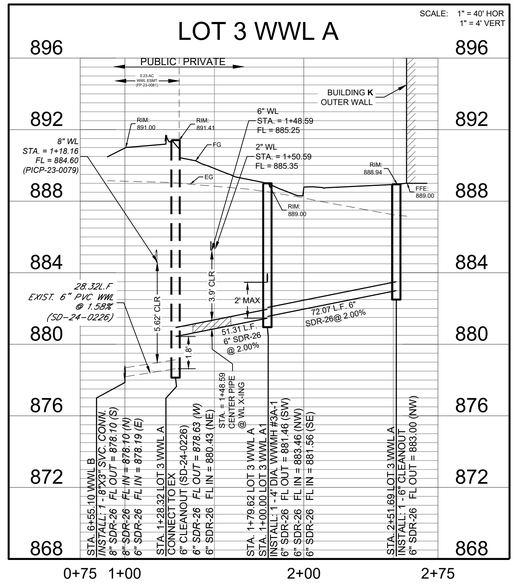
Last Modified: Sep. 15, 25 - 09:46
Plot Date/Time: Oct. 01, 25 - 16:01:46

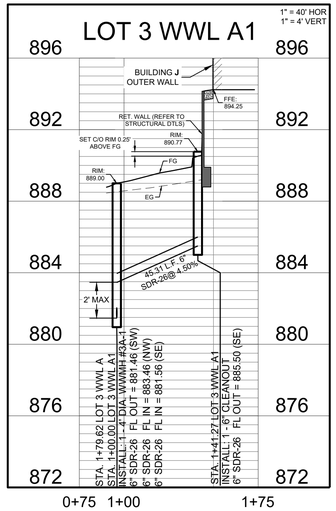
WASTEWATER LINE DIMENSIONAL CONTROL PLAN

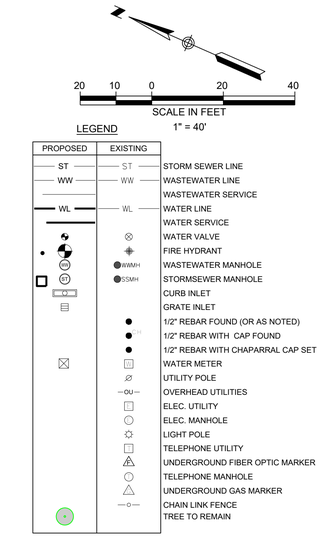


WASTE WATER LINE STRUCTURES



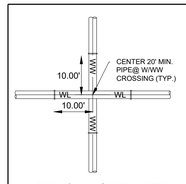






UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER UTILITY & STORM LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
4. WASTEWATER SERVICE IS PROVIDED BY THE CITY OF LEANDER.
5. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL WATER AND WASTEWATER CROSSINGS CONFORM TO TCEQ DESIGN CRITERIA.
6. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PER TCEQ RULES.
7. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 (160 MIN. PSI) UNLESS OTHERWISE NOTED.
8. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. INSTALL CLEANOUTS WITHIN GRASSED AREAS PER CITY OF AUSTIN STANDARD DETAIL NO. 520-AW-03. CLEANOUTS WITHIN PAVED AREAS SHALL BE INSTALLED PER STANDARD DETAIL NO. 520S-4-SM AND SHALL REQUIRE HEAVY DUTY TRAFFIC RATED HOUSINGS AND LIDS.
9. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE PROP. GROUND ELEVATION.



WATER & WASTEWATER CROSSING DETAIL

6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217 (7)(D).

Gabriels Horn Development - Lot 3 - Block A
Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 2	8,701	1,660	Retail (SF)	5.2	1.83
	4,194	200	Restaurant (SF)	21.0	
			TOTAL	**26**	**1.83**

Wastewater Flow Calculation

Average Dry Weather Flow
Q = 245 GPD * LUE = 6,421.8 GPD
Q =0.170 GPM * LUE = 4.5 GPM

Peak Dry Weather
(18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F = 19.0 GPM

Inflow/Infiltration
AREA * 750 GPD/1440 = 119.19 acres * 0.5208 = 1.0 GPM

Peak Wet Weather
Peak Dry Weather + Inflow/Infiltration = **19.9 GPM**

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 WASTEWATER PLAN AND PROFILE

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: LOT 3-WW03

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1366

JOB NUMBER: A4971

WW03

SHEET NO. 42 OF 70 SHEETS

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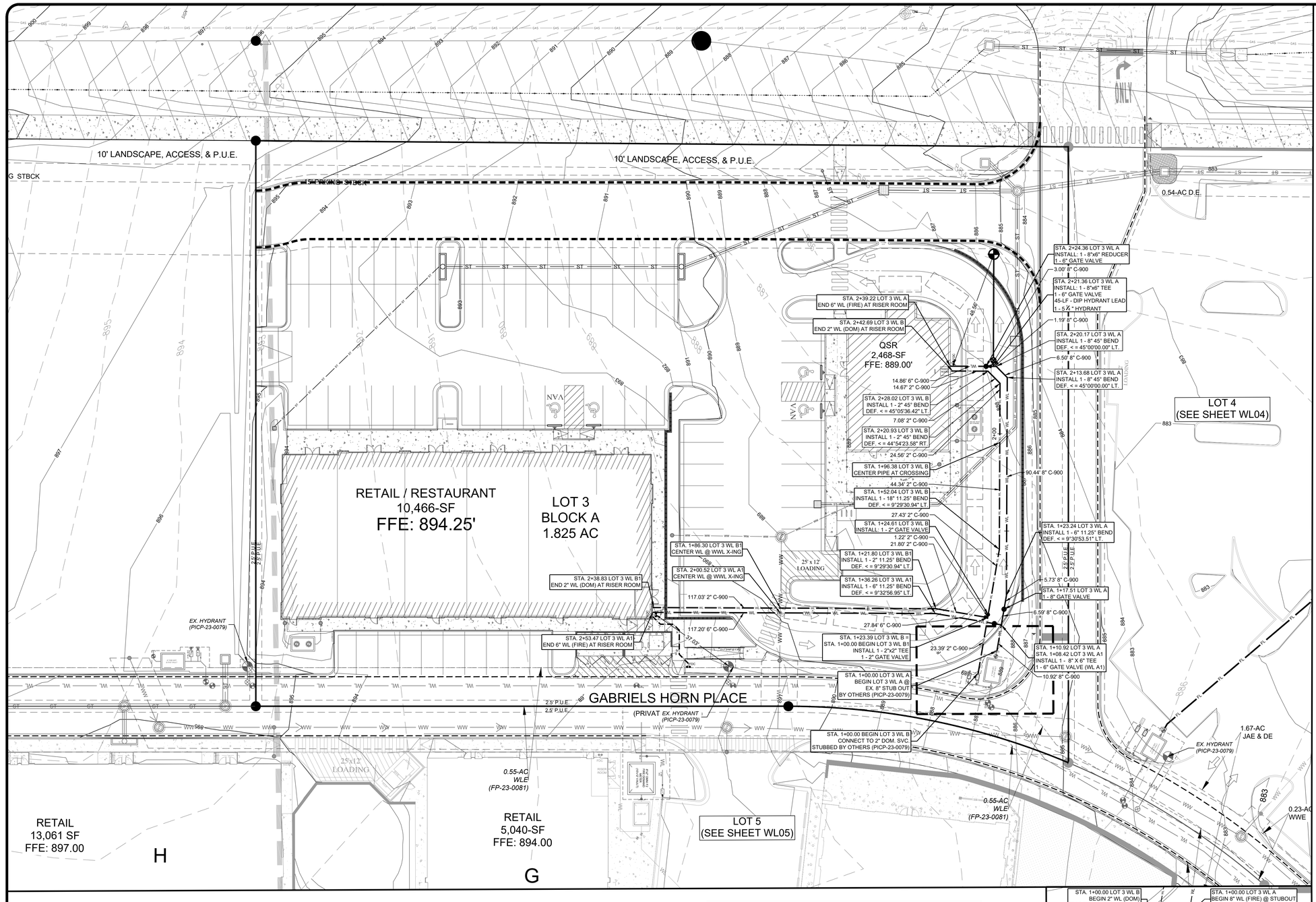
User: cmillen
Last Modified: Sep 15, 25 - 09:45
Plot Date/Time: Oct 01, 25 - 16:03:29

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 3 WATERLINE PLAN



20 10 0 20 40
SCALE IN FEET
1" = 20'

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
		WASTEWATER MANHOLE
		STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
	O	CHAIN LINK FENCE

WATER NOTES:
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. ALL POTABLE WATER LINES SHALL BE DR-14 C-900 PVC. FIRE HYDRANT LEADS SHALL BE CLASS 350 DUCTILE IRON.
3. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER WATER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
4. N0. 10 SOLID COPPER WIRE SHALL BE INSTALLED AS TRACER WIRE ABOVE ALL NONMETALLIC WATER LINES
5. ALL SERVICE LINES SHALL INCLUDE GATE VALVE AT MAIN LINE.
6. THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH LEANDER FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE.
7. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED.
8. TAPPING SLEEVES TO BE SMITH-BLAIR 663 OR JCM 439 ALL STAINLESS TAPPING SLEEVES.
9. WATER SERVICE IS PROVIDED BY THE CITY OF LEANDER

K. FRIESE MODELING RESULTS
LOT 3
MIN. PRESSURE = 123 PSI (1,176 HGL)
MAX. PRESSURE = 136 psi (1,206 HGL)
Fire flow available = 4,000 gpm at 35 psi residual

CITY OF LEANDER APPROVAL

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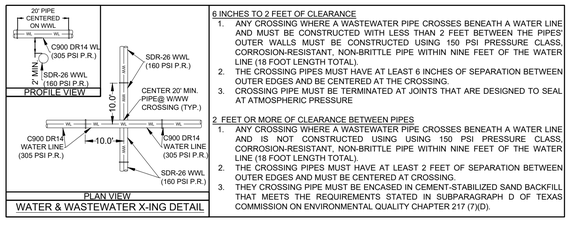

6 INCHES TO 2 FEET OF CLEARANCE
1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
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2 FEET OR MORE OF CLEARANCE BETWEEN PIPES
1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
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Gabriels Horn Development - Lot 3 - Block A
Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 3	8,701	1,660	Retail (SF)	5.2	1.83
	4,194	200	Restaurant (SF)	21.0	
			TOTAL	26	1.83

Water Flow Calculation

Peak Hour	Q = 2.2 GPM * LUE =	57.7	GPM
Peak Day	Q = 1.3 GPM* LUE =	34.1	GPM

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY:
DRAWING NAME: LOT 3 WL03

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building I, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WL03

SHEET NO. 43 OF 70 SHEETS

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User: chollen
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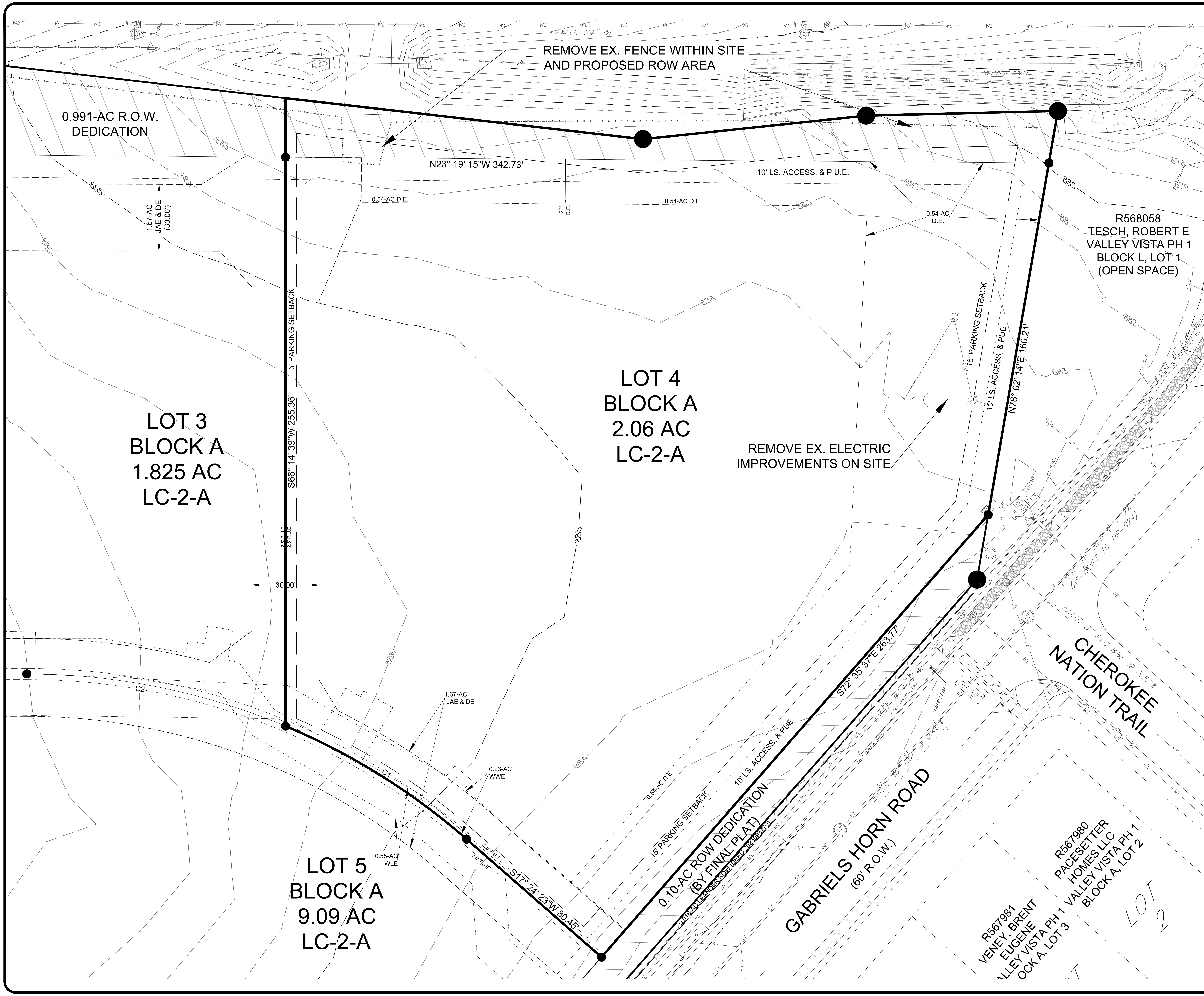
Plot Date/Time: Oct. 01, 25 - 16:04:47



SCALE IN FEET (20 10 0 20 40)

LEGEND

667	EXISTING CONTOUR MINOR
670	EXISTING CONTOUR MAJOR
	PROPERTY LINE
	EASEMENT LINE
	SETBACK LINE
	DRAINAGE CENTERLINE
	CITY LIMITS LINE
	ZONING BOUNDARY
ST	STORM SEWER LINE
WW	WASTEWATER LINE
	WASTEWATER SERVICE
WL	WATER LINE
	WATER SERVICE
	LEANDER ULT.-DEV. 100-YR ATLAS 14 FP
	LEANDER EX. 100-YR ATLAS14 FP
X	CHAIN-LINK FENCE
	TREE TO BE REMOVED DURING SDP
	TREE TO REMAIN
	TREE TO REMAIN (HERITAGE)
	STREET SIGN
	5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
	IRON ROD FOUND (AS NOTED)
	IRON PIPE FOUND (AS NOTED)
	COTTON-GIN SPINDLE FOUND
	MAG NAIL FOUND
	"X" SCRIBED IN CONCRETE

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN. AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20,2019.

TCEQ EDWARDS AQUIFER NOTE:
THIS SITE IS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

WATERSHED NOTE:
THIS SITE IS WITHIN THE SOUTH FORK SAN GABRIEL RIVER WATERSHED.

BUFFER ZONE NOTE:
THIS SUBDIVISION IS NOT SUBJECT TO CITY OF LEANDER BUFFER ZONE (DEFINED BY FEMA 100-YR FLOODPLAIN LIMITS).

TREE PROTECTION NOTES:
1. TREE REMOVAL, MITIGATION, AND OTHER APPLICABLE REQUIREMENTS FROM PICP-23-0079 & OVERALL SHARED IMPROVEMENT SDP RELATING TO THE TREES SHOWN AS REMOVED WITHIN THE SUBJECT LOT SHALL BE ADDRESSED AS PART OF THIS SITE DEVELOPMENT PROJECT. SEE LANDSCAPE SHEETS FOR TREE LIST AND MITIGATION SUMMARY REQUIRED FOR PROPOSED SITE IMPROVEMENTS.
2. TREE SURVEY PERFORMED BY WESTAR ALAMO LAND SURVEYORS, LLC DATED 3/7/2022.
3. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

TREE NOTE:
ALL TREES ON LOT 4 ARE BEING REMOVED UNDER PERMIT NO. SD-24-0226 AND BEING MITIGATED FOR WITH THAT PERMIT, THEREFORE NO TREE MITIGATION OR PROTECTION IS REQUIRED.

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 EXIST. CONDITIONS & DEMOLITION PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-EX04

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

EX04

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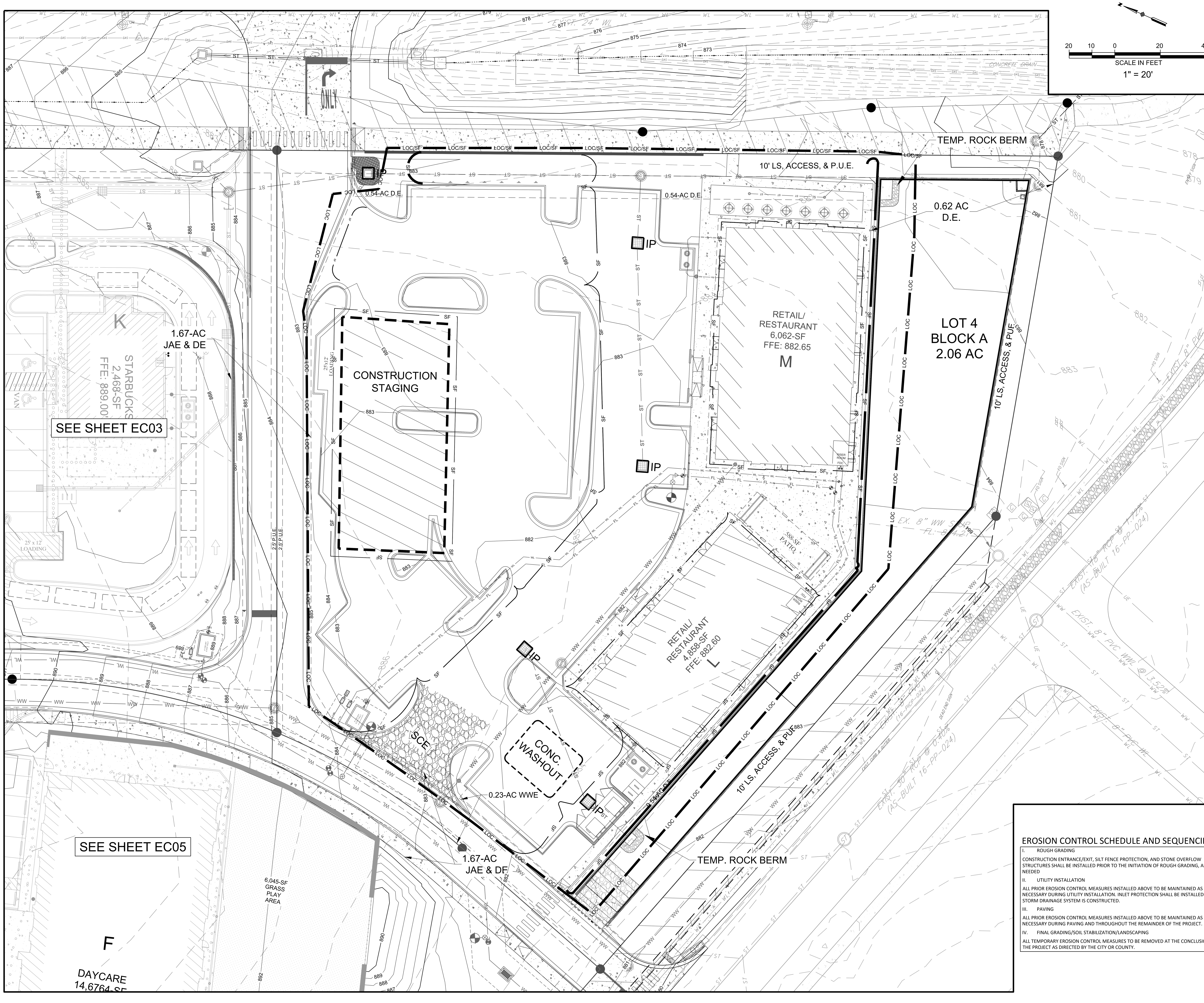

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE (CoA DTL. 642S-1)
LOC/SF		LIMITS OF CONST./SILT FENCE (CoA DTL. 642S-1)
TP		TREE PROTECTION (CoL DTL. 303-2)
IP		INLET PROTECTION (GEOCURVE, SEE EC02)
RB		ROCK BERM (CoA DTL. 639S-1)
SCE		STABILIZED CONSTRUCTION ENTRANCE (CoA DTL. 641S-1)
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
CONC. WASHOUT		CONCRETE WASHOUT (CoL DTL. 303-1)
	TP	TREE TO REMAIN / TREE PROTECTION (CoL DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

NOTES:
1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLALIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5,1)
2. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT HAVE MIGRATED ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION AND SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. CONTRACTOR SHALL MAINTAIN THE DE-WATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DE-WATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DE-WATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
7. ALL DISTURBED AREAS OUTSIDE OF IMPERVIOUS COVER AND RIPRAP IMPROVEMENTS ARE TO BE PERMANENTLY SEEDED AND STABILIZED ONCE CONSTRUCTION OF THE AREA IS COMPLETE.

SPOILS STAGING NOTES:
ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT, AND CONTRACTOR STAGING AREAS.

CONSTRUCTION SEQUENCE
1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING.
5. ROUGH GRADE STREETS.
6. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
7. DELIVER STORM SEWER CUT SHEETS TO THE CITY OF LEANDER.
8. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE DISTURBED AREA AS MUCH AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
9. DELIVER FINAL GRADE CUT SHEETS TO THE CITY OF LEANDER.
10. REGRADE STREETS TO SUBGRADE.
11. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
12. INSTALL CURB AND GUTTER.
13. LAY FINAL BASE COURSE ON ALL STREETS.
14. LAY ASPHALT.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITH THE R.O.W.
16. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
17. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 16.

NOTE: ROUGH GRADING ONLY - STEPS 1 THROUGH 3 ONLY.
ROUGH GRADING AND UTILITIES ONLY - STEPS 1 THROUGH 4 ONLY.
FULL DEVELOPMENT PERMIT - ENTIRE SEQUENCING

CLEARING AND GRUBBING UNDER A DEVELOPMENT PERMIT, SOLELY FOR THE PURPOSE OF SURVEYING AND SOIL EXPLORATION, SHALL BE HANDCUTTING OR BLADE-UP OPERATION.

EROSION CONTROL SCHEDULE AND SEQUENCING

I. ROUGH GRADING

CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED

II. UTILITY INSTALLATION

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.

III. PAVING

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.

IV. FINAL GRADING/SOIL STABILIZATION/LANDSCAPING

ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OR COUNTY.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 EROSION & SEDIMENTATION CONTROL PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-EC04

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER
CR Hager

LJA Engineering, Inc.
7500 Rialto Boulevard
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FRN-F-1386

JOB NUMBER: A4971

EC04

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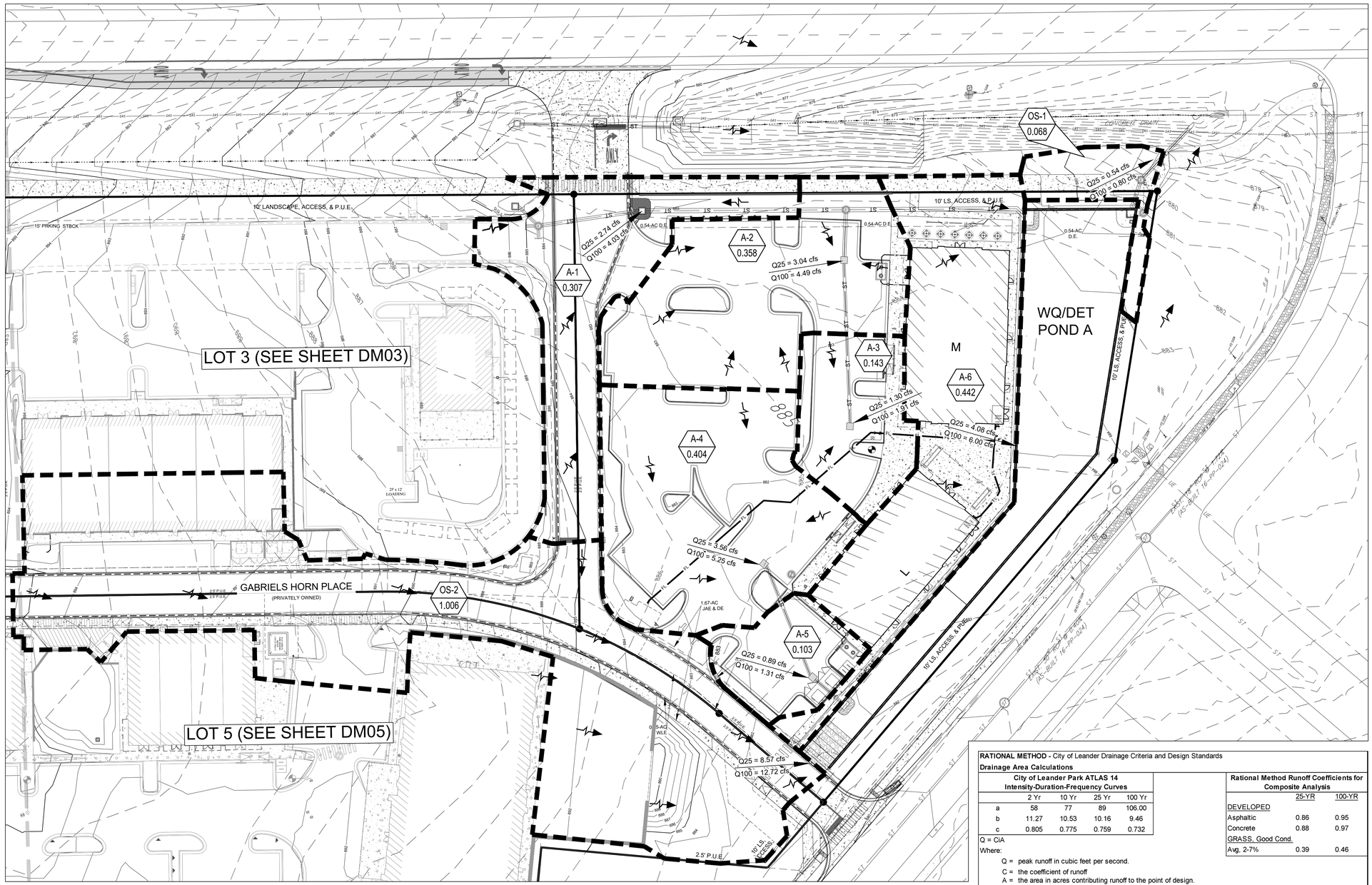

60 30 0 60 120
SCALE IN FEET

LEGEND

- OS-A1 / 7.082 / 2.60% IC — DRAINAGE AREA NUMBER AND ACREAGE
- DRAINAGE AREA
- PROPERTY LINE
- TC PATH
- XXX' LF SFY @ X.XX% — SHEET FLOW
- XXX' LF SCF @ X.XX% — SHALLOW CONCENTRATED FLOW
- FLOW DIRECTION ARROW

RATIONAL METHOD - City of Leander Drainage Criteria and Design Standards

Drainage Area Calculations

City of Leander Park ATLAS 14 Intensity-Duration-Frequency Curves

	2 Yr	10 Yr	25 Yr	100 Yr
a	58	77	89	106.00
b	11.27	10.53	10.16	9.46
c	0.805	0.775	0.759	0.732

Rational Method Runoff Coefficients for Composite Analysis

	25-YR	100-YR
DEVELOPED		
Asphaltic	0.86	0.95
Concrete	0.88	0.97
GRASS, Good Cond.		
Avg. 2-7%	0.39	0.46

$Q = CiA$

Where:

Q = peak runoff in cubic feet per second.
C = the coefficient of runoff
A = the area in acres contributing runoff to the point of design.
i = the average intensity of rainfall in inches per hour

$i = a/(t+b)^c$

Where,

t = Time of concentration for the entire drainage area of interest

T(sht flow) = $Ln/(42s^{0.5})$ T(shallow concentrated flow) = $Ln/(60s^{0.5})$

where,

L = Length of the reach in ft.
n = Manning's n
s = Slope of the ground in ft/ft

Developed Conditions Drainage Calculations (Site Calculations)

DRAINAGE AREA	AREA (AC)	PERV. (AC)	IMP. (AC)	C25	C100	ToC (min.)	I25	I100	Q25 (cfs)	Q100 (cfs)
A-1	0.307	0.046	0.261	0.790	0.877	5	11.30	15.00	2.74	4.03
A-2	0.358	0.084	0.274	0.750	0.836	5	11.30	15.00	3.04	4.49
A-3	0.143	0.018	0.125	0.802	0.889	5	11.30	15.00	1.30	1.91
A-4	0.404	0.070	0.334	0.779	0.866	5	11.30	15.00	3.56	5.25
A-5	0.103	0.021	0.082	0.762	0.848	5	11.30	15.00	0.89	1.31
A-6	0.442	0.040	0.402	0.818	0.906	5	11.30	15.00	4.08	6.00
OS-1	0.068	0.022	0.046	0.707	0.790	5	11.30	15.00	0.54	0.80
OS-2	1.006	0.362	0.717	0.754	0.843	5	11.30	15.00	8.57	12.72

GRATE INLET CALCULATIONS FOR 100 YR STORM (WITH 50% REDUCTION)

MODELED AS AN ORIFICE: $Q=C_D A_G (2 g d)^{.5}$, C_D =0.67
MODELED AS A WEIR: $Q=C_W P d^{1.5}$, C_W =3.0

AREA #	Q100 (CFS)	Flow Area (Sq. In.)	Inlet Size	A (SF)	A x 50% (SF)	P (FT)	$d_{ORIFICE}$ (FT)	d_{WEIR} (FT)	d_{allow} (FT)	Is $d_{orifice}$ and/or $d_{weir} > d_{allow}$?
A-1	4.03	2304	**48"x48"**	16.00	8.00	16.00	0.01	0.19	0.50	NO
A-2	4.49	2304	**48"x48"**	16.00	8.00	16.00	0.01	0.21	0.50	NO
A-3	1.91	2304	**48"x48"**	16.00	8.00	16.00	0.00	0.12	0.50	NO
A-4	5.25	1728	**48"x48"**	16.00	8.00	16.00	0.01	0.23	0.50	NO
A-5	1.31	432	**48"x48"**	16.00	8.00	16.00	0.00	0.09	0.50	NO

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 ONSITE DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-DM04

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

DM04

SHEET NO. 46 OF 70 SHEETS

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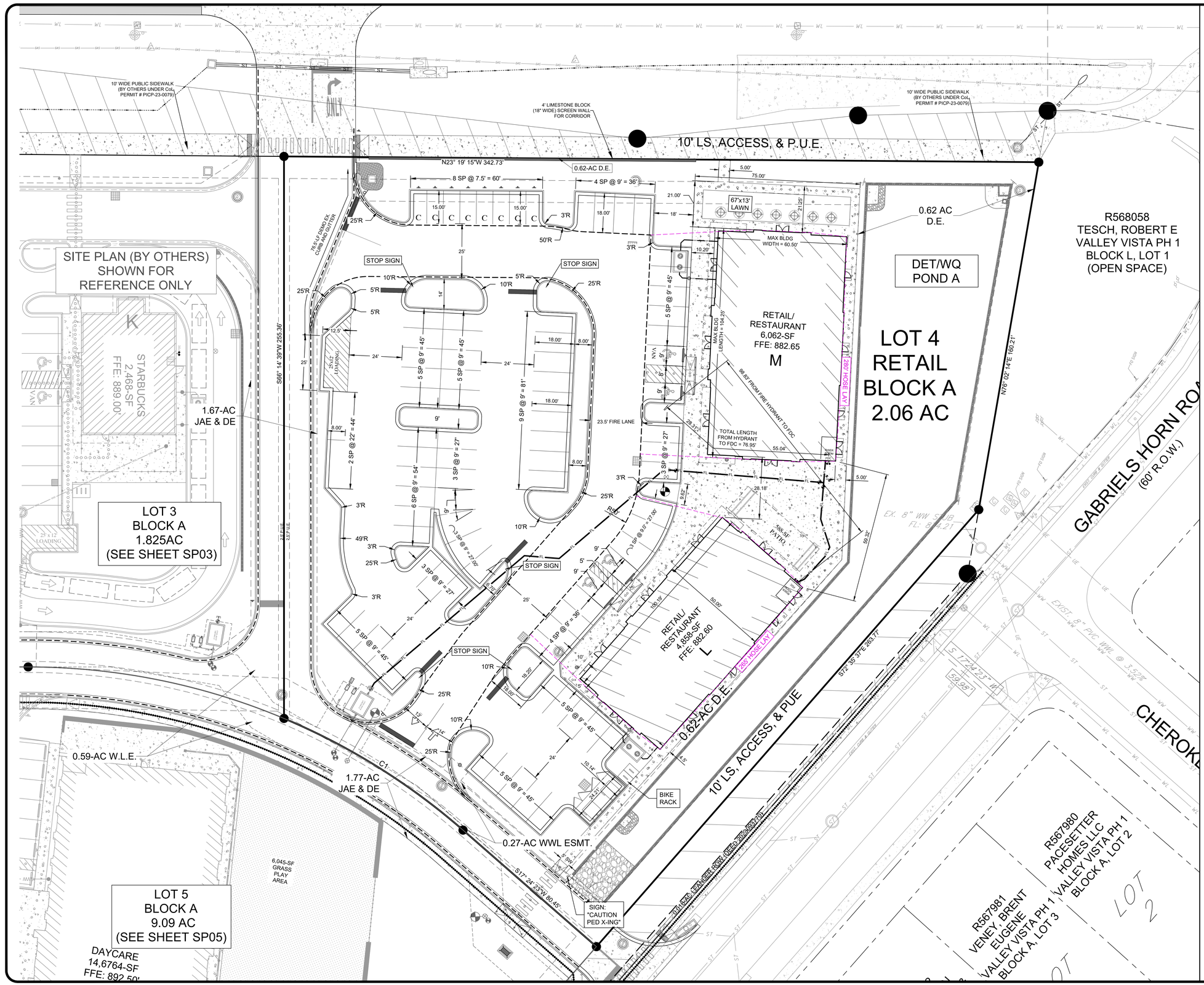

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 DETAILED SITE PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-SP04

09/10/2025

CITY OF LEANDER APPROVAL

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FRN-F-1386

JOB NUMBER: A4971

SP04

SHEET NO. 47

OF 70 SHEETS

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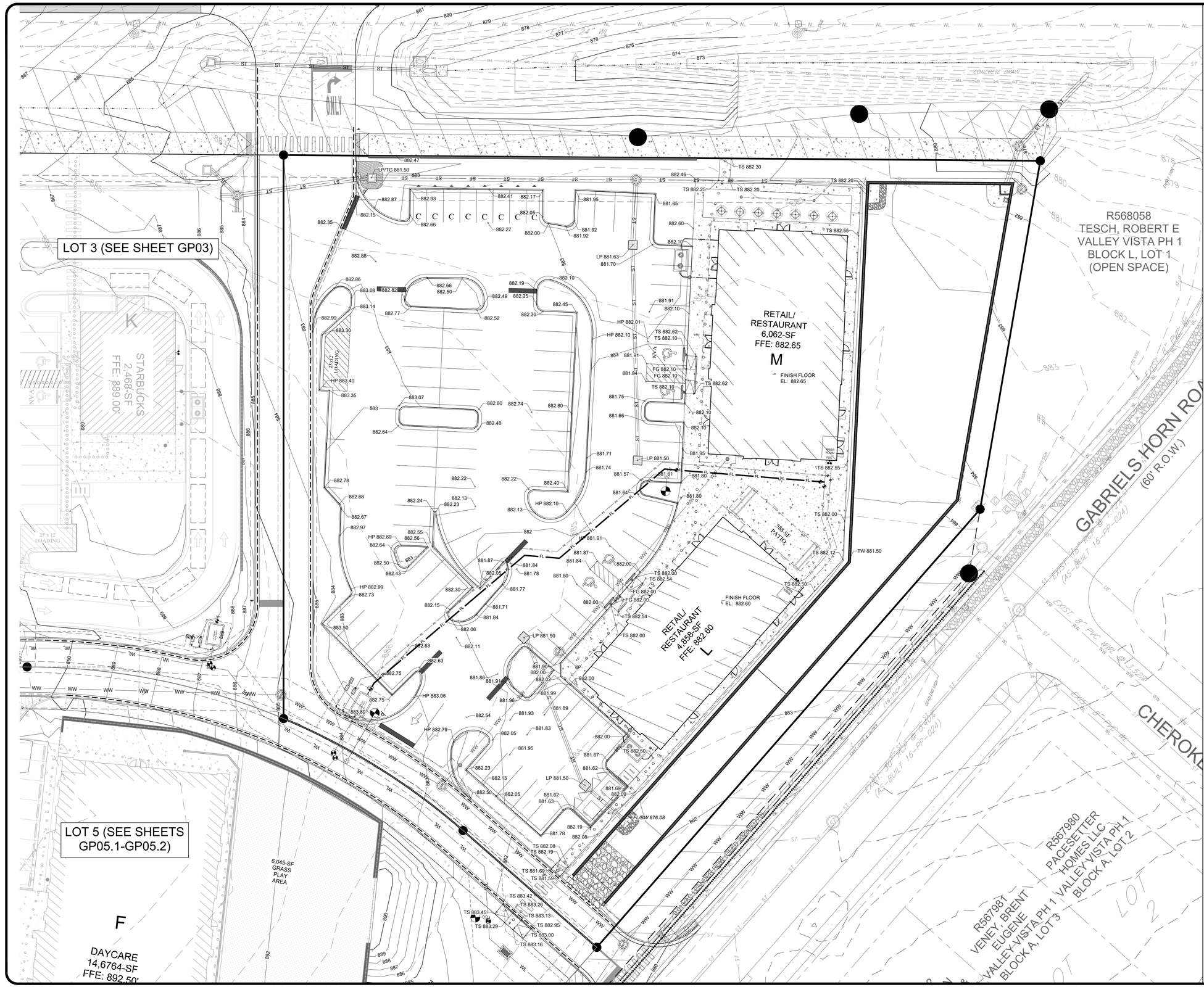

LEGEND

PROPOSED	EXISTING	
800	800	CONTOURS
		PROPOSED RETAINING WALL
		ACCESSIBLE ROUTE
100.00		TOP OF PAVEMENT
100.00 TC		TOP OF CURB/CONCRETE
100.00 TG		TOP OF GRATE
100.00 LP		LOW POINT
100.00 HP		HIGH POINT
100.00 FS		FINISHED SLAB
100.00 TW		TOP OF WALL
100.00 BW		BOTTOM OF WALL
100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		COTTON SPINDLE WITH CHAPARRAL WASHER SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
3. ALL SIDEWALKS SHALL BE 6' WIDE. ALL TRAILS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 GRADING PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-GP04

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
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FRN-F-1386

JOB NUMBER: A4971

GP04

SHEET NO. 48 OF 70 SHEETS

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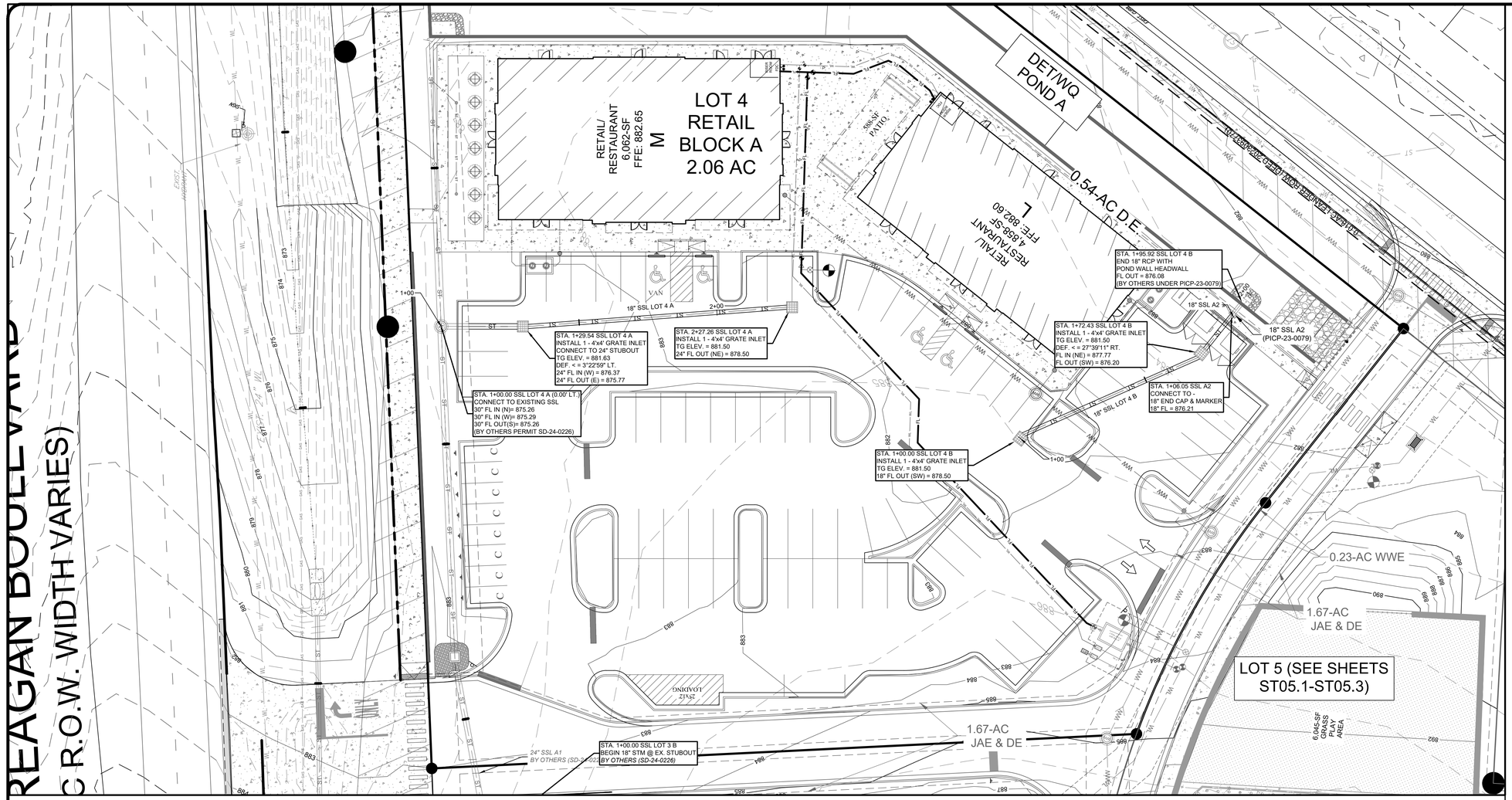

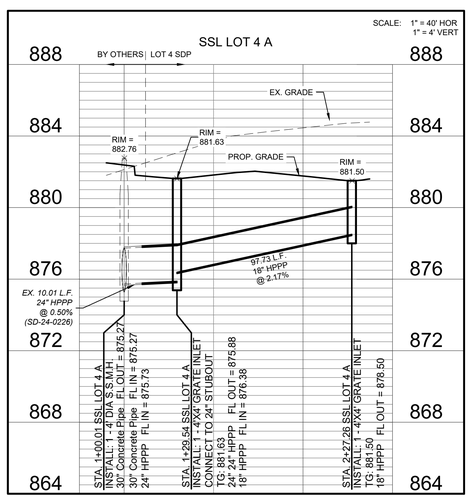

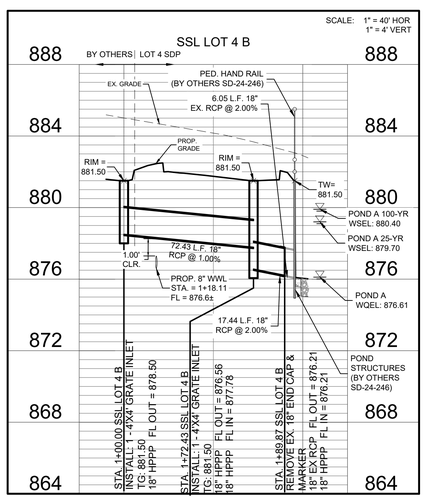

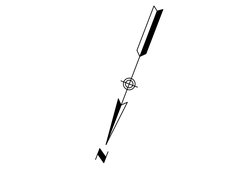

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
•		WASTEWATER SERVICE
WL	WL	WATER LINE
□		WATER SERVICE
	⊗	WATER VALVE
	✦	FIRE HYDRANT
WWMH	WWMH	WASTEWATER MANHOLE
SSMH	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
	●	1/2" REBAR FOUND (OR AS NOTED)
	●	1/2" REBAR WITH CAP FOUND
	●	1/2" REBAR WITH CHAPARRAL CAP SET
	□	WATER METER
	⌀	UTILITY POLE
	OU	OVERHEAD UTILITIES
	□	ELEC. UTILITY
	○	ELEC. MANHOLE
	☼	LIGHT POLE
	□	TELEPHONE UTILITY
	△	UNDERGROUND FIBER OPTIC MARKER
	○	TELEPHONE MANHOLE
	△	UNDERGROUND GAS MARKER
	—o—	CHAIN LINK FENCE

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE RCP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
4. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF LEANDER SPECIFICATIONS.
5. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 STORMSEWER PLAN & PROFILE

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4-ST04

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
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ST04

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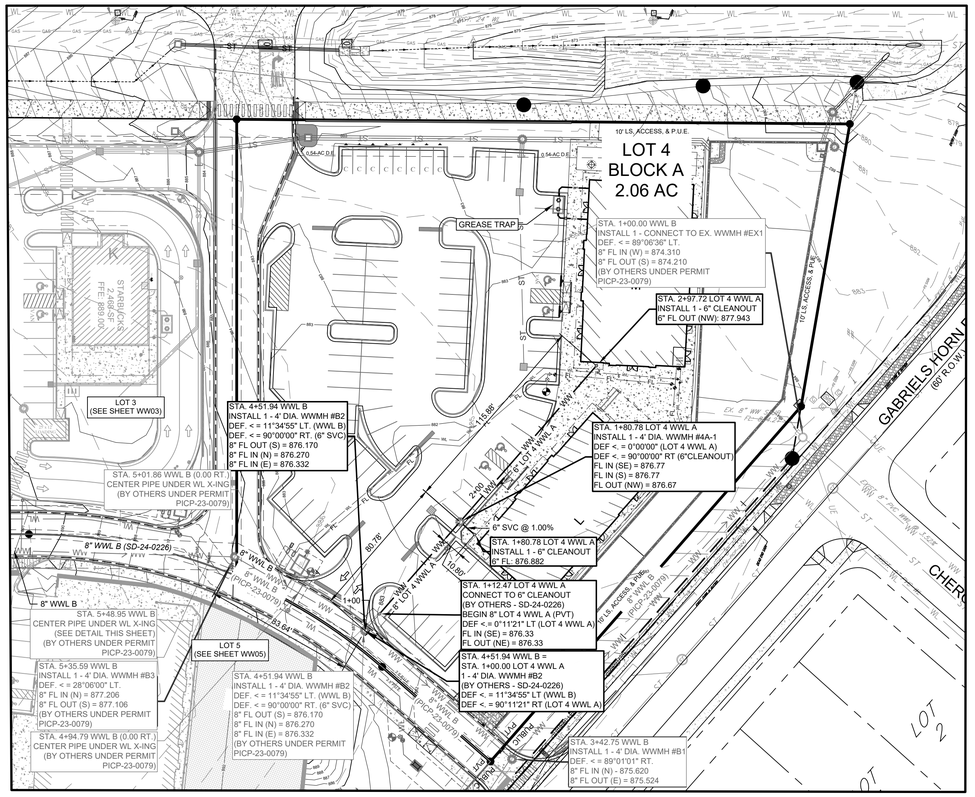


Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 4	5,115	1,660	Retail (SF)	3.1	2.06
	5,652	200	Restaurant (SF)	28.3	
			TOTAL	**31**	**2.06**

Wastewater Flow Calculation

Average Dry Weather Flow

Q = 245 GPD * LUE = 7,678.6 GPD

Q =0.170 GPM * LUE = 5.3 GPM

Peak Dry Weather

Q = ((18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F = 22.6 GPM

Inflow/Infiltration

Q = AREA * 750 GPD/1440 = 2.057 acres * 0.5208 = 1.1 GPM

Peak Wet Weather

Peak Dry Weather + Inflow/Infiltration = **23.6** **GPM**

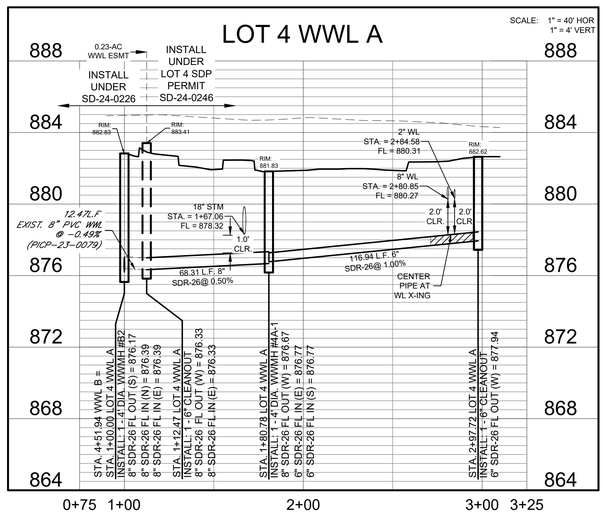
Water Flow Calculation

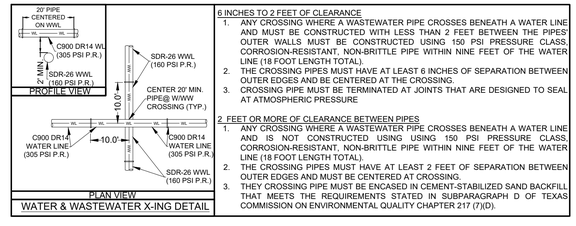
Peak Hour

Q = 2.2 GPM * LUE = **69.0** **GPM**

Peak Day

Q = 1.3 GPM* LUE = **40.7** **GPM**



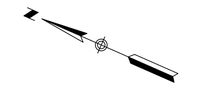


6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217 (7)(D).



40 20 0 40 80

SCALE IN FEET

1" = 20'

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 (PRESSURE RATING OF 160 PSI) WWL ASTM D3034 UNLESS OTHERWISE NOTED.
3. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PER TCEQ RULES.
4. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER WASTEWATER LINES. 2.0'(MIN) COVER OVER WASTEWATER PRIOR TO CONSTRUCTION.
5. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. REFERENCE CITY OF AUSTIN STANDARD DETAIL 520-AW-03 FOR CLEANOUTS IN GRASSED AREAS. REFERENCE CITY OF AUSTIN STANDARD DETAIL 520S-4-SM FOR CLEANOUTS IN PAVED AREAS.
6. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE FINISHED GROUND.
7. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL WATER AND WASTEWATER CROSSINGS CONFORM TO TCEQ DESIGN CRITERIA.
8. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 WASTEWATER PLAN AND PROFILE

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: ...LOT 4-WW04

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WW04

SHEET NO. 50 OF 70 SHEETS

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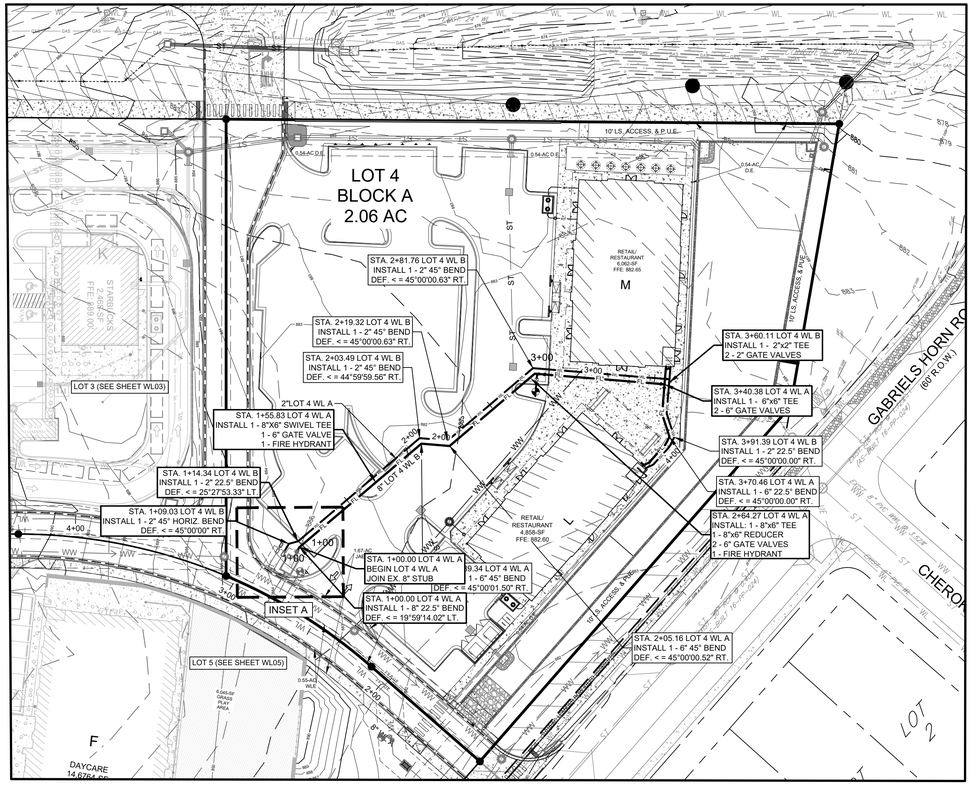
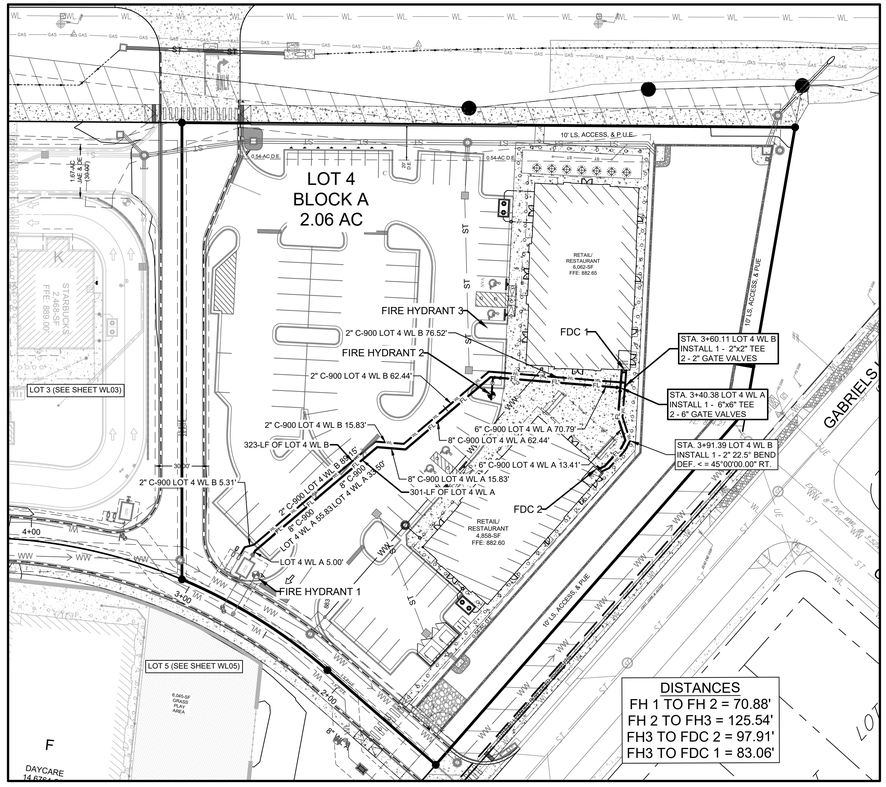
User: chafen
Last Modified: Sep. 15, 25 - 09:46
Plot Date/Time: Oct. 01, 25 - 16:14:17

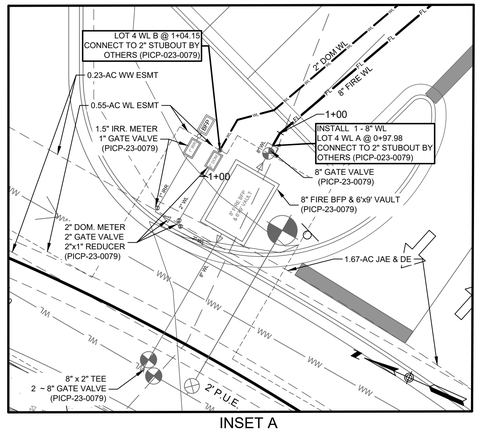
WATER LINES



FIRE HYDRANT DISTANCES



DISTANCES
FH 1 TO FH 2 = 70.88'
FH 2 TO FH3 = 125.54'
FH3 TO FDC 2 = 97.91'
FH3 TO FDC 1 = 83.06'



INSET A
SCALE 1" = 10'

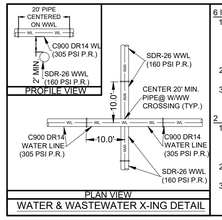
Gabriels Horn Development - Lot 4 - Block A
Water / Wastewater Demand Summary

Description	Quantity	LUE Conversion	Land Use	LUE's	Area (AC)
Lot 4	5,115	1,660	Retail (SF)	3.1	2.06
	5,652	200	Restaurant (SF)	28.3	
			TOTAL	**31**	**2.06**

Water Flow Calculation

Peak Hour		
Q = 2.2 GPM * LUE =	**69.0**	**GPM**
Peak Day		
Q = 1.3 GPM* LUE =	**40.7**	**GPM**

K. FRIESE MODELING RESULTS
LOT 4
MIN. PRESSURE = 126 psi (1,174 HGL)
MAX. PRESSURE = 139 psi (1,205 HGL)
Fire flow available = 4,000 gpm at 65 psi residual



WATER & WASTEWATER X-ING DETAIL

6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
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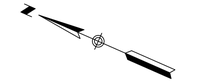

LEGEND

EXISTING	
ST	STORM SEWER LINE
WW	WASTEWATER LINE
PROPOSED	WASTEWATER SERVICE
WL	WATER LINE
	WATER SERVICE
	WATER VALVE
	FIRE HYDRANT
	WASTEWATER MANHOLE
	STORMSEWER MANHOLE
	CURB INLET
	GRATE INLET
	1/2" REBAR FOUND (OR AS NOTED)
	1/2" REBAR WITH CAP FOUND
	1/2" REBAR WITH CHAPARRAL CAP SET
	WATER METER
	UTILITY POLE
OU	OVERHEAD UTILITIES
	ELEC. UTILITY
	ELEC. MANHOLE
	LIGHT POLE
	TELEPHONE UTILITY
	UNDERGROUND FIBER OPTIC MARKER
	TELEPHONE MANHOLE
	UNDERGROUND GAS MARKER
	CHAIN LINK FENCE

UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. ALL POTABLE WATER LINES SHALL BE AWWA C900-DR14 PVC (WITH MIN. 305 PSI PRESSURE RATING). FIRE HYDRANT LEADS SHALL BE CLASS 350 DUCTILE IRON.
3. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER UTILITY & STORM LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
4. NO. 10 SOLID COPPER WIRE SHALL BE INSTALLED AS TRACER WIRE ABOVE ALL NONMETALLIC WATER LINES.
5. ALL WATER SERVICE LINES SHALL INCLUDE GATE VALVE AT MAIN LINE.
6. THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH LEANDER FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE.
7. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
8. TAPPING SLEEVES TO BE SMITH-BLAIR 663 OR JCM 439 ALL STAINLESS TAPPING SLEEVES.
9. WATER SERVICE IS PROVIDED BY THE CITY OF LEANDER.
10. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL WATER AND WASTEWATER CROSSINGS CONFORM TO TCEQ DESIGN CRITERIA.
11. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE HPPP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
12. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PER TCEQ RULES.
13. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED.
14. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. INSTALL CLEANOUTS WITHIN GRASSED AREAS PER CITY OF AUSTIN STANDARD DETAIL NO. 520-AW-03. CLEANOUTS WITHIN PAVED AREAS SHALL BE INSTALLED PER STANDARD DETAIL NO. 520S-4-SM AND SHALL REQUIRE HEAVY DUTY TRAFFIC RATED HOUSINGS AND LIDS.
15. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE PROP. GROUND ELEVATION.
16. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY IS REQUIRED ON ALL WATER LINES IN ACCORDANCE WITH AWWA STANDARD C510-92 AWWA STANDARD C510-92

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 4 WATERLINE PLAN & PROFILE

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: DLB
CHECKED BY: CRH
DRAWING NAME: LOT 4 WL04

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WL04

SHEET NO. 51 OF 70 SHEETS

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User: chafler
Last Modified: Sep. 15, 25 - 09:46
Plot Date/Time: Oct. 01, 25 - 16:16:02

RONALD REAGAN BOULEVARD
(PUBLIC R.O.W. WIDTH VARIES)

RONALD REAGAN BOULEVARD
(PUBLIC R.O.W. WIDTH VARIES)

LOT 1
BLOCK A
2.21 AC
GC-3-C

LOT 2
BLOCK A
1.19 AC
GC-3-C

LOT 3
BLOCK A
1.825 AC
LC-2-A

LOT 4
BLOCK A
2.06 AC
LC-2-A

LOT 5
BLOCK A
9.09 AC
GC-3-A

LOT 5
BLOCK A
9.09 AC
LC-2-A

GABRIELS HORN PLACE

GABRIELS HORN ROAD

CHICKASAW TRAIL

LOT 1 - HOA LANDSCAPE

CITY OF LEANDER
CITY OF LEANDER ETJ

CONTINENTAL HOMES OF TEXAS LP DBA DR HORTON
TRAILWOOD RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 15
0.497 ACRES (OPEN SPACE)

R599308 TRAN, BAU SON & THUY THANH THI NGUYEN BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 1

R599309 ALYAS, ROMAN ARUB BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 2

R599310 GUZMAN, MANUEL & JAQUELINE JAIMES BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 3

R599311 CHAN, WENCHING BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 4

R599312 SRIVASTAVA, UTKARSH & KRITIKA BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 5

R599313 YOON, HYUNA & KYUGENE LEE BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 6

R599314 KALAGIRI, KAUSHIK & ANUSHA CHOUDRY BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 7

R599315 PARK, SANG EUN BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 8

R599316 KONDETI, VENKATA KRISHNA & MONICA RAYUDU BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 9

R599317 DAVILA, CECILIA ARELLANO BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 10

R599318 CHENG, JOANNIE CHING YI & ANGEL BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 11

R599319 NAIDU, VENKATESH BABU BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 12

R599320 PHI NGUYEN DANNY HUNG & ARIELLE LIN CHEN HUNG BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 13

R599321 GANAPATHYKRISHNAN, RAGUL BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 14

R599268 JAO, MIEN

R599195 WEDEMEYER, HOWARD BARKLEY GARMES),H SURVEY 3.032 ACRES

R568058 TESCH, ROBERT E VALLEY VISTA PH 1 BLOCK L, LOT 1 (OPEN SPACE)

R583211 MAGSINO, RYAN & STEPHANIE BETH DERKOVSKI VALLEY VISTA PH 2 BLOCK A, LOT 13

R583212 MURRAY, JARVIS MARQUINN VALLEY VISTA PH 2 BLOCK A, LOT 14

R567882 SKOG, RYAN CHRISTOPHER & VALLEY VISTA PH 1 BLOCK A, LOT 4

R567883 CALEB, KARA VALLEY VISTA PH 1 BLOCK A, LOT 5

R567884 IBARZA, JONATHAN & ARRIOLA, IMMANUEL VALLEY VISTA PH 1 BLOCK A, LOT 6

R567885 BANG, JOSHUA DANIEL VALLEY VISTA PH 1 BLOCK A, LOT 7

R567886 TRAN, HAN VALLEY VISTA PH 1 BLOCK A, LOT 8

R567887 ARIAS, JAMES DANIELS & REBECA VALLEY VISTA PH 1 BLOCK A, LOT 9

R567888 MELENDEZ & MELENDEZ KELLY VISTA PH 1 BLOCK A, LOT 10

R567889 PANAY, KIRAN P & SUJATA VALLEY VISTA PH 1 BLOCK A, LOT 11

R583219 PACHECO, FORESTER VALLEY VISTA PH 2 BLOCK A, LOT 12

LOT 5 LOT 6 LOT 7 LOT 8 LOT 9 LOT 10 LOT 11 LOT 12 LOT 13 LOT 14 LOT 15

672

667 EXISTING CONTOUR MINOR
670 EXISTING CONTOUR MAJOR
PROPERTY LINE
EASEMENT LINE
SETBACK LINE
DRAINAGE CENTERLINE
CITY LIMITS LINE
ZONING BOUNDARY
ST STORM SEWER LINE
WW WASTEWATER LINE
WASTEWATER SERVICE
WL WATER LINE
WATER SERVICE
LEANDER ULT.-DEV. 100-YR ATLAS 14 FP
LEANDER EX. 100-YR ATLAS14 FP
CHAIN-LINK FENCE
TREE TO BE REMOVED DURING SDP
TREE TO REMAIN
TREE TO REMAIN (HERITAGE)
STREET SIGN
5/8" IRON ROD WITH PLASTIC CAP STAMPED "LJA SURVEY" SET
IRON ROD FOUND (AS NOTED)
IRON PIPE FOUND (AS NOTED)
COTTON-GIN SPINDLE FOUND
MAG NAIL FOUND
"X" SCRIBED IN CONCRETE

50 25 0 50 100
SCALE IN FEET

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN. AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20,2019.

TCEQ EDWARDS AQUIFER NOTE:
THIS SITE IS WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

WATERSHED NOTE:
THIS SITE IS WITHIN THE SOUTH FORK SAN GABRIEL RIVER WATERSHED.

BUFFER ZONE NOTE:
THIS SUBDIVISION IS NOT SUBJECT TO CITY OF LEANDER BUFFER ZONE (DEFINED BY FEMA 100-YR FLOODPLAIN LIMITS).

TREE PROTECTION NOTES:
1. TREE REMOVAL, MITIGATION, AND OTHER APPLICABLE REQUIREMENTS FROM PICP-23-0079 & OVERALL SHARED IMPROVEMENT SDP RELATING TO THE TREES SHOWN AS REMOVED WITHIN THE SUBJECT LOT SHALL BE ADDRESSED AS PART OF THIS SITE DEVELOPMENT PROJECT. SEE LANDSCAPE SHEETS FOR TREE LIST AND MITIGATION SUMMARY REQUIRED FOR PROPOSED SITE IMPROVEMENTS.
2. TREE SURVEY PERFORMED BY WESTAR ALAMO LAND SURVEYORS, LLC DATED 3/7/2022.
3. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN

LOT 5 EXIST. CONDITIONS AND DEMO PLAN

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 EX05

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

EX05

SHEET NO.
52
OF 70 SHEETS

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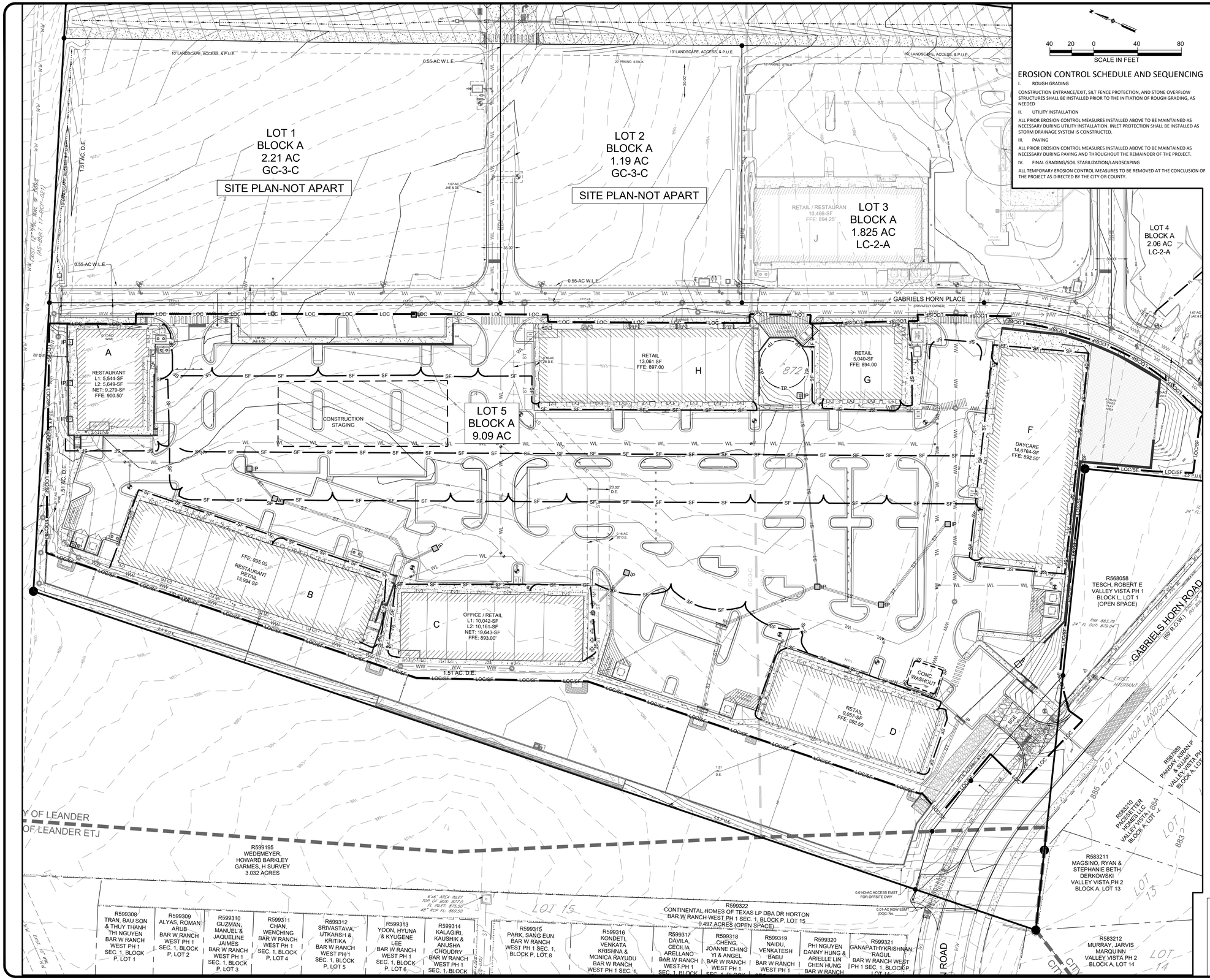
Plot Date/Time: Oct. 01, 25 - 16:16:56



EROSION CONTROL SCHEDULE AND SEQUENCING

I. ROUGH GRADING

CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED

II. UTILITY INSTALLATION

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.

III. PAVING

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.

IV. FINAL GRADING/SOIL STABILIZATION/LANDSCAPING

ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OR COUNTY.

40 20 0 40 80
SCALE IN FEET

LEGEND

PROPOSED	EXISTING	
		PROPERTY BOUNDARY
LOC	LOC	LIMITS OF CONSTRUCTION
SF	SF	SILT FENCE (CoA DTL. 642S-1)
LOC/SF	LOC/SF	LIMITS OF CONST./SILT FENCE (CoA DTL. 642S-1)
TP	TP	TREE PROTECTION (CoL DTL. 303-2)
IP	IP	INLET PROTECTION (GEOCURVE, SEE EC02)
		ROCK BERM (CoA DTL. 639S-1)
RB		
SCE		STABILIZED CONSTRUCTION ENTRANCE (CoA DTL. 641S-1)
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
CONC. WASHOUT		CONCRETE WASHOUT (CoL DTL. 303-1)
TP		TREE TO REMAIN / TREE PROTECTION (CoL DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

NOTES:
1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLALIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5,1)
2. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT HAVE MIGRATED ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION AND SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. CONTRACTOR SHALL MAINTAIN THE DE-WATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DE-WATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DE-WATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
7. ALL DISTURBED AREAS OUTSIDE OF IMPERVIOUS COVER AND RIPRAP IMPROVEMENTS ARE TO BE PERMANENTLY SEEDED AND STABILIZED ONCE CONSTRUCTION OF THE AREA IS COMPLETE.

SPOILS STAGING NOTES:
ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT, AND CONTRACTOR STAGING AREAS.

CONSTRUCTION SEQUENCE

1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING.
5. ROUGH GRADE STREETS.
6. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
7. DELIVER STORM SEWER CUT SHEETS TO THE CITY OF LEANDER.
8. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE DISTURBED AREA AS MUCH AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
9. DELIVER FINAL GRADE CUT SHEETS TO THE CITY OF LEANDER.
10. REGRADE STREETS TO SUBGRADE.
11. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY FIRST COURSE BASE MATERIAL ON ALL STREETS.
12. INSTALL CURB AND GUTTER.
13. LAY FINAL BASE COURSE ON ALL STREETS.
14. LAY ASPHALT.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITH THE R.O.W.
16. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
17. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 16.

NOTE: ROUGH GRADING ONLY - STEPS 1 THROUGH 3 ONLY.
ROUGH GRADING AND UTILITIES ONLY - STEPS 1 THROUGH 4 ONLY.
FULL DEVELOPMENT PERMIT - ENTIRE SEQUENCING

CLEARING AND GRUBBING UNDER A DEVELOPMENT PERMIT, SOLELY FOR THE PURPOSE OF SURVEYING AND SOIL EXPLORATION, SHALL BE HANDCUTTING OR BLADE-UP OPERATION.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 EROSION & SEDIMENTATION CONTROL PLAN

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: EC-01-LOT 5

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

EC05

SHEET NO. 53 OF 70 SHEETS

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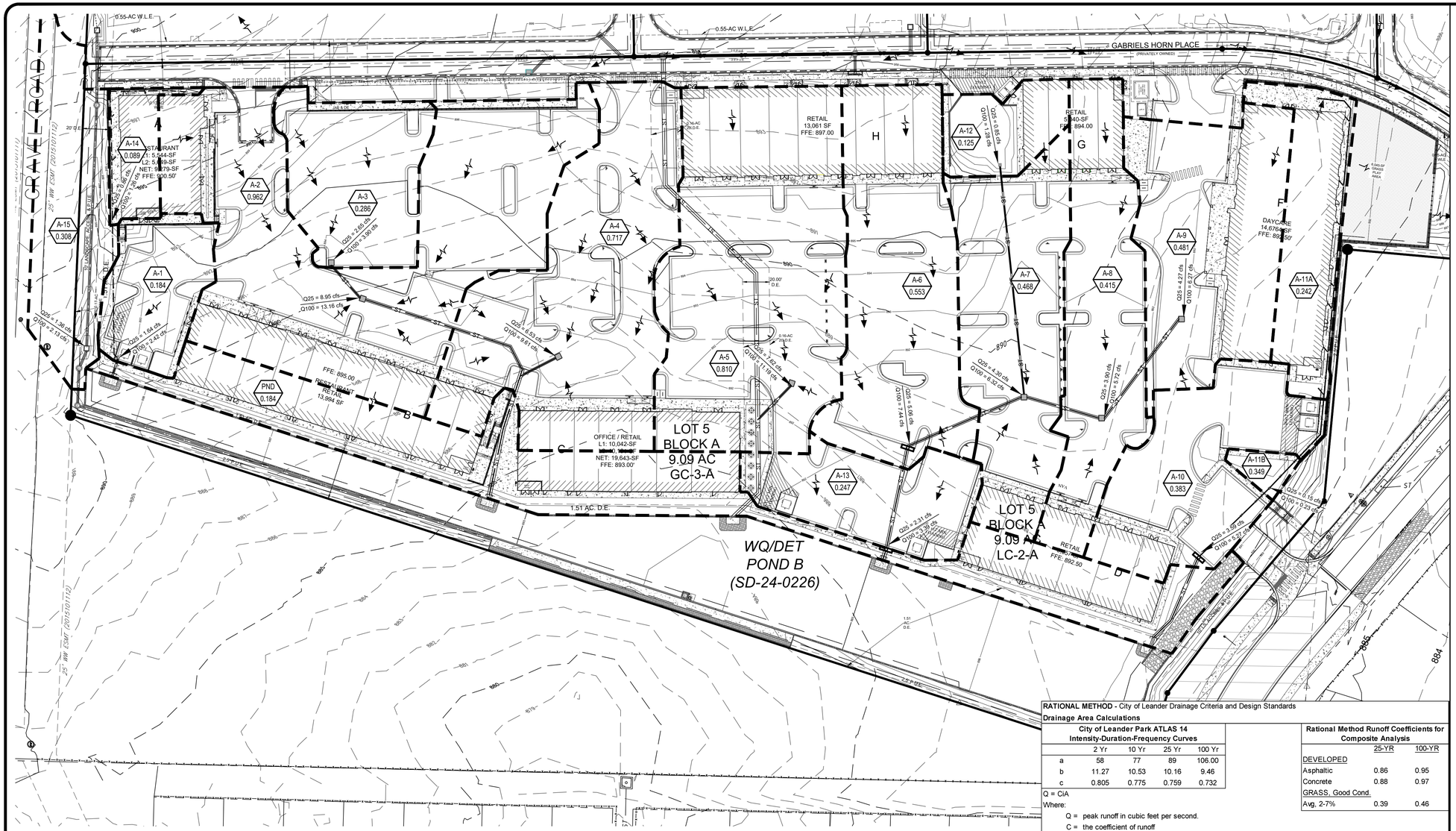
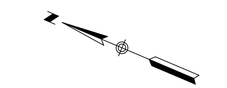
User: cmillen
Last Modified: Sep 15, 25 - 09:47
Plot Date/Time: Oct. 01, 25 - 16:16:20





LEGEND

- DS-A1 / 7.082 / 0.60% IC — DRAINAGE AREA NUMBER AND ACREAGE
- DRAINAGE AREA
- PROPERTY LINE
- TC PATH
- XXX' LF SFY @ X.XX% — SHEET FLOW
- XXX' LF SCF @ X.XX% — SHALLOW CONCENTRATED FLOW
- FLOW DIRECTION ARROW

GRATE INLET CALCULATIONS FOR 100 YR STORM (WITH 50% REDUCTION)

MODELED AS AN ORIFICE $Q=C_0 A_G (2 g d)^{.5}$, C_0 =0.67 — **MODELED AS A WEIR** $Q=C_w P d^{1.5}$, Cw =3.0

AREA #	Q100 (CFS)	Flow Area (Sq. In.)	Inlet Size	A (SF)	A x 50% (SF)	P (FT)	$d_{ORIFICE}$ (FT)	d_{WEIR} (FT)	d_{allow} (FT)	Is $d_{orifice}$ and/or $d_{weir} > d_{allow}$?
A-1	2.42	576	**24"x24"**	4.00	2.00	8.00	0.05	0.22	0.50	NO
A-2	13.16	2304	**48"x48"**	16.00	8.00	16.00	0.09	0.42	0.50	NO
A-3	3.90	1728	**36"x36"**	12.00	6.00	12.00	0.01	0.23	0.50	NO
A-4	9.61	2304	**48"x48"**	16.00	8.00	16.00	0.05	0.34	0.50	NO
A-5	11.19	2304	**48"x48"**	16.00	8.00	16.00	0.07	0.38	0.50	NO
A-7	6.32	1728	**36"x36"**	12.00	6.00	12.00	0.04	0.31	0.50	NO
A-8	5.72	1728	**36"x36"**	12.00	6.00	12.00	0.03	0.29	0.50	NO
A-9	6.56	1728	**36"x36"**	12.00	6.00	12.00	0.04	0.32	0.50	NO
A-11A	0.42	113	**12" LS**	0.79	0.39	3.14	0.04	0.13	0.50	NO
A-11B	0.23	864	**18"x18"**	6.00	3.00	6.00	0.00	0.06	0.50	NO
A-12	1.28	576	**24"x24"**	4.00	2.00	4.00	0.01	0.23	0.50	NO

SUMP INLET CALCULATIONS FOR 100YR STORM

Weir Equation $Q = C_w h^{1.5} L$, C_w = 3.0

If $h_{weir} > 0.5$, use orifice equation $Q=C_0 A_G (2 g d)^{.5}$, C_0 =0.67, A_G = Lx6"/12

Note: Per Standard Curb Inlet Detail, Curb Inlets have 6" depression from the curb gutter with a distance of 11.75" from the lip to top of curb (h_{allow}). The inlet opening has a height of 6". The centroid of the inlet opening is 3" above the inlet lip.

INLET NO.	FLOW (CFS)	Q_{BYPASS} (CFS)	Q_{TOTAL} (CFS)	L (FT)	WEIR CALC Q/L or A (CFS/LF)	WEIR CALC h_{weir}(FT) (a+Yo)	ORIFICE CALC A_E (SF)	ORIFICE CALC $h_{orifice}$ (FT)	h_{allow} (FT)	INLET TYPE
A-6	7.4	0.0	7.4	9.0	0.83	0.42	4.50	0.34	0.98	10' Curb Inlet
A-10	5.3	0.0	5.3	9.0	0.59	0.34	4.50	0.30	0.98	10' Curb Inlet
A-13	3.4	0.0	3.4	9.0	0.38	0.25	4.50	0.27	0.98	10' Curb Inlet

RATIONAL METHOD - City of Leander Drainage Criteria and Design Standards

Drainage Area Calculations

City of Leander Park ATLAS 14 Intensity-Duration-Frequency Curves

	2 Yr	10 Yr	25 Yr	100 Yr
a	58	77	89	106.00
b	11.27	10.53	10.16	9.46
c	0.805	0.775	0.759	0.732

Rational Method Runoff Coefficients for Composite Analysis

	25-YR	100-YR
DEVELOPED		
Asphaltic	0.86	0.95
Concrete	0.88	0.97
GRASS, Good Cond.		
Avg, 2-7%	0.39	0.46

$Q = CiA$

Where:

Q = peak runoff in cubic feet per second.
C = the coefficient of runoff
A = the area in acres contributing runoff to the point of design.
i = the average intensity of rainfall in inches per hour

$i = a/(t+b)^c$

Where,
t = Time of concentration for the entire drainage area of interest

T(sht flow) = $Ln/(42s^{0.5})$ T(shallow concentrated flow) = $Ln/(60s^{0.5})$

where,
L = Length of the reach in ft.
n = Manning's n
s = Slope of the ground in ft/ft

Developed Conditions Drainage Calculations (Site Calculations)

DRAINAGE AREA	AREA (AC)	PERV. (AC)	IMP. (AC)	C25	C100	ToC (min.)	I25	I100	Q25 (cfs)	Q100 (cfs)
A-1	0.184	0.027	0.157	0.790	0.877	5	11.30	15.00	1.64	2.42
A-2	0.962	0.076	0.887	0.823	0.911	5	11.30	15.00	8.95	13.16
A-3	0.286	0.025	0.262	0.820	0.908	5	11.30	15.00	2.65	3.90
A-4	0.717	0.081	0.635	0.807	0.894	5	11.30	15.00	6.53	9.61
A-5	0.810	0.049	0.761	0.832	0.920	5	11.30	15.00	7.62	11.19
A-6	0.553	0.059	0.494	0.810	0.898	5	11.30	15.00	5.06	7.44
A-7	0.468	0.048	0.421	0.812	0.900	5	11.30	15.00	4.30	6.32
A-8	0.415	0.027	0.389	0.830	0.918	5	11.30	15.00	3.90	5.72
A-9	0.481	0.039	0.441	0.822	0.910	5	11.30	15.00	4.46	6.56
A-10	0.383	0.025	0.358	0.830	0.918	5	11.30	15.00	3.59	5.27
A-11A	0.242	0.007	0.235	0.847	0.936	5	11.30	15.00	2.31	3.39
A-11B	0.027	0.022	0.006	0.492	0.566	5	11.30	15.00	0.15	0.23
A-12	0.125	0.069	0.057	0.603	0.682	5	11.30	15.00	0.85	1.28
A-13	0.247	0.016	0.230	0.829	0.917	5	11.30	15.00	2.31	3.39
A-14	0.089	0.002	0.087	0.851	0.941	5	11.30	15.00	0.86	1.26
A-15	0.308	0.308	0.000	0.390	0.460	5	11.30	15.00	1.36	2.13
PND	0.749	0.223	0.526	0.720	0.804	5	11.30	15.00	6.10	9.03

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 ONSITE DRAINAGE MAP

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 DM05

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DM05

SHEET NO.
54
OF 70 SHEETS

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User: charlie
Last Modified: Sep. 15, 25 - 09:47
Plot Date/Time: Oct. 01, 25 - 16:18:38

NOTE: FOR ALL WALL DETAILS REFER TOO GP03, GP04, AND STRUCTURE DETAILS

LOT 1
BLOCK A
2.21 AC

SITE PLAN NOT APART

LOT 2
BLOCK A
1.19 AC

SITE PLAN NOT APART

LOT 3
BLOCK A
1.825 AC

LOT 4
BLOCK A
2.06 AC

LOT 5
BLOCK A
9.09 AC
LC-2-A

LOT 6
BLOCK A
9.09 AC

GABRIEL'S HORN PLACE
(PRIVATELY OWNED)

GABRIELS HORN ROAD
(60' R.O.W.)

DRIVEWAY BY OTHERS
(PICP-23-0079)

DET/WQ
POND B
(SD-24-0226)

RETAIL / RESTAURANT
10,466-SF
FFE: 894.25'

STARBUCKS
1,800-SF
FFE: 889.00

RESTAURANT
L1: 5,544-SF
L2: 5,649-SF
NET: 9,279-SF
FFE: 900.50'

RETAIL
13,061 SF
FFE: 897.00

RETAIL
5,040-SF
FFE: 894.00

DAYCARE
14,6764-SF
FFE: 892.50'

OFFICE / RETAIL
L1: 10,042-SF
L2: 10,161-SF
NET: 19,643-SF
FFE: 893.00'

RESTAURANT
RETAIL
13,984 SF
FFE: 895.00

RETAIL
9,057-SF
FFE: 892.50

RET. WALL W/ FALL PROTECTION RAIL (DTL. 707S-2)

R568058
TESCH, ROBERT E
VALLEY VISTA PH 1
BLOCK L, LOT 1
(OPEN SPACE)

R599195
WEDEMEYER,
HOWARD BARKLEY
GARMES, H SURVEY
3.032 ACRES

R599308 TRAN, BAU SON & THUY THANH THI NGUYEN BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 1

R599309 ALYAS, ROMAN ARUB BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 2

R599310 GUZMAN, MANUEL & JAQUELINE JAIMES BAR W RANCH WEST PH 1

R599311 CHAN, WENCHING BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 4

R599312 SRIVASTAVA, UTKARSH & KRITIKA BAR W RANCH WEST PH 1

R599313 YOON, HYUNA & KYUGENE LEE BAR W RANCH WEST PH 1

R599314 KALAGIRI, KAUSHIK & ANUSHA CHOUDRY BAR W RANCH

R599315 PARK, SANG EUN BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 8

R599316 KONDETI, VENKATA KRISHNA & MONICA RAYUDU

R599317 DAVILA, CECILIA ARELLANO

R599318 CHENG, JOANNE CHING YI & ANGEL

R599319 NAIDU, VENKATESH BABU

R599320 PHI NGUYEN DANNY HUNG & ARIEL I F LIN

R599321 GANAPATHYKRISHNAN, RAGUL

R599322
CONTINENTAL HOMES OF TEXAS LP DBA DR HORTON
BAR W RANCH WEST PH 1 SEC. 1, BLOCK P, LOT 15
0.497 ACRES (OPEN SPACE)

R583210 PACESETTER HOMES LLC VALLEY VISTA PH 2 BLOCK A, LOT 12

R583211 MAGGINO, RYAN & STEPHANIE BETH DERKOWSKI VALLEY VISTA PH 2 BLOCK A, LOT 13

R583212 MURRAY, JARVIS MARQUINN VALLEY VISTA PH 2

R567869 PANDAY, KIRAN P & SUJAN VALLEY VISTA PH 1 BLOCK A, LOT 11

HOA LANDSCAPE

CITY OF LEANDER
CITY OF LEANDER ETJ

LOT 15

LOT 12

LOT 13

LOT

0.55-AC W.L.E.
0.17-AC WWE
1.67-AC JAE & DE
0.16-AC 20' D.E.
1.51 AC. D.E.
0.27-AC WWL ESMT
0.59-AC W.L.E.
0.23-AC WWE
25' WW ESMT (2015011712)
20' PRKING. STBCK
6' SIDEWALK
STOP BAR AND SIGN
4 BIKE PARKING
25' FIRE LANE
EXIST. HYDRANT
RIM: 883.79
24" FL OUT: 879.04
6"x6" AREA INLET TOP OF BOX: 877.0 FL INLET: 875.50 48" RCP FL: 869.50

LEGEND

- 667 — EXISTING CONTOUR MINOR
- 670 — EXISTING CONTOUR MAJOR
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- DRAINAGE CENTERLINE
- ZONING BOUNDARY
- WQZ — WATER QUALITY / BUFFER ZONE
- ST — ST — STORM SEWER LINE
- WW — WW — WASTEWATER LINE
- WASTEWATER SERVICE
- WL — WL — WATER LINE
- WATER SERVICE
- FIRE ACCESS LANE
- R.O.W. DEDICATION (EXISTING / NEW)
- HEAVY TRAFFIC PAVING

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83. COORDINATES GIVEN IN SURFACE.

UTILITY NOTE:
THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED (UTILITIES SHOWN HEREON MAY BE EXAGGERATED FOR GRAPHIC REPRESENTATION ONLY) ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, ONLY THE VISIBLE ABOVE GROUND UTILITY STRUCTURES.

LEGAL DESCRIPTION:
BEING 17.82 ACRES OF LAND, MORE OR LESS, OUT OF THE HENRY GARMES SURVEY, ABSTRACT NO. 269, IN WILLIAMSON COUNTY, TEXAS, AND BEING ALL OF A CALLED 17.825 ACRE TRACT OF LAND AS CONVEYED IN A SUBSTITUTE TRUSTEE'S DEED FROM ROBERT E. TESCH TO EQUITY SECURED CAPITAL, L.P., DATED 01-05-2012 AS RECORDED IN DOCUMENT NO. 2012001125 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, (O.P.R.W.C.) AND BEING THAT SAME TRACT OF LAND CONVEYED FROM EQUITY SECURED CAPITAL, L.P. TO REAGAN GABRIELS REAL ESTATE, L.L.C. DATED 12-30-2021 AS RECORDED IN DOCUMENT NO. 2022000020, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. (O.P.R.W.C.)

ACCESS NOTES:
1. MINIMUM DRIVEWAY SPACING IS 75' FOR ALL PROPOSED DRIVEWAYS (COA TRANSPORTATION MANUAL SEC. 5.3.2 TABLE 5-2 MINIMUM FOR COMMERCIAL COLLECTORS).
2. PROPOSED DRIVEWAYS REQUIRE 200' SIGHT DISTANCE (COA TRANSPORTATION MANUAL SEC. 1.3.1 TABLE 5-2 MINIMUM FOR 2-3 LANE STREETS).

FLOODPLAIN NOTE:
NO PORTION OF THE SUBJECT TRACT IS WITHIN THE 100-YEAR FLOODPLAIN AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NO. 48491C0455F, WITH AN EFFECTIVE DATE OF DECEMBER 20, 2019.

NOTES:
IF THE PROPERTY IS ZONED WITH AN LC USE COMPONENT, A NOTE IS PROVIDED ON THE SITE PLAN LIMITING HOURS OF OPERATION TO THE GENERAL PUBLIC TO BETWEEN 5:00 A.M. AND 10:00 P.M. SUNDAY THROUGH THURSDAY, AND 5:00 A.M. TO 11:00 P.M. FRI. AND SAT

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN

LOT 5 DETAILED SITE PLAN

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 SITE PLAN

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

SP05

SHEET NO.
55
OF 70 SHEETS

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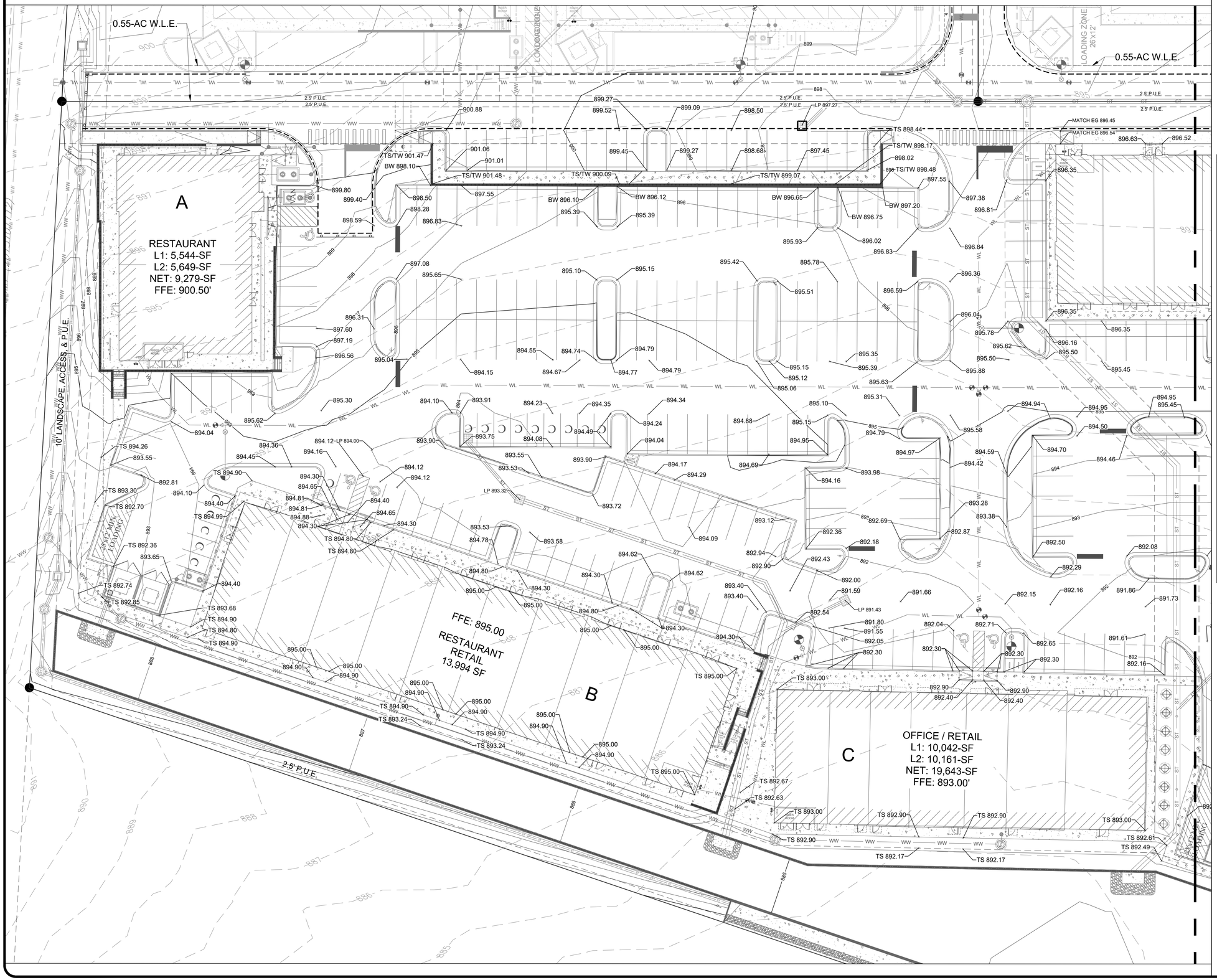
User: cholten
Last Modified: Sep. 15, 25 - 09:47
Plot Date/Time: Oct. 10, 25 - 16:20:50



LEGEND

PROPOSED	EXISTING	
800	800	CONTOURS
		PROPOSED RETAINING WALL
		ACCESSIBLE ROUTE
100.00		TOP OF PAVEMENT
100.00 TC		TOP OF CURB/CONCRETE
100.00 TG		TOP OF GRATE
100.00 LP		LOW POINT
100.00 HP		HIGH POINT
100.00 FS		FINISHED SLAB
100.00 TW		TOP OF WALL
100.00 BW		BOTTOM OF WALL
100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		COTTON SPINDLE WITH CHAPARRAL WASHER SET
		WATER METER
		UTILITY POLE
OU	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
3. ALL SIDEWALKS SHALL BE 6' WIDE. ALL TRAILS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
4. ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS SHALL HAVE A MAX. RUNNING SLOPE OF 5%.
6. ALL SIDEWALKS SHALL HAVE A MAX. CROSS SLOPE OF 2%.
7. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAN 30' REQUIRE A LEVEL LANDING.
8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 GRADING PLAN 1

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 GP05

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

GP05

SHEET NO.
56
OF 70 SHEETS

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User: chaden
Last Modified: Sep. 15, 25 - 09:47
Plot Date/Time: Oct. 03, 25 - 16:22:22

RETAIL
13,061 SF
FFE: 897.00

H

RETAIL
5,040-SF
FFE: 894.00

G

F

DAYCARE
14,6764-SF
FFE: 892.50'

D

RETAIL
9,057-SF
FFE: 892.50

25'x12' LOADING

6,045-SF GRASS PLAY AREA

R568058
TESCH, ROBERT E
VALLEY VISTA PH 1
BLOCK L, LOT 1
(OPEN SPACE)

GABRIELS HORN RO
(60' R.O.W.)

R567989
PANDAY, KIRAN P
& SUJAN
VALLEY VIST
BLOCK A

LOT 1 - HOA LANDSCAPE

2.5' P.U.E.

10' LS, ACCESS, & P.U.E.

EXIST. HYDRANT

EXIST. 6" PVC WL

EXIST. 16" PVC WW

20 10 0 20 40
SCALE IN FEET

LEGEND

PROPOSED	EXISTING	
800	800	CONTOURS
		PROPOSED RETAINING WALL
		ACCESSIBLE ROUTE
100.00		TOP OF PAVEMENT
100.00 TC		TOP OF CURB/CONCRETE
100.00 TG		TOP OF GRATE
100.00 LP		LOW POINT
100.00 HP		HIGH POINT
100.00 FS		FINISHED SLAB
100.00 TW		TOP OF WALL
100.00 BW		BOTTOM OF WALL
100.00 FG		FINISHED GROUND
		TREE TO REMAIN
		TREE TO BE REMOVED
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		COTTON SPINDLE WITH CHAPARRAL WASHER SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

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2. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
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8. ALL PAVEMENT SHALL BE CONCRETE WITH CURB AND GUTTER.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 GRADING PLAN 2

NO.	DESCRIPTION	BY	DATE

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5-GP06

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

GP06

SHEET NO.
57
OF 70 SHEETS

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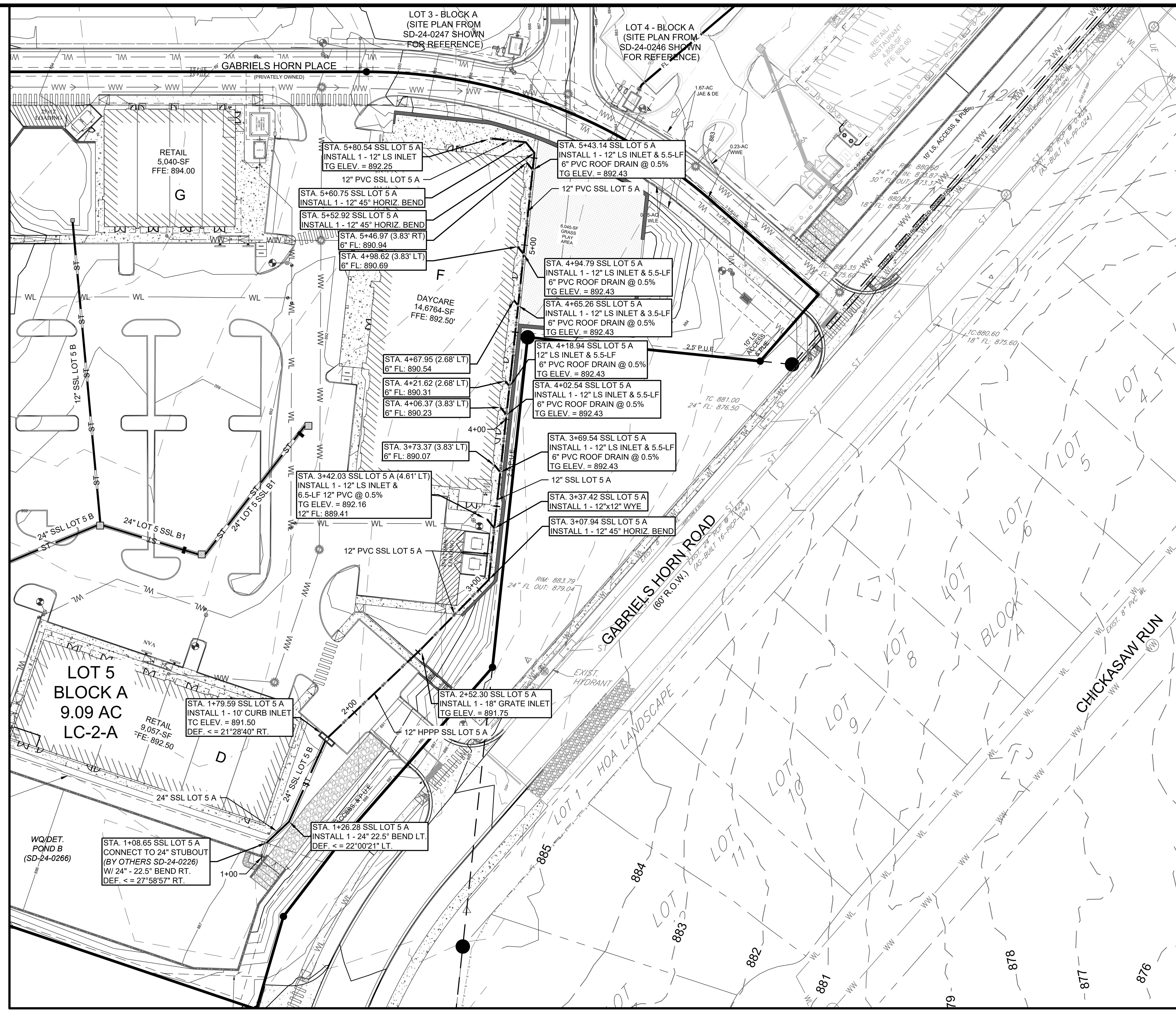

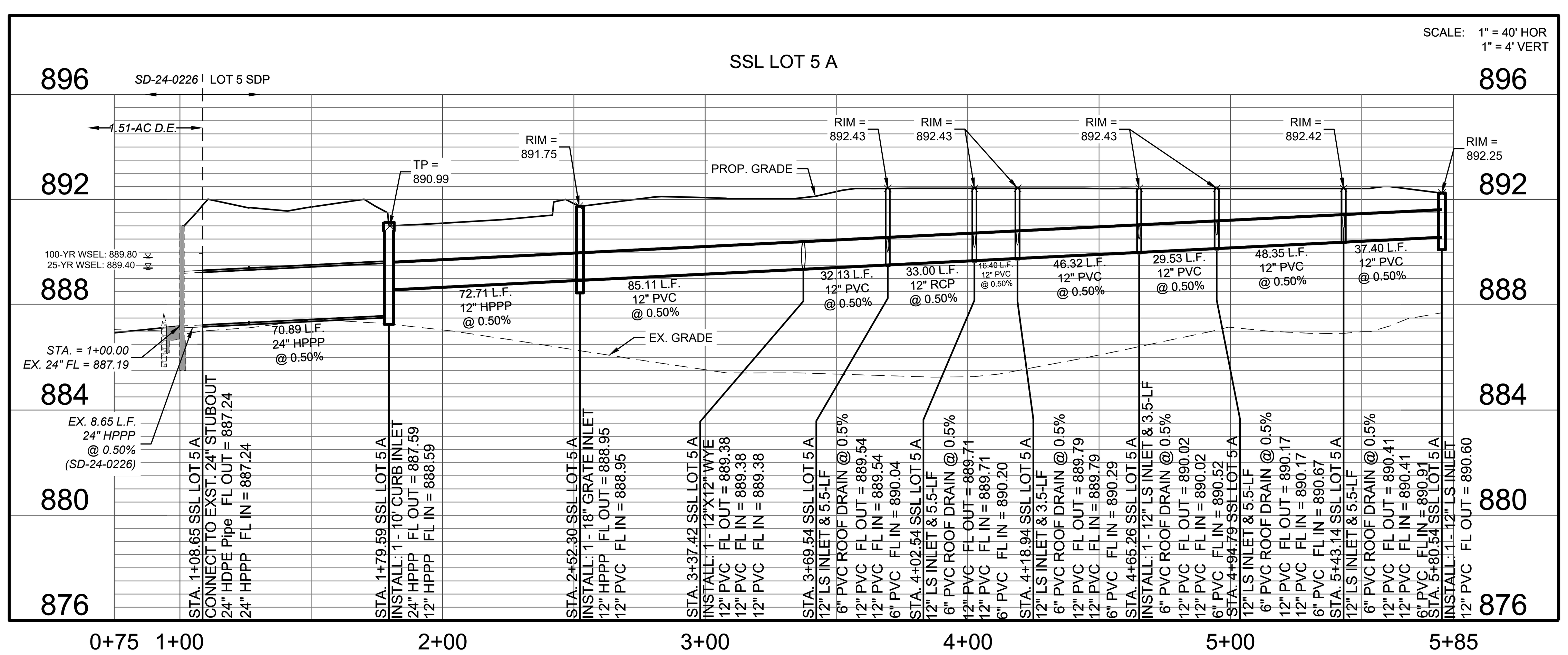

SCALE IN FEET (40 20 0 40 80)

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
WW	WWMH	WASTEWATER MANHOLE
ST	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
	CH	1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
	W	WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
	E	ELEC. UTILITY
	E	ELEC. MANHOLE
		LIGHT POLE
	T	TELEPHONE UTILITY
	F	UNDERGROUND FIBER OPTIC MARKER
	T	TELEPHONE MANHOLE
	G	UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE RCP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
4. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF LEANDER SPECIFICATIONS.
5. ALL BENDS AND FITTINGS SHALL BE PREFABRICATED BY MANUFACTURER. NO FIELD FABRICATION OF FITTINGS IS ALLOWED.

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 STORMSEWER PLAN AND PROFILE SHEET 1

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5-ST05

09/10/2025
STATE OF TEXAS — CHARLES R. HAGER V — 127034 — LICENSED PROFESSIONAL ENGINEER
CR Hager

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

ST05.1

SHEET NO. 58 OF 70 SHEETS

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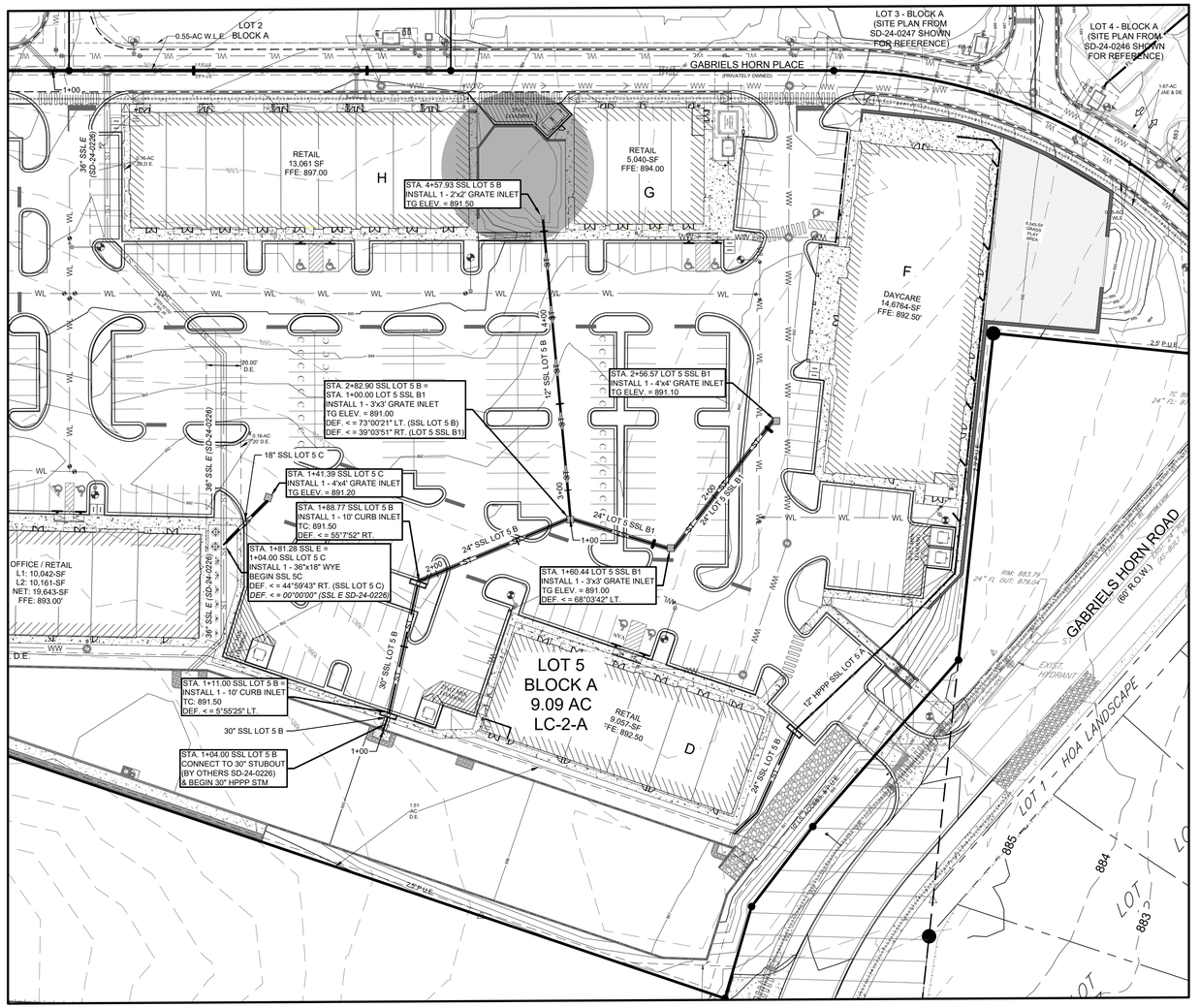

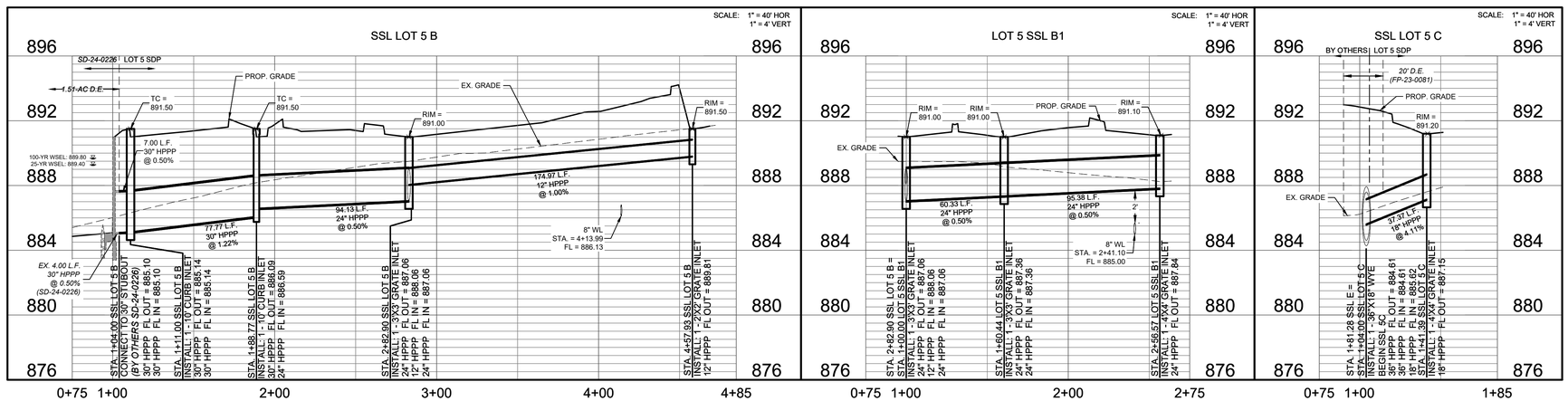

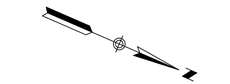

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
•		WASTEWATER SERVICE
WL	WL	WATER LINE
□		WATER SERVICE
	⊗	WATER VALVE
		FIRE HYDRANT
WWMH	WWMH	WASTEWATER MANHOLE
SSMH	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
	●	1/2" REBAR FOUND (OR AS NOTED)
	●	1/2" REBAR WITH CAP FOUND
	●	1/2" REBAR WITH CHAPARRAL CAP SET
⊠	□	WATER METER
	⌀	UTILITY POLE
	OU	OVERHEAD UTILITIES
	□	ELEC. UTILITY
	○	ELEC. MANHOLE
	☼	LIGHT POLE
	□	TELEPHONE UTILITY
	△	UNDERGROUND FIBER OPTIC MARKER
	○	TELEPHONE MANHOLE
	△	UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:
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2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 STORMSEWER PLAN AND PROFILE SHEET 2

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 ST05

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

ST05.2

SHEET NO. 59 OF 70 SHEETS

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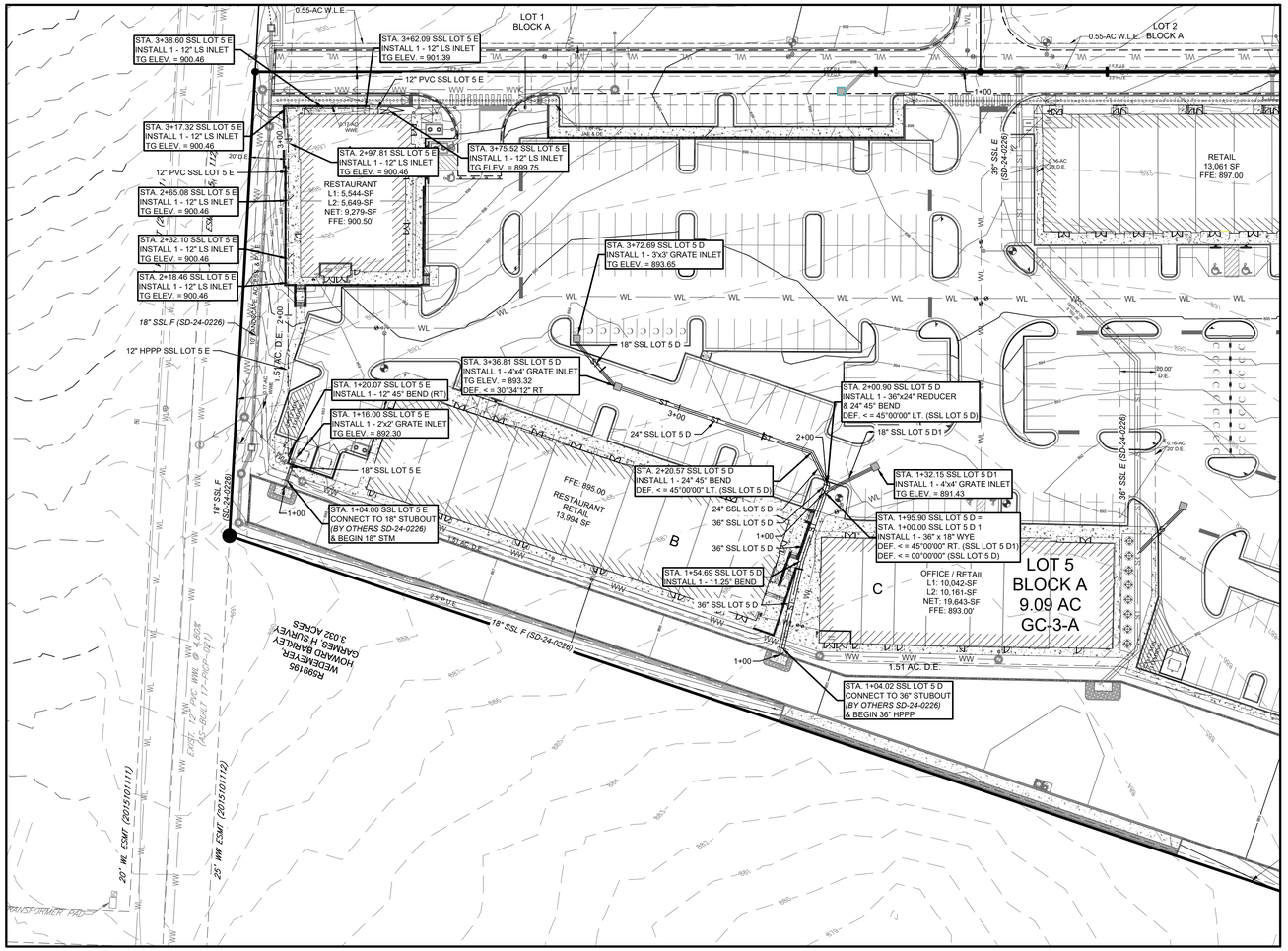

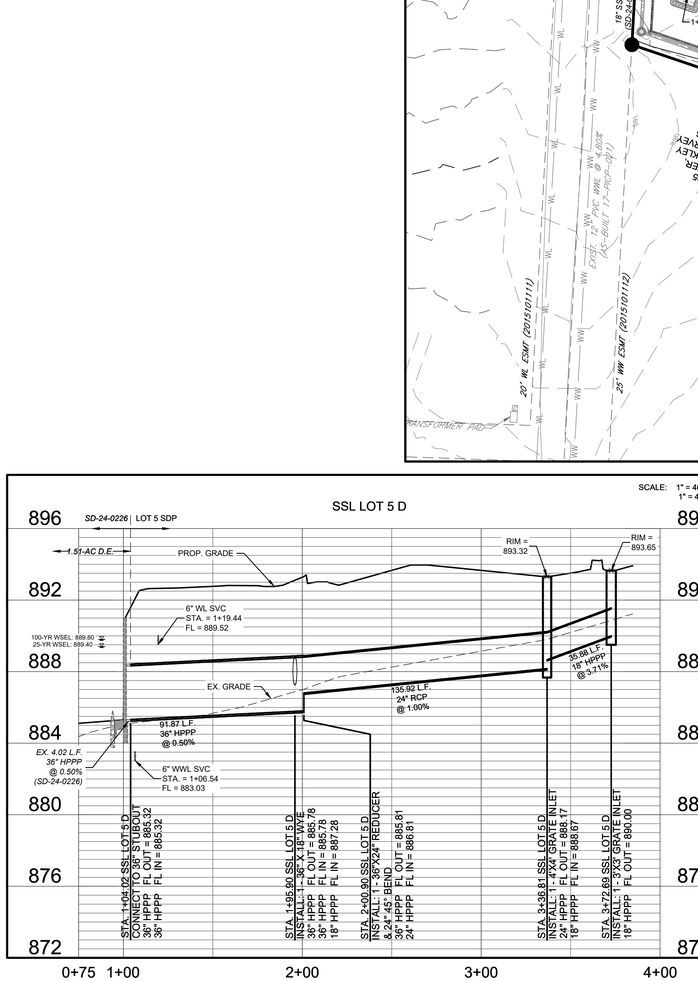

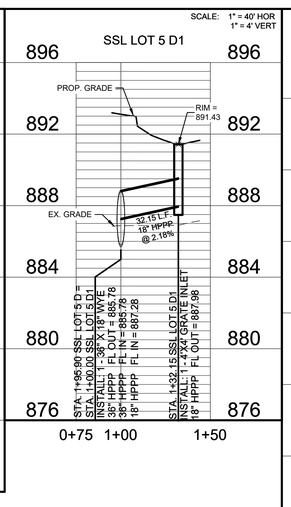

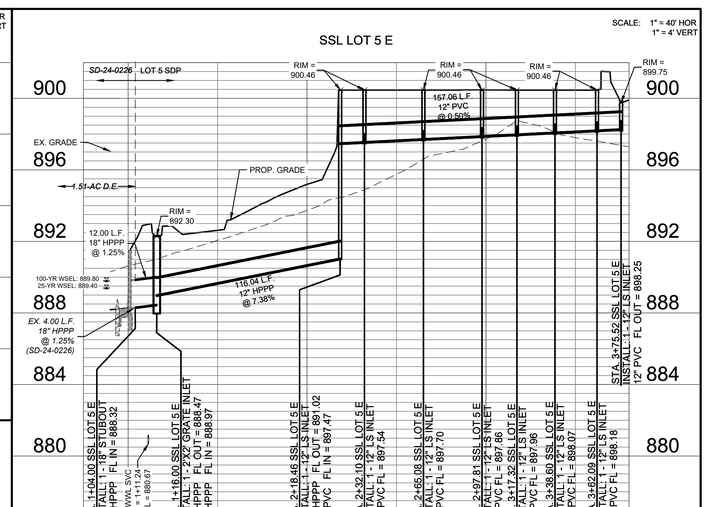

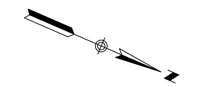

SCALE IN FEET
40 20 0 40 80

LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
•		WASTEWATER SERVICE
WL	WL	WATER LINE
□		WATER SERVICE
	⊗	WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
☒		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

NOTES:
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2. CONTRACTOR TO FILL AND COMPACT TO 95% DENSITY IN FILL SECTIONS OVER STORM SEWER LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 STORMSEWER PLAN AND PROFILE SHEET 3

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5-ST05

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

ST05.3

SHEET NO. 60 OF 70 SHEETS

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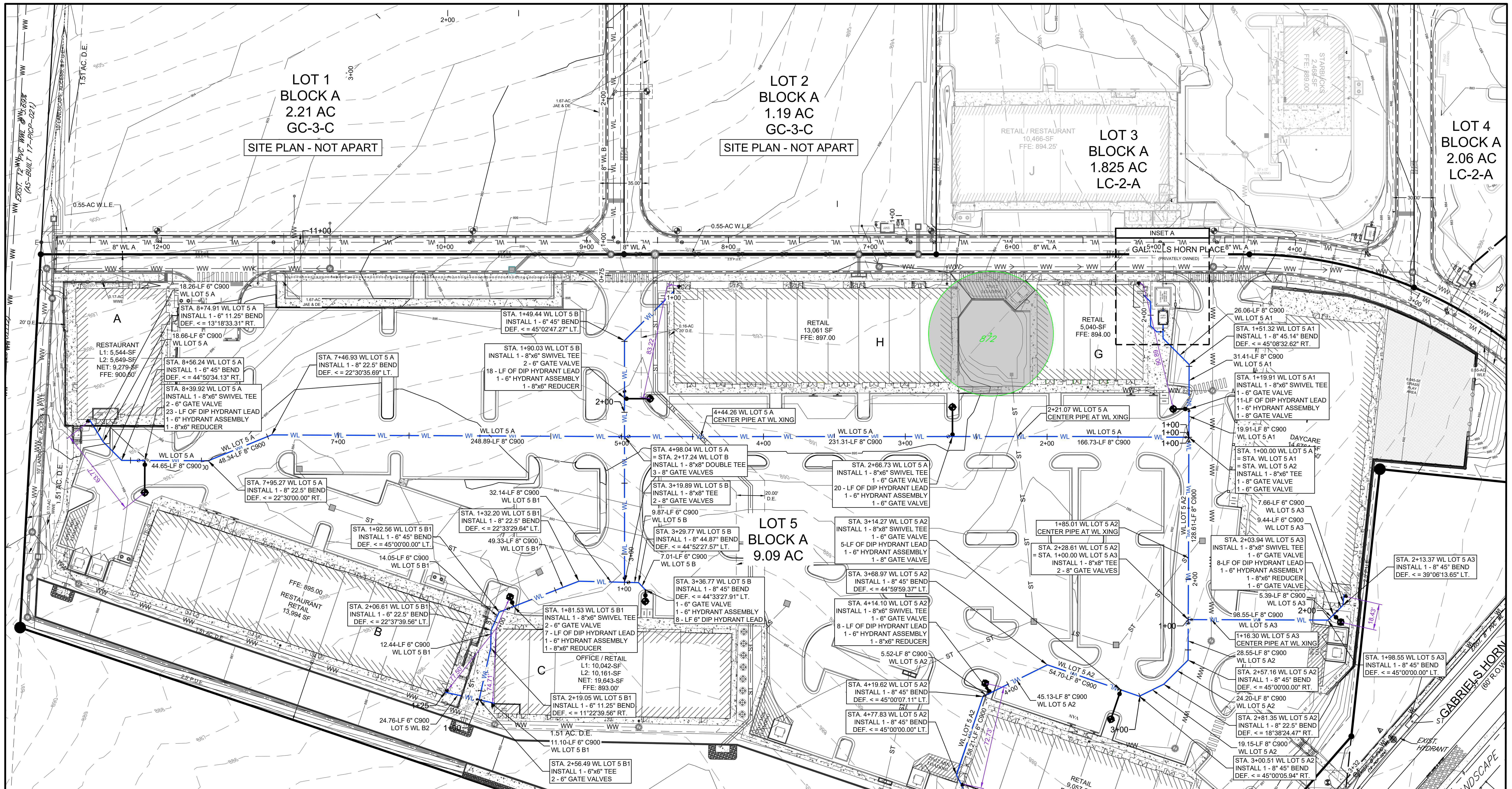
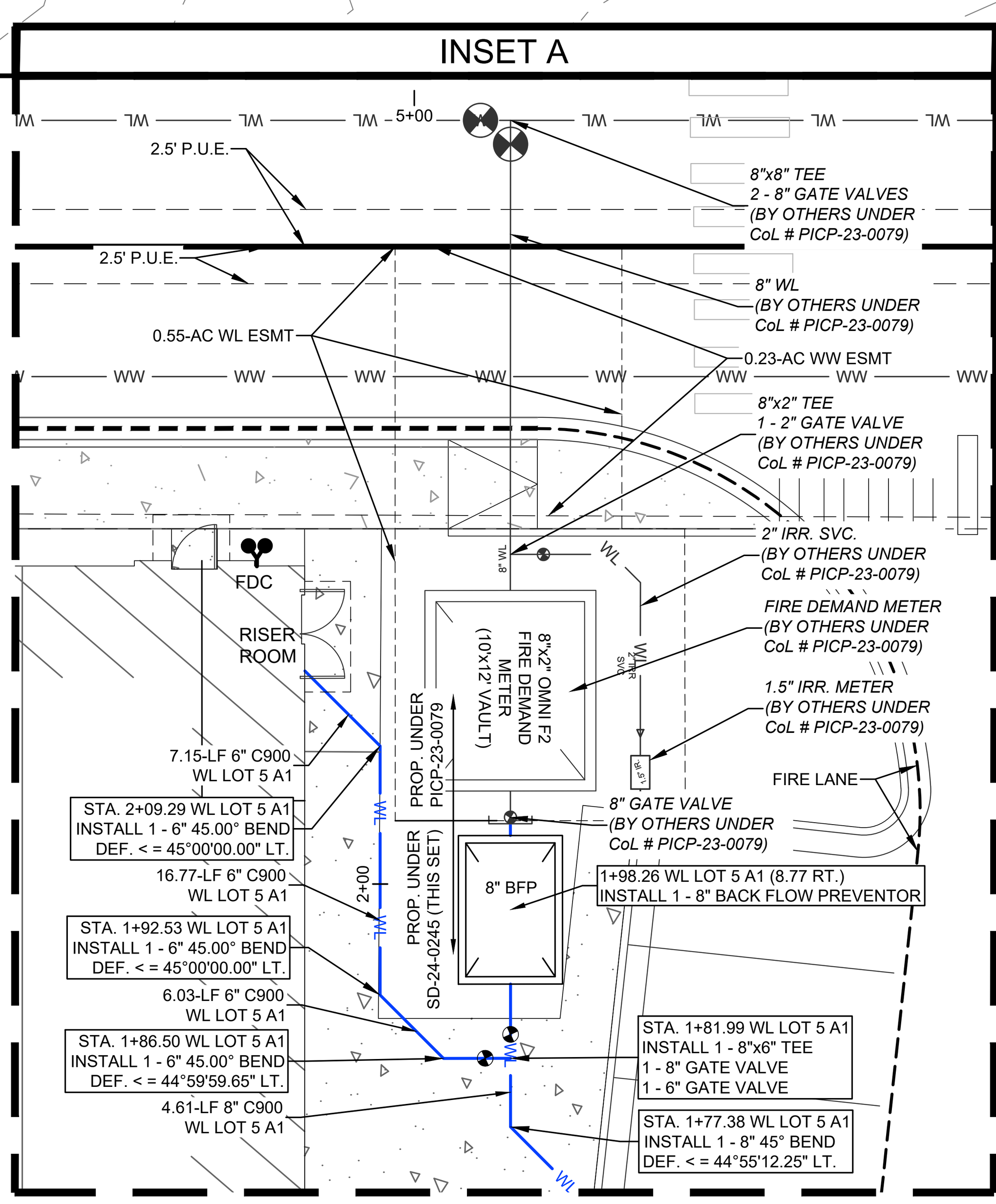
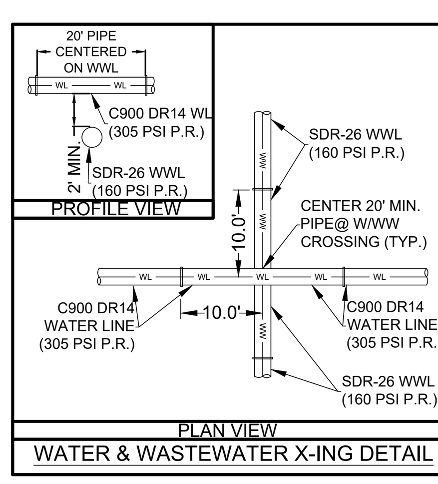
Plot Date/Time: Oct. 03, 25 - 16:25:54







WATER & WASTEWATER X-ING DETAIL

6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217 (7)(D).

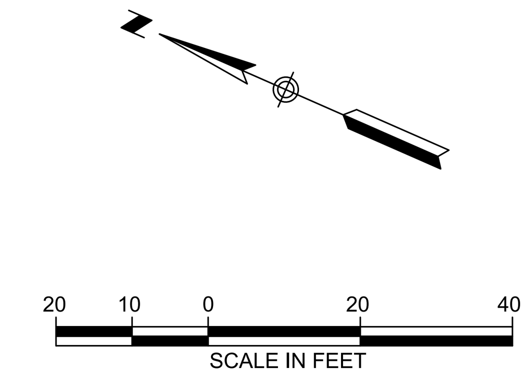
Gabriels Horn Development - Lot 5 - Block A

Water / Wastewater Demand Summary

Description	Quantity	LUE	Land Use	LUE's	Area
Lot 5	42,301	1,660	Retail (SF)	25.5	9.09
	19,365	200	Restaurant (SF)	96.8	
	24,779	3,000	Office & Day Care(SF)	8.3	
			TOTAL	**131**	**9.09**

Water Flow Calculation

Peak Hour	Q = 2.2 GPM * LUE =	**287.2**	**GPM**
Peak Day	Q = 1.3 GPM* LUE =	**169.7**	**GPM**



LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
WW	WWMH	WASTEWATER MANHOLE
ST	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
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		1/2" REBAR WITH CHAPARRAL CAP SET
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	E	ELEC. UTILITY
	E	ELEC. MANHOLE
		LIGHT POLE
	T	TELEPHONE UTILITY
	F	UNDERGROUND FIBER OPTIC MARKER
	T	TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
		CHAIN LINK FENCE

UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. ALL POTABLE WATER LINES SHALL BE AWWA C900-DR14 PVC (WITH MIN. 305 PSI PRESSURE RATING). FIRE HYDRANT LEADS SHALL BE CLASS 350 DUCTILE IRON.
3. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER UTILITY & STORM LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
4. N0. 10 SOLID COPPER WIRE SHALL BE INSTALLED AS TRACER WIRE ABOVE ALL NONMETALLIC WATER LINES.
5. ALL WATER SERVICE LINES SHALL INCLUDE GATE VALVE AT MAIN LINE.
6. THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH LEANDER FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE.
7. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
8. TAPPING SLEEVES TO BE SMITH-BLAIR 663 OR JCM 439 ALL STAINLESS TAPPING SLEEVES.
9. WATER SERVICE IS PROVIDED BY THE CITY OF LEANDER.
10. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL WATER AND WASTEWATER CROSSINGS CONFORM TO TCEQ DESIGN CRITERIA.
11. ALL STORM SEWER PIPE SHALL BE HP-PP OR APPROVED EQUAL. ALL PUBLIC STORM SEWERS SHALL BE HPPP. STORM SEWER LINES OUTSIDE OF PAVEMENT AND EASEMENTS MAY BE INSTALLED AS PVC OR APPROVED EQUAL.
12. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE GRAVITY WASTEWATER PIPE AS PER TCEQ RULES.
13. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 UNLESS OTHERWISE NOTED
14. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. INSTALL CLEANOUTS WITHIN GRASSED AREAS PER CITY OF AUSTIN STANDARD DETAIL NO. 520-AW-03. CLEANOUTS WITHIN PAVED AREAS SHALL BE INSTALLED PER STANDARD DETAIL NO. 520S-4-SM AND SHALL REQUIRE HEAVY DUTY TRAFFIC RATED HOUSINGS AND LIDS.
15. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE PROP. GROUND ELEVATION.
16. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY IS REQUIRED ON ALL WATER LINES IN ACCORDANCE WITH AWWA STANDARD C510-92 AWWA STANDARD C510-92

K. FRIESE MODELING RESULTS

LOT 5

MIN. PRESSURE = 123 psi (1,179 HGL)

MAX. PRESSURE = 137 psi (1,207 HGL)

Fire flow available = 3,980 gpm at 26 psi residual

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT

TCEQ CONTRIBUTING ZONE PLAN

LOT 5 WATERLINE PLAN AND PROFILE

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5-WL05

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

WL05

SHEET NO. 61 OF 70 SHEETS

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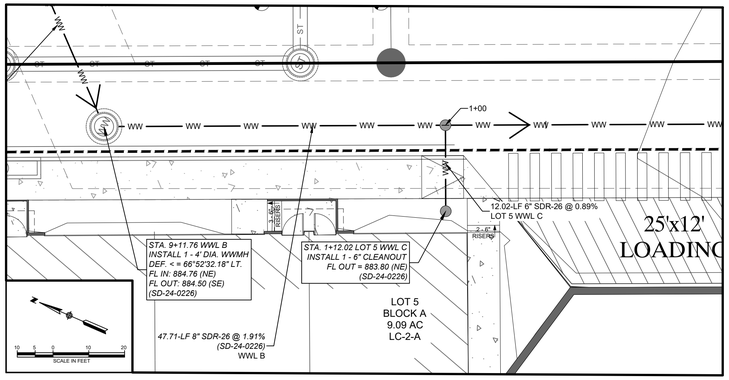
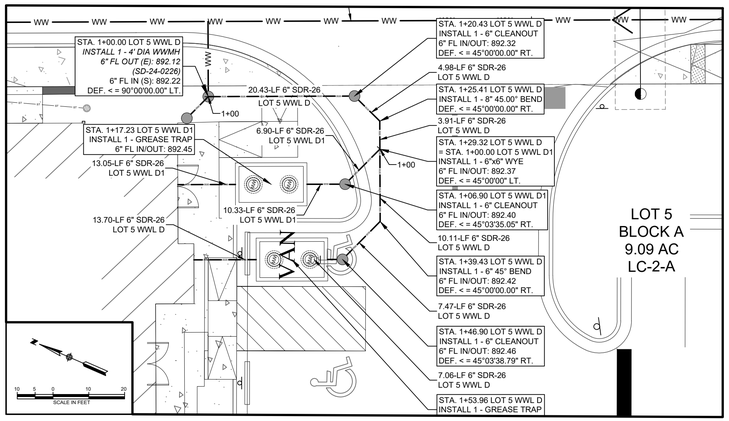
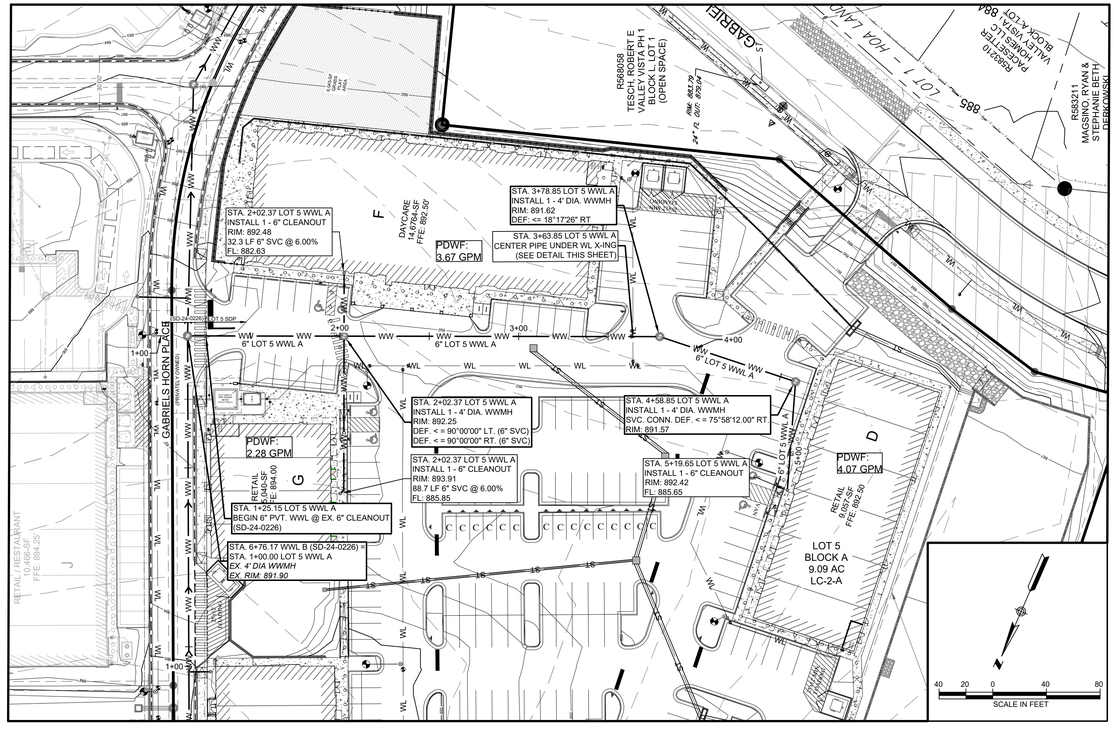


BUILDING H - WWL INSET



BUILDING A - WWL INSET



BUILDINGS D, G, & H - WWL INSET

Gabriels Horn Development - Lot 5 - Block A					
Water / Wastewater Demand Summary					
Description	**Quantity**	**Conversi**	**Land Use**	**LUE's**	**(AC)**
Lot 5	42,301	1,660	Retail (SF)	25.5	9.09
	19,365	200	Restaurant (SF)	96.8	
	24,779	3,000	Office & Day Care(SF)	8.3	
			TOTAL	**131**	**9.09**

Wastewater Flow Calculation

Average Dry Weather Flow

Q = 245 GPD * LUE = 31,989.0 GPD

Q =0.170 GPM * LUE = 22.2 GPM

Peak Dry Weather

((18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F = 88.7 GPM

Inflow/Infiltration

AREA * 750 GPD/1440 = 119.19 acres * 0.5208 = 4.7 GPM

Peak Wet Weather

Peak Dry Weather + Inflow/Infiltration = **93.5** **GPM**

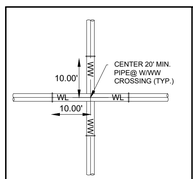
Water Flow Calculation

Peak Hour

Q = 2.2 GPM * LUE = **287.2** **GPM**

Peak Day

Q = 1.3 GPM* LUE = **169.7** **GPM**



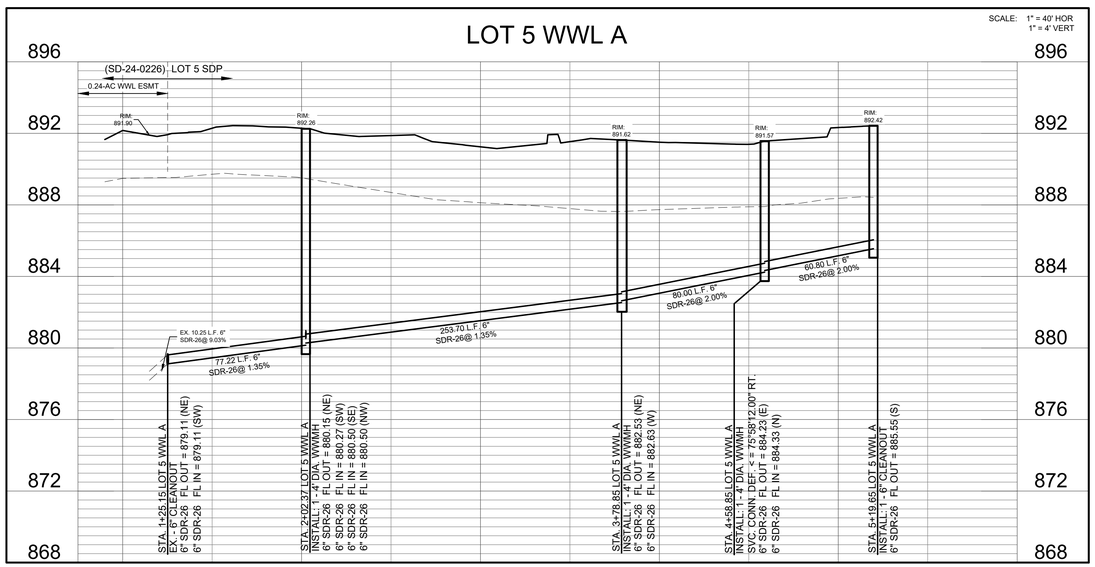
WATER & WASTEWATER
CROSSING DETAIL

6 INCHES TO 2 FEET OF CLEARANCE

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND MUST BE CONSTRUCTED WITH LESS THAN 2 FEET BETWEEN THE PIPES' OUTER WALLS MUST BE CONSTRUCTED USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 6 INCHES OF SEPARATION BETWEEN OUTER EDGES AND BE CENTERED AT THE CROSSING.
3. CROSSING PIPE MUST BE TERMINATED AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE

2 FEET OR MORE OF CLEARANCE BETWEEN PIPES

1. ANY CROSSING WHERE A WASTEWATER PIPE CROSSES BENEATH A WATER LINE AND IS NOT CONSTRUCTED USING USING 150 PSI PRESSURE CLASS, CORROSION-RESISTANT, NON-BRITTLE PIPE WITHIN NINE FEET OF THE WATER LINE (18 FOOT LENGTH TOTAL).
2. THE CROSSING PIPES MUST HAVE AT LEAST 2 FEET OF SEPARATION BETWEEN OUTER EDGES AND MUST BE CENTERED AT CROSSING.
3. THEY CROSSING PIPE MUST BE ENCASED IN CEMENT-STABILIZED SAND BACKFILL THAT MEETS THE REQUIREMENTS STATED IN SUBPARAGRAPH D OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CHAPTER 217 (7)(D).



LEGEND

PROPOSED	EXISTING	
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
		WASTEWATER SERVICE
WL	WL	WATER LINE
		WATER SERVICE
		WATER VALVE
		FIRE HYDRANT
	WWMH	WASTEWATER MANHOLE
	SSMH	STORMSEWER MANHOLE
		CURB INLET
		GRATE INLET
		1/2" REBAR FOUND (OR AS NOTED)
		1/2" REBAR WITH CAP FOUND
		1/2" REBAR WITH CHAPARRAL CAP SET
		WATER METER
		UTILITY POLE
	OU	OVERHEAD UTILITIES
		ELEC. UTILITY
		ELEC. MANHOLE
		LIGHT POLE
		TELEPHONE UTILITY
		UNDERGROUND FIBER OPTIC MARKER
		TELEPHONE MANHOLE
		UNDERGROUND GAS MARKER
	O	CHAIN LINK FENCE

UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FILL AND COMPACT TO 98% DENSITY IN FILL SECTIONS OVER UTILITY & STORM LINES. 2.0'(MIN) COVER OVER WATER PRIOR TO CONSTRUCTION.
3. ALL ON-SITE UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY THE UTILITY TO BE OTHERWISE LOCATED (SECTION 25-2-1125).
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7. ALL GRAVITY WASTEWATER LINES SHALL BE SDR-26 WWL ASTM D3034 (160 MIN. PSI) UNLESS OTHERWISE NOTED.
8. ALL SERVICES SHALL TERMINATE WITH A 2-WAY CLEANOUT. INSTALL CLEANOUTS WITHIN GRASSED AREAS PER CITY OF AUSTIN STANDARD DETAIL NO. 520-AW-03. CLEANOUTS WITHIN PAVED AREAS SHALL BE INSTALLED PER STANDARD DETAIL NO. 520S-4-SM AND SHALL REQUIRE HEAVY DUTY TRAFFIC RATED HOUSINGS AND LIDS.
9. MANHOLES WITHIN GRASSED AREAS SHALL BE INSTALLED WITH BOLTED AND GASKETED LIDS AND SHALL BE SET AT A MINIMUM ELEVATION OF 0.5' ABOVE PROP. GROUND ELEVATION.

CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 WASTEWATER PLAN AND PROFILE SHEET 1

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 WWPS

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: WW05.1

SHEET NO. 62 OF 70 SHEETS

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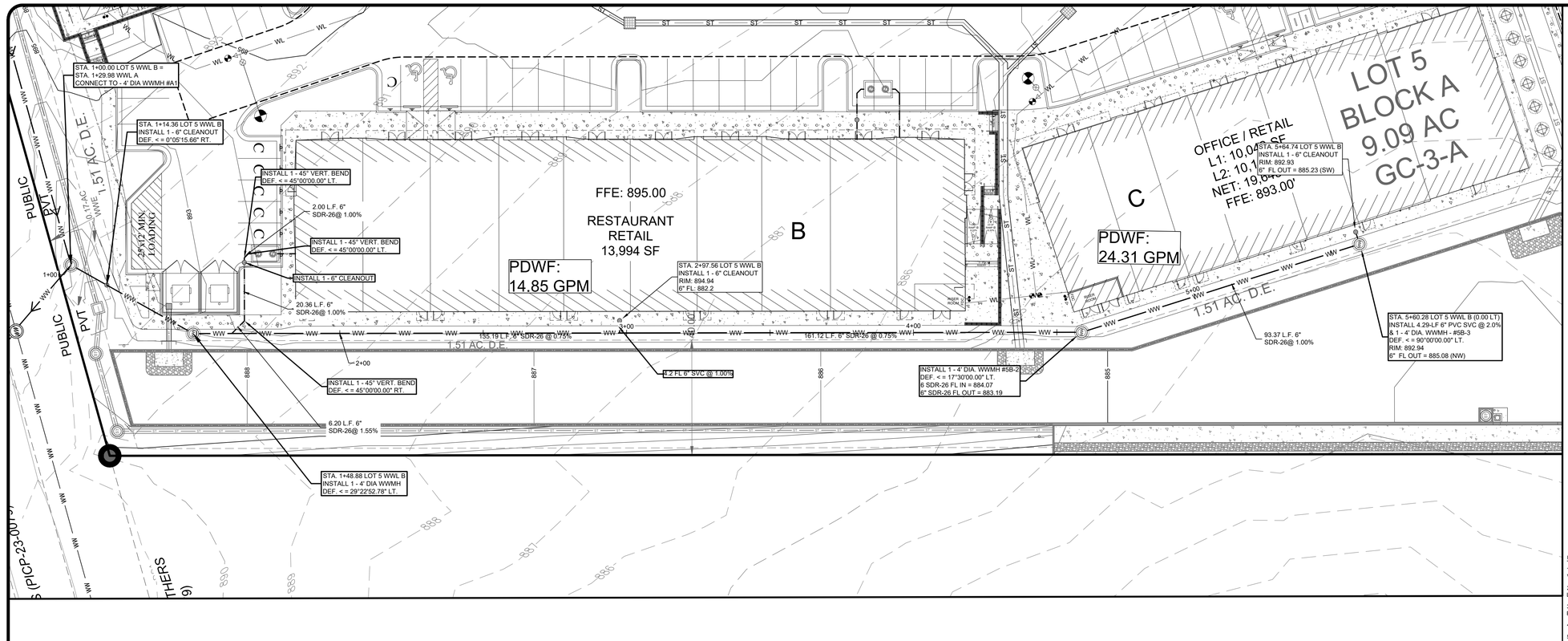

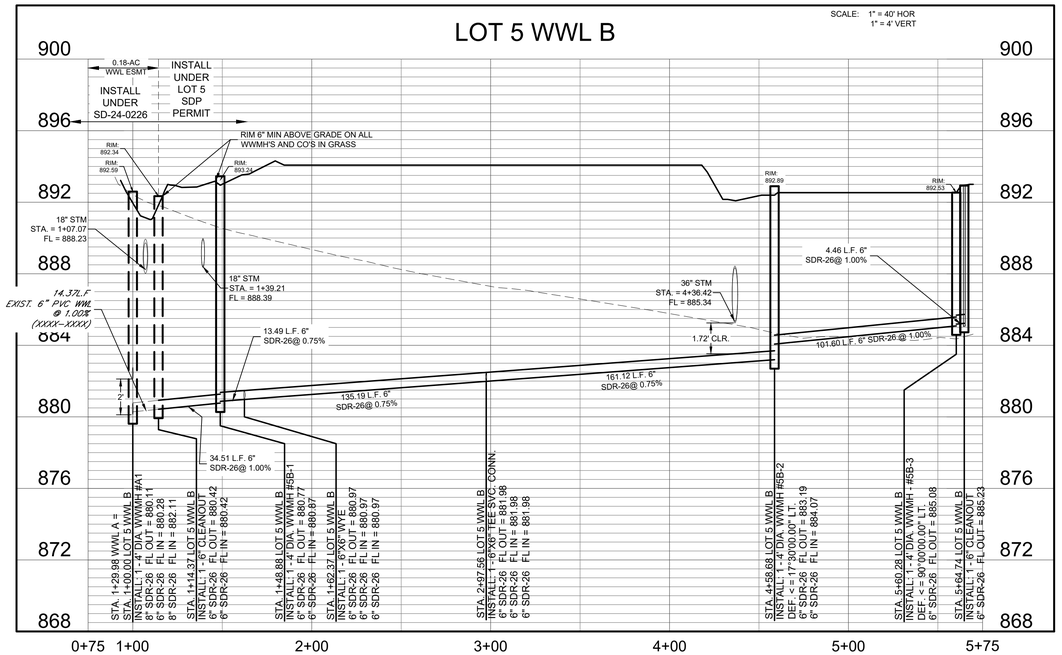

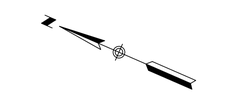

LEGEND

PROPOSED	EXISTING	
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		WASTEWATER SERVICE
WL	WL	WATER LINE
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		GRATE INLET
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		UTILITY POLE
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		ELEC. UTILITY
		ELEC. MANHOLE
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		UNDERGROUND FIBER OPTIC MARKER
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Gabriels Horn Development - Lot 5 - Block A

Water / Wastewater Demand Summary

Description	Quantity	Conversi	Land Use	LUE's	(AC)
Lot 5	42,301	1,660	Retail (SF)	25.5	9.09
	19,365	200	Restaurant (SF)	96.8	
	24,779	3,000	Office & Day Care(SF)	8.3	
			TOTAL	**131**	**9.09**

Wastewater Flow Calculation

Average Dry Weather Flow
Q = 245 GPD * LUE = 31,989.0 GPD
Q =0.170 GPM * LUE = 22.2 GPM

Peak Dry Weather
((18 + (0.0206* F)^0.5) /(4+(0.0206*F)^0.5) * F = 88.7 GPM

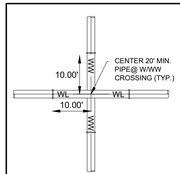
Inflow/Infiltration
AREA * 750 GPD/1440 = 119.19 acres * 0.5208 = 4.7 GPM

Peak Wet Weather
Peak Dry Weather + Inflow/Infiltration = **93.5** **GPM**

Water Flow Calculation

Peak Hour
Q = 2.2 GPM * LUE = **287.2** **GPM**

Peak Day
Q = 1.3 GPM* LUE = **169.7** **GPM**



WATER & WASTEWATER CROSSING DETAIL

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CITY OF LEANDER APPROVAL

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
LOT 5 WASTEWATER PLAN AND PROFILE SHEET 2

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: LOT 5 WWS5

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

WW05.2

SHEET NO.
63
OF 70 SHEETS

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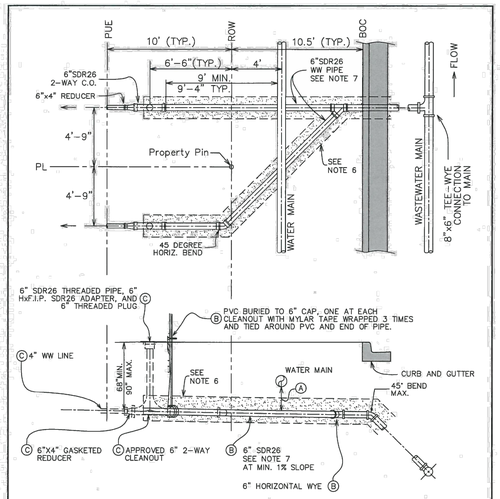


NOTES:

Ⓐ WATER MAIN SHALL CROSS ABOVE 6" WASTEWATER SERVICE, TWO-FOOT (2') MINIMUM VERTICAL SEPARATION.

Ⓑ TO BE INSTALLED AND INSPECTED DURING SUBDIVISION CONSTRUCTION. UTILITY CONTRACTOR INSTALLS SERVICE STUB WITH PLUG OR CAP.

Ⓒ 2-WAY CLEANOUTS, 6" HxF.I.P. ADAPTER, REDUCER, AND 4" SERVICE LINE INSTALLED BY BLDG. PLUMBER. PERMITS DEPARTMENT SHALL INSPECT CUSTOMER'S WASTEWATER LINE AND ALL APPURTENANCES INSTALLED BY BUILDING PLUMBER.

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
09/26/18

City Of Leander, Texas
DETAIL #101-2
1 OF 2
WASTEWATER SERVICE CONNECTIONS

NOTES:

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER CONNECTION TO MAIN, 6" HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH, AND PLUG(S) FOR 6" SERVICE BRANCH STUB. CONTRACTOR TIES MYLAR TAPE TO END OF 6" STUB, WRAPS 3 TIMES AROUND LENGTH OF PVC BURIED TO THE DEPTH OF THE 6" STUB AND TIES TO TOP OF PVC EXTENDING A MINIMUM OF 2 FEET ABOVE GROUND.

   ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN 1% (1/8" PER FOOT) MINIMUM TO 45° MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER. IF GREATER THAN 8', OTHERWISE THE INSTALLED DEPTH WILL TYPICALLY BE 6' TO 8'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, REFER TO DETAIL 520-6. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY CITY OF LEANDER CONSTRUCTION INSPECTION PERSONNEL.

2. CUSTOMER REMOVES PLUG FROM 6" SERVICE LINE STUB, INSTALLS 6" 2-WAY CLEANOUT, 6" BY 4" REDUCER, RISER FOR CLEANOUT, 6" HxF.I.P. ADAPTER, 6" THREADED PLUG, AND 4" SERVICE LINE TO STRUCTURE. IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY FROM STRUCTURE TO SEWER SERVICE STUB & WASTEWATER MAIN, PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.

3. CUSTOMER IS RESPONSIBLE FOR PUBLIC PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO CITY SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL 2-WAY-CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.

4. CITY OF LEANDER ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO THE CITY'S WASTEWATER SYSTEM. FOR MAINTENANCE PURPOSES, THE CITY'S RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2-WAY-CLEANOUT.

5. PIPING AND TUBING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION SECTION 510.3 (14) UNLESS OTHERWISE NOTED ON THIS DETAIL. MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B). BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MINIMUM COVER BELOW FINAL STREET GRADE OF 4'2". ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.

6. ALL SANITARY SEWER PIPE WITHIN 9' OF WATER MAINS SHALL BE BEDDED IN CEMENT STABILIZED SAND PER TCEQ CHAPTER 217 & 290 REQUIREMENTS. BEDDING SHALL EXTEND A MINIMUM OF 12" ABOVE PIPE, 4" BELOW PIPE, AND 12" BEYOND JOINTS AT EACH END.

7. PIPE MATERIAL FOR WASTEWATER SERVICES SHALL BE 6" SDR-26 PVC D2241 160 PSI RATED.

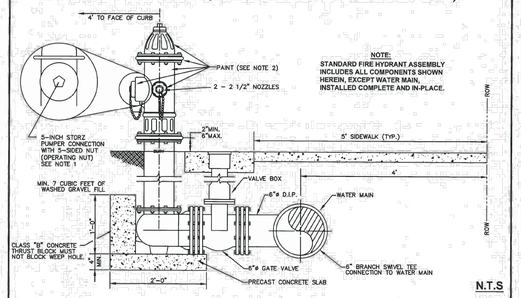
8. NO METER BOX OR CLEAN OUT SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEERING DEPT.

9. NO JOINTS SHALL BE PERMITTED BETWEEN THE 6"x6" HORIZONTAL WYE AND THE 6" 2-WAY CLEANOUT EXCEPT FOR THE 6" 45-DEGREE BEND REQUIRED FOR DOUBLE SERVICES.

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
09/26/18

City Of Leander, Texas
DETAIL #101-2
2 OF 2
WASTEWATER SERVICE CONNECTIONS

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)



N.T.S

NOTES:

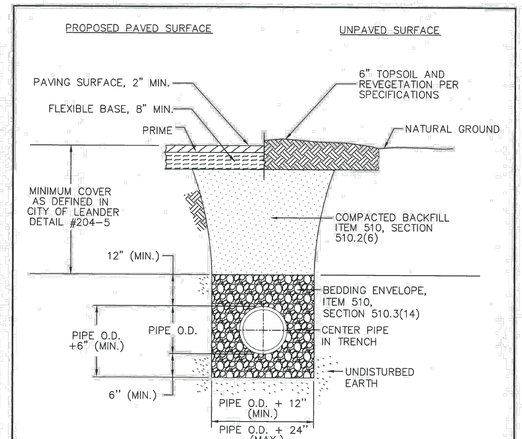
1. FIRE HYDRANT SHALL BE CLOW MEDALLION F2545, AMERICAN DARLING B-84-B-5, MUELLER SUPER CENTURION, EJ 5CD250 WATERMASTER, KENNEDY K81D GUARDIAN, AVK 2780, OR APPROVED EQUAL VIA SUBMITTAL PROCESS. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5-INCH STORZ PUMPER NOZZLE; 1.5-INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE FACTORY PAINTED WITH FLYNT ALUMINUM SILVER PAINT OR SHERWIN WILLIAMS SILVER B59S11. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY OR IF PAINT IS FLAT IN APPEARANCE.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:

6. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
7. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM RADIUS TANGENT POINT
8. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN THREE FEET (3') IN ALL DIRECTIONS FROM F.H.
9. 5-INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED.

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
02/05/19

City Of Leander, Texas
DETAIL #101-4
STANDARD FIRE HYDRANT ASSEMBLY



NOTES:

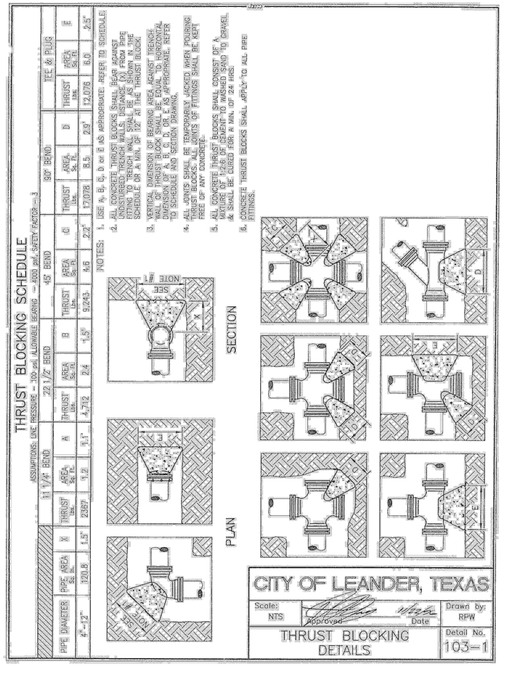
1. SEE CITY OF LEANDER DETAIL #104-2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

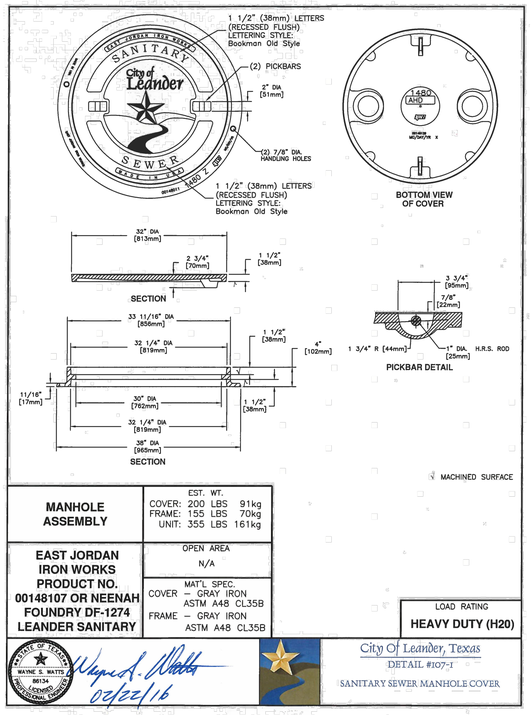
REFERENCES:

1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

MICHAEL LAFFERTY 118708 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
2019-05-23

City Of Leander, Texas
DETAIL #104-1
TYPICAL PIPE TRENCH AND EMBEDMENT

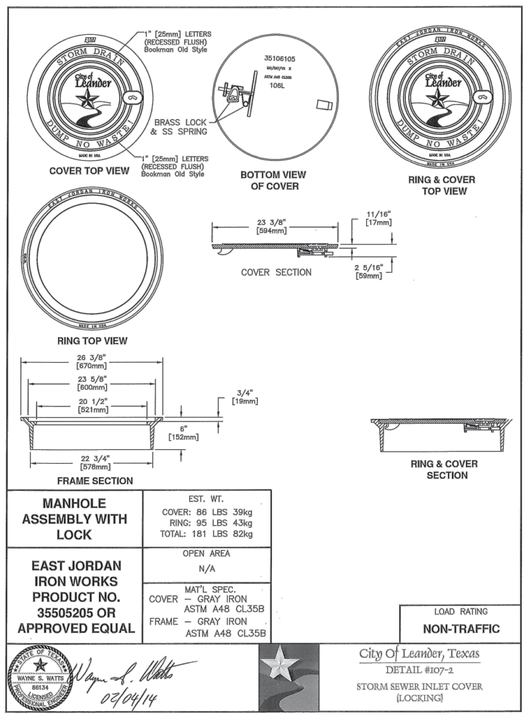




MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148107 OR NEENAH FOUNDRY DF-1274 LEANDER SANITARY	OPEN AREA N/A MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B
	LOAD RATING HEAVY DUTY (H20)

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
02/22/16

City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER



MANHOLE ASSEMBLY WITH LOCK	EST. WT. COVER: 86 LBS 39kg RING: 95 LBS 43kg TOTAL: 181 LBS 82kg
EAST JORDAN IRON WORKS PRODUCT NO. 35505205 OR APPROVED EQUAL	OPEN AREA N/A MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B
	LOAD RATING NON-TRAFFIC

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
02/04/14

City Of Leander, Texas
DETAIL #107-2
STORM SEWER INLET COVER
(LOCKING)

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN

STANDARD DETAILS SHEET 1

NO.	DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DT01

SHEET NO.
64
OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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Last Modified: Sep. 15, 25 - 09:48
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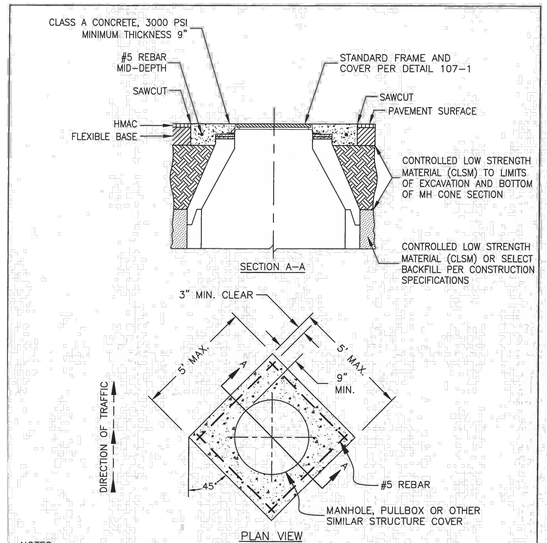
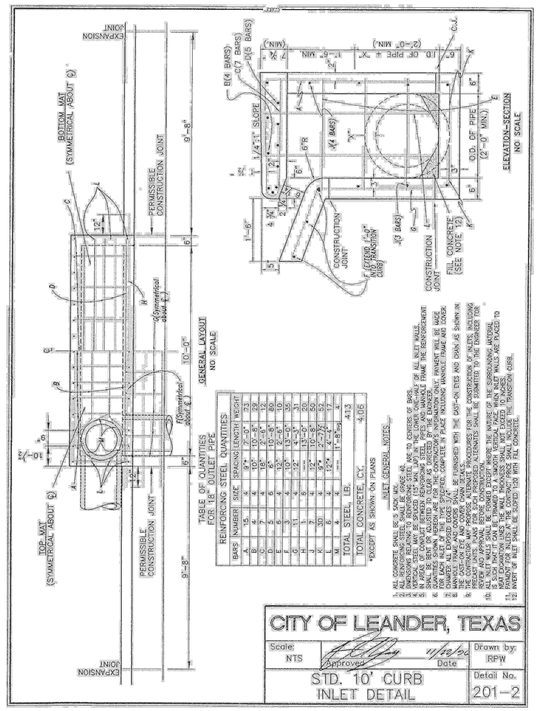


NOTES:
1. CONCRETE SHALL BE CLASS A, 3000 PSI MINIMUM AND SHALL BE REINFORCED WITH #5 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO SAW CUT PAVEMENT EDGE.
2. PLACEMENT OF CLSM SHALL BE BELOW FLEXIBLE BASE LAYER TO LIMITS OF EXCAVATION.
3. INSTALLATION OF HMAC OVER CONCRETE ADJUSTMENT SHALL NOT BE ALLOWED.
4. INSTALLATION OF CONCRETE CASTING ADJUSTMENT IS REQUIRED FOR ALL TYPES OF MANHOLES TO BE LOCATED IN THE ROADWAY.

STATE OF TEXAS · WAYNE S. WATTS · 88134 · LICENSED PROFESSIONAL ENGINEER
02/22/17

City Of Leander, Texas
DETAIL #107-4
MANHOLE CASTING ADJUSTMENT



CITY OF LEANDER, TEXAS
Scale: NTS · Approved · Date 11/20/20 · Drawn by: RPW
STD. 10' CURB INLET DETAIL · Detail No. 201-2

ARTERIAL ROADWAYS	
DROPOFF HEIGHT/ CONDITION	RAIL OPTIONS
< 30" DROPOFF	TXDOT PRD-13 TY C or TY E
≥ 30" DROPOFF OR ALONG BICYCLE PATH	TXDOT PRD-13 TY E

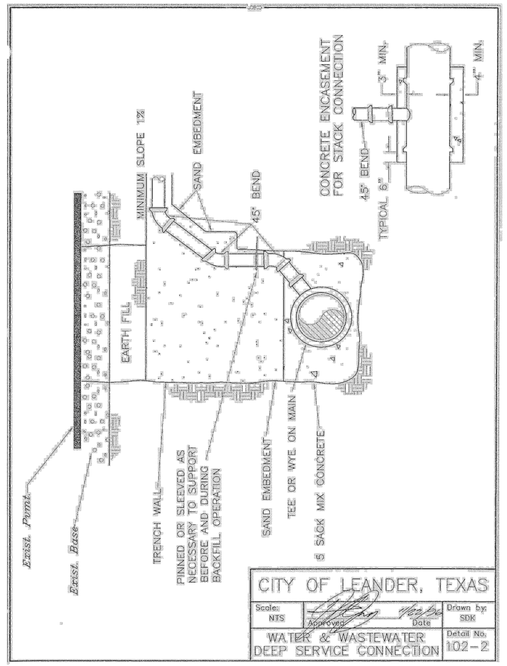
ALL OTHER ROADWAY CLASSIFICATIONS	
DROPOFF HEIGHT/ CONDITION	RAIL OPTIONS
< 30" DROPOFF	TXDOT PRD-13 TY C, TXDOT PRD-13 TY E, or COA 707S-2
≥ 30" DROPOFF OR ALONG BICYCLE PATH	TXDOT PRD-13 TY E or COA 707S-2

NOTES:
1. BICYCLE PATHS INCLUDE ALL SIDEWALKS OR PATHS GREATER THAN SIX FEET (6') IN WIDTH.
2. HANDRAIL TYPE AND FINISH SHALL REMAIN CONSISTENT AT EACH INSTALLATION LOCATION (CULVERT CROSSING, DROPOFF, ETC.).
3. ALL HANDRAIL INSTALLED ALONG ARTERIAL ROADWAYS SHALL BE GALVANIZED.
4. HANDRAIL INSTALLED ALONG ALL OTHER ROADWAYS SHALL BE GALVANIZED OR FACTORY POWDER-COATED BLACK.

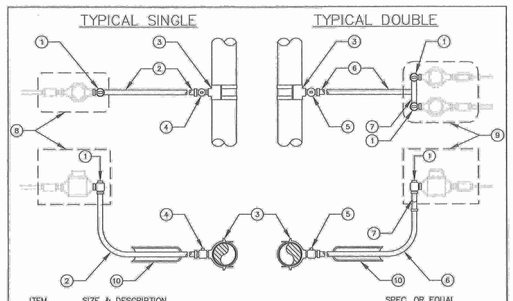
REFERENCES:
1. CITY OF AUSTIN STANDARD NO. 707S-2 PEDESTRIAN HANDRAIL OPTION 1.
2. TEXAS DEPARTMENT OF TRANSPORTATION PEDESTRIAN HANDRAILS DETAIL PRD-13.

STATE OF TEXAS · MICHAEL LAFFERTY · 118708 · LICENSED PROFESSIONAL ENGINEER
2020-04-07

City Of Leander, Texas
DETAIL #202-4
PEDESTRIAN HANDRAIL



CITY OF LEANDER, TEXAS
Scale: NTS · Approved · Date 11/20/20 · Drawn by: SDK
WATER & WASTEWATER DEEP SERVICE CONNECTION · Detail No. 102-2

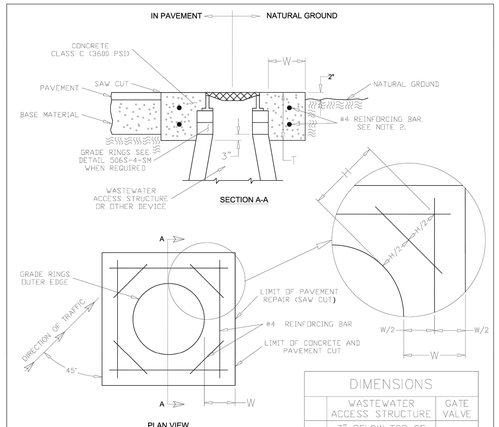


ITEM	SIZE & DESCRIPTION	SPEC. OR EQUAL
1	1" X 1" ANGLE METER STOP, LOCKING	AS APPROVED
2	1" SDR9 POLYETHYLENE TUBING	CLASS 250
3	EPOXY COATED DUCTILE IRON TAPPING SADDLE	AS APPROVED
4	1" CORPORATION STOP	AS APPROVED
5	1 1/2" CORPORATION STOP	AS APPROVED
6	1 1/2" SDR9 POLYETHYLENE TUBING	CLASS 250
7	BRASS U-BRANCH, 1 1/2" X 1"	FORD, OR EQUAL
8	METER BOX, SINGLE	DFW37F-12-1CA, OR EQUAL
9	METER BOX, DOUBLE	DFW39F-12-1CA, OR EQUAL
10	3" SCH. 40 PVC SLEEVE FOR LONG SIDE SERVICES (TYP.)	

NOTES:
1. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
2. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS.
3. BRANCH CONNECTION AND BOTH ANGLE METER STOPS SHALL BE INSTALLED PRIOR TO FIRST METER INSTALLATION.
4. SLEEVES FOR LONG-SIDE SERVICE TO BEGIN AND TERMINATE 6" BEHIND BACK OF CURB.
5. TOP OF METER BOXES SHOULD BE 1" ABOVE GROUND.
6. METER BOX SHALL BE BEHIND CURB AT ROW/PROPERTY LINE OR EASEMENT. METER BOX SHALL NOT BE INSTALLED IN SIDEWALK, DRIVEWAY OR VEHICULAR TRAVEL AREA.
7. 1" X 3/4" BRASS METER BUSHING REQUIRED FOR 5/8" AND 3/4" METERS.
8. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, CHECK VALVE, PIPING AND OWNER'S CUTOFF) SHALL BE 11" BELOW TOP OF BOX. METER BOXES ARE SIZED TO ACCOMMODATE METER STOP, WATER METER AND CHECK VALVE.

STATE OF TEXAS · WAYNE S. WATTS · 88134 · LICENSED PROFESSIONAL ENGINEER
11/24/15

City Of Leander, Texas
DETAIL #101-1
WATER SERVICE CONNECTIONS

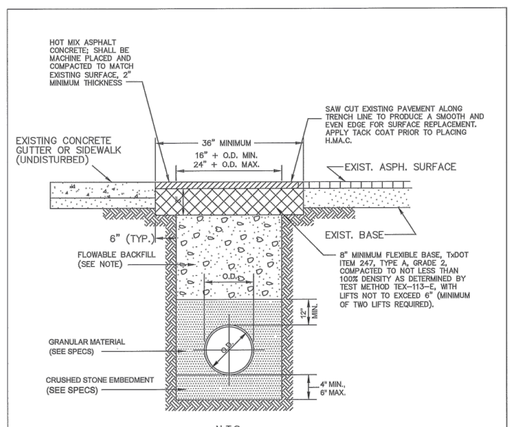


DIMENSIONS		
	WASTEWATER ACCESS STRUCTURE	GATE VALVE
T	3" BELOW TOP OF CONE (9" MIN.)	6"
W	12"	8"

NOTES:
1. THE CONCRETE COLLAR SHALL BE REINFORCED WITH #4 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF SAW CUT PAVEMENT EDGE.
2. REBAR WILL BE PLACED IN TWO LAYERS. FIRST LAYER (1/3 T) FROM TOP OF COLLAR AND SECOND LAYER (2/3 T) FROM TOP OF COLLAR. IF (T) IS 12" OR LESS ONE LAYER OF REBAR WILL BE USED, PLACED MID POINT BETWEEN TOP AND BOTTOM OF COLLAR.
3. REQUIREMENTS FOR NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENTS IN NEW RECONSTRUCTION AND REAPING PROJECTS ARE INCLUDED IN DETAIL NO. 506S-3-SM, 505S-8-SM, 506S-8A-SM AND 506S-10-SM.
4. REFER TO TRENCH DETAIL FOR ADDITIONAL BACKFILL REQUIREMENTS WITH APPROPRIATE CONDITIONS.

REFERENCES
DETAIL 506S-4-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2020	Concrete Riser Collar
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	2-15-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD · N.T.S. · 1100S-1-SM STANDARD DETAIL



NOTES:
FLOWABLE BACKFILL SHALL CONSIST OF A MIXTURE OF NATIVE SOILS OR MANUFACTURED MATERIALS, CEMENT AND/OR FLY ASH, AND WATER WHICH PRODUCES A MATERIAL WITH UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 250 AND 450 PSI AFTER 28 DAYS. ANY MATERIALS USED SHALL BE PRIMARILY GRANULAR, WITH A PLASTICITY INDEX <12 AND WITH 100% PASSING A 3/4 INCH SIEVE. THE FLOWABLE MIXTURE SHALL BE MIXED IN A PUG MILL, CONCRETE MIXER, OR TRANSIT MIXER AND SHALL HAVE A MINIMUM SLUMP OF 5 INCHES. THE FLOWABLE MIXTURE MUST BE ALLOWED TO SET PRIOR TO THE PACEMENT OF ANY OVERLAYING MATERIAL.

ONE CONCRETE CYLINDER WILL BE REQUIRED FOR TESTING AND WILL BE FABRICATED BY THE CITY INSPECTOR.

THE PUBLIC WORKS DEPARTMENT IS TO BE CONTACTED AT 259-2640 PRIOR TO COMMENCEMENT OF BACKFILL OPERATIONS.

STATE OF TEXAS · WAYNE S. WATTS · 88134 · LICENSED PROFESSIONAL ENGINEER
11/20/12

City Of Leander, Texas
DETAIL #104-2
TYPICAL TRENCH AND H.M.A.C. SURFACE REMOVAL AND REPLACEMENT DETAIL

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 2

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025
STATE OF TEXAS · CHARLES R. HAGER · 127034 · LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

JOB NUMBER:

DT02

SHEET NO. 65 OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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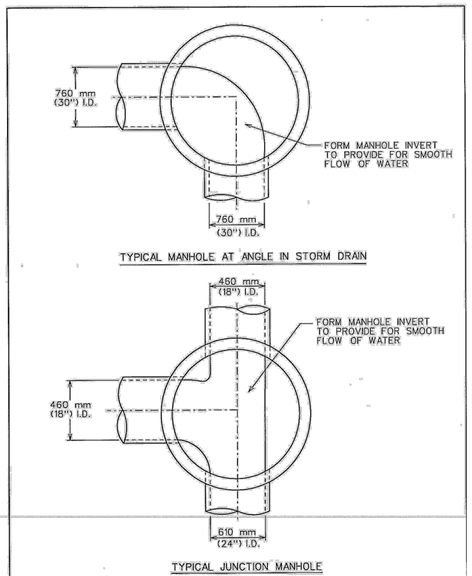
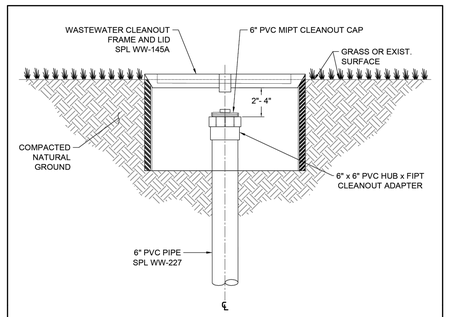
Last Modified: Sep. 15, 25 - 09:48
Plot Date/Time: Oct. 03, 25 - 16:31:37



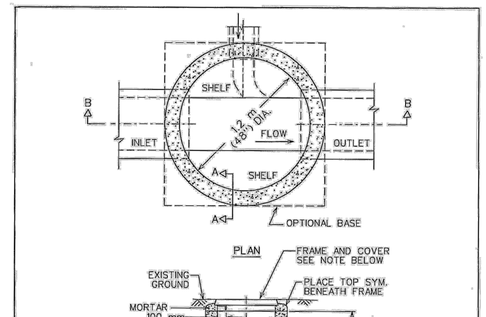
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	MANHOLE INVERT PLAN	
George E. Dowdy 2/14/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-1



NOTE:

1. WASTEWATER CLEANOUT FRAME AND LID SHALL NOT BE PLACED IN PAVED AREAS, INCLUDING SIDEWALKS, DRIVEWAYS, OR PARKING LOTS, AND MUST BE LOCATED A MINIMUM OF 6" FROM ALL PAVED AREAS.

CITY OF AUSTIN AUSTIN WATER	WASTEWATER CLEANOUT FRAME AND LID	
JEFF A. KYLE 08/16/2019 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-03 1 OF 1

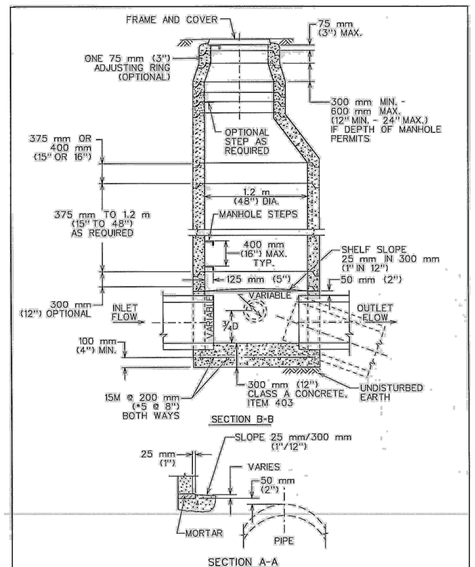


NOTE:
USE 800 mm (32") FRAME AND COVER.

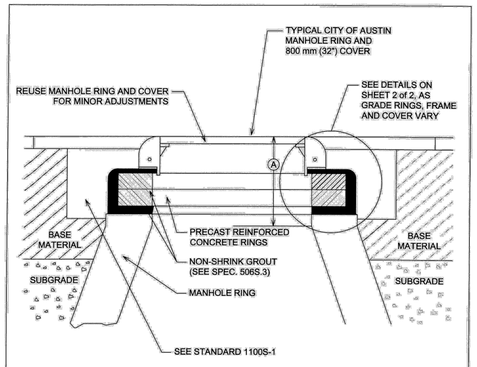
MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18 TO 24")
1.5 m (5')	750 mm TO 1.1 m (30 TO 42")
1.8 m (6')	1.2 TO 1.4 m (48 TO 54")
2.1 m (7')	1.5 TO 1.7 m (60 TO 66")

SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	PRE-CAST CONCRETE STORM DRAIN MANHOLE	
George E. Dowdy 2/14/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 1 OF 2



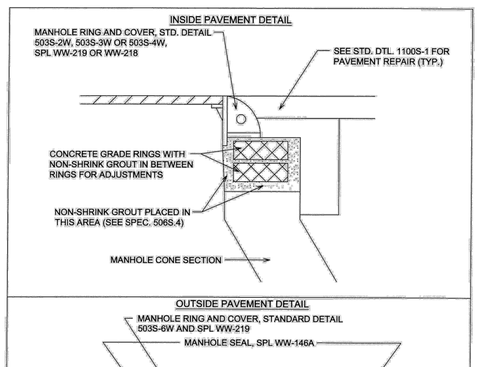
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	PRE-CAST CONCRETE STORM DRAIN MANHOLE	
George E. Dowdy 2/14/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 2 OF 2



Ⓐ VERTICAL FACE = ALLOWABLE THROAT OR CHIMNEY HEIGHT
= NEW CONSTRUCTION = 525mm = (21") Max.
= EXISTING CONSTRUCTION = 675mm (27") Max.

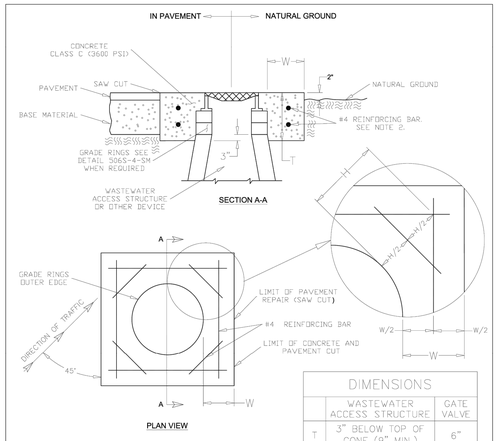
NOTES:
1. NON-SHRINK GROUT SHALL NOT EXCEED 25 mm (1") IN ANY DIMENSION.
2. SUB-GRADE AND BASE MATERIALS SHALL BE COMPACTED ACCORDING TO ITEMS 201S AND 210S, RESPECTIVELY, OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. REFER TO STANDARD 1100S-1 FOR REPAIRS AROUND MANHOLES.
4. SEE STANDARD 506S-4A FOR HDPE RING INSTALLATION (FOR USE IN PAVED AREAS ONLY).

CITY OF AUSTIN AUSTIN WATER UTILITY	MINOR MANHOLE ADJUSTMENT & NEW MANHOLE CONSTRUCTION	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-4 1 OF 2



NOTES:
1. FOR USE IN UNPAVED AREAS ONLY
2. WHEN USED WITHIN 100-YEAR FLOODPLAIN, SEE DTL. 506S-6 FOR ADDITIONAL M.H. REQUIREMENTS.
3. DIMENSION B=150-300 mm (6"-12") FOR M.H. LOCATED IN 100-YR FLOOD PLAN.
=50-300 mm (2"-12") FOR M.H. OUTSIDE 100-YR FLOOD PLAN.

CITY OF AUSTIN AUSTIN WATER UTILITY	MINOR MANHOLE ADJUSTMENT & NEW MANHOLE CONSTRUCTION	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-4 2 OF 2



DIMENSIONS		
	WASTEWATER ACCESS STRUCTURE	GATE VALVE
T	3" BELOW TOP OF CONE (9" MIN.)	6"
W	12"	8"

NOTES:
1. THE CONCRETE COLLAR SHALL BE REINFORCED WITH #4 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF SAW CUT PAVEMENT EDGE.
2. REBAR WILL BE PLACED IN TWO LAYERS. FIRST LAYER (1/3 T) FROM TOP OF COLLAR AND SECOND LAYER (2/3 T) FROM TOP OF COLLAR. IF (T) IS 12" OR LESS ONE LAYER OF REBAR WILL BE USED, PLACED MID POINT BETWEEN TOP AND BOTTOM OF COLLAR.
3. REQUIREMENTS FOR NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENTS IN NEW, RECONSTRUCTION AND REAPING PROJECTS ARE INCLUDED IN DETAIL NO. 506S-3-SM, 506S-8-SM, 506S-8A-SM AND 506S-10-SM.
4. REFER TO TRENCH DETAIL FOR ADDITIONAL BACKFILL REQUIREMENTS WITH APPROPRIATE CONDITIONS.

REFERENCES
DETAIL 506S-4-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2020	Concrete Riser Collar	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	2-15-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	1100S-1-SM N.T.S. STANDARD DETAIL

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 3

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025
STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: DT03

SHEET NO. 66 OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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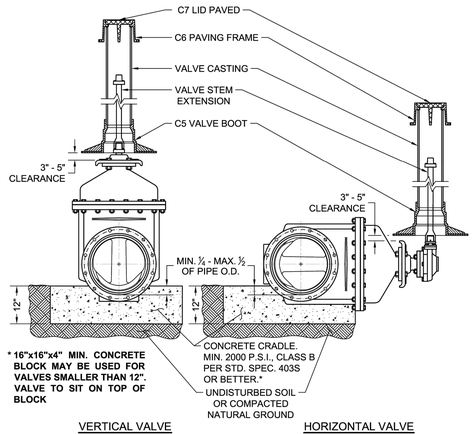
User: chafen
Last Modified: Sep. 15, 25 - 09:48
Plot Date/Time: Oct. 01, 25 - 16:31:50



VERTICAL VALVE

HORIZONTAL VALVE

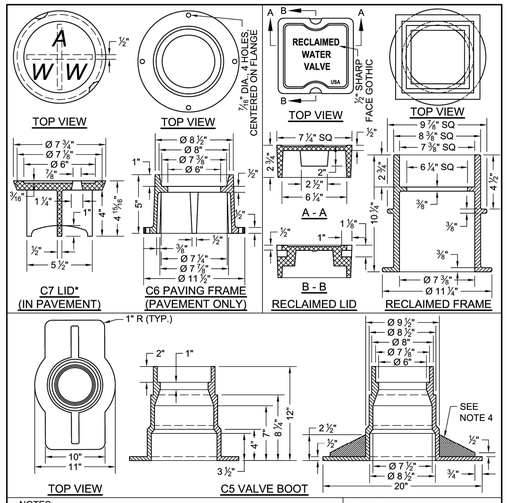
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT. [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE **"RECLAIMED WATER"** CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

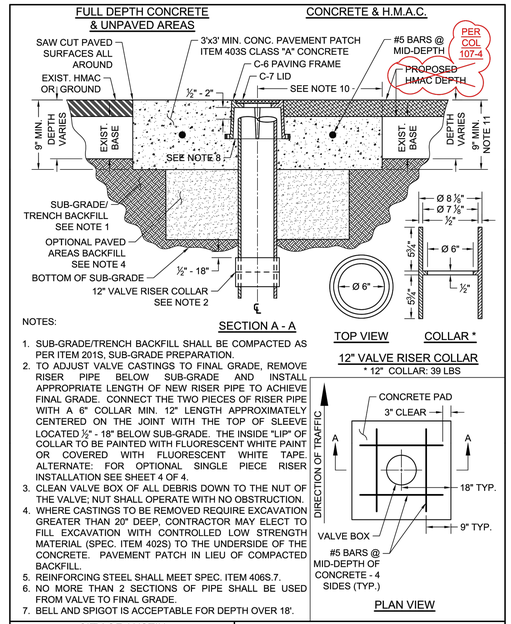
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4



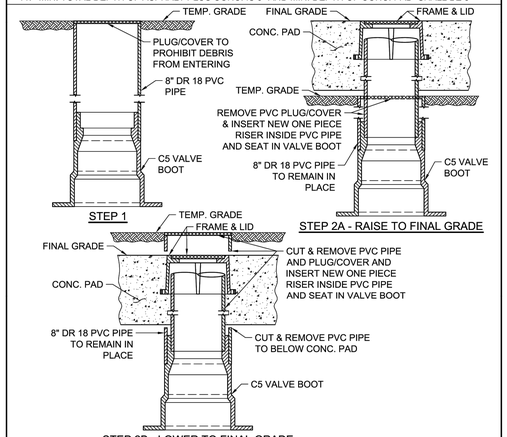
NOTES:

1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

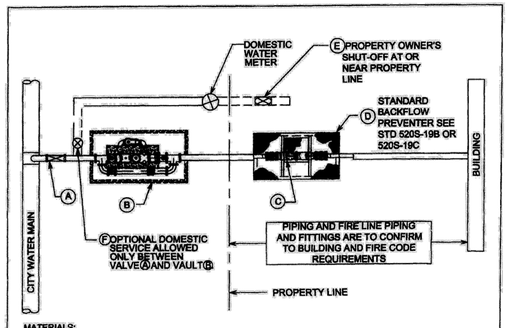
NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4



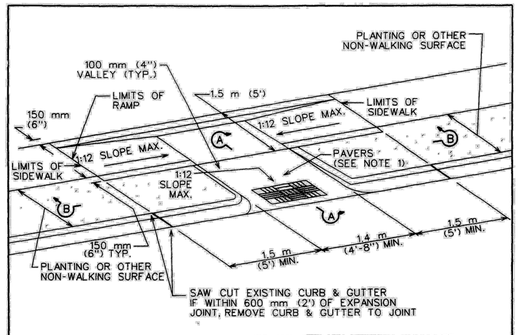
MATERIALS:

- **A** TAPPING, RESTRAINED OR FLANGED VALVE (GATE, IRON BODY WITH MJ OUTLET). SEE SPL WW-243, WW-27, WW-27A, AND/OR WW-27B.
- **B** FIRELINE OR MASTER METER, SEE STD. DETAIL 520S-17.
- **C** CUSTOMER'S BACKFLOW PREVENTION ASSEMBLY AS REQUIRED BY CROSS CONNECTION ORDINANCES. SEE SPL WW-293 OR APPROVEL EQUAL.
- **D** VAULT AND ACCESS DOOR SHALL BE PER SPL WW-298 OR SPL WW-814, RESPECTIVELY, OR APPROVED EQUAL. SEE STD. DETAIL 520S-19B OR 19C. VAULT SHALL NOT BE LOCATED IN A TRAFFIC AREA.
- **E** CUSTOMER'S SHUT-OFF VALVE ON DOMESTIC WATER LINE.
- **F** DOMESTIC WATER SERVICE LINE VALVE.

NOTES:

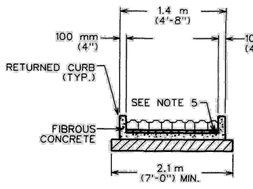
1. FIRE LINE SHALL BE A MINIMUM OF 150 mm (6") & GREATER THAN OR EQUAL TO METER SIZE IN THE STREET RIGHT-OF-WAY. PLANS SHALL BE PREPARED BY A LICENSED ENGINEER.
2. ALL BURIED PIPE SHALL BE WRAPPED COMPLETELY WITH A MINIMUM OF 0.2 mm (8 MIL) POLYETHYLENE FILM.
3. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS: BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
4. FOR STD. DETAILS 520S-19A, 19B, AND 19C, MASTER METER MEANS METER FOR FIRE AND DOMESTIC SERVICE.
5. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD FIRE LINE INSTALLATION WITH OR WITHOUT MASTER METER	
Kathi L Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19A



SECTION A-A

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	COMBINED SIDEWALK CURB RAMP WITH PAVERS	
Bill Bardin 3/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3F 1 OF 2



SECTION B-B

GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION WITHIN RIGHT-OF-WAY OR EASEMENT ONLY.
2. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 23 mm (0.9"), A NOMINAL HEIGHT OF 5 mm (0.2") AND A NOMINAL CENTER TO CENTER SPACING OF 60 mm (2.35") AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (Re: ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. A BASKET WEAVE PAVER PATTERN SHALL BE USED UNLESS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. PAVER PATTERN VARIES PER MANUFACTURER'S RECOMMENDATIONS. REFER TO STANDARD DETAIL 432S-5 FOR PAVER BASE PREPARATION DETAILS.
3. THE CURB, GUTTER AND RAMP SYSTEM SHALL BE CONFIGURED TO MAINTAIN ALL RUNOFF FROM A 25 YEAR FREQUENCY STORM WITHIN THE RIGHT-OF-WAY (DRAINAGE CRITERIA MANUAL SECTION 1.2.2.B).
4. TYPICAL SIDEWALK WIDTHS AND CURB RADII ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIC REQUIREMENTS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO 6 mm (¼") JOINT SIZE. GAPS LARGER THAN 6 mm (¼") MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
6. MORTAR SHALL CONFORM TO STD. SPECIFICATION ITEM SECTION 403S.3.5. MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.
7. CURB RAMPS WITH 100 mm (4") CONCRETE VALLEY MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	COMBINED SIDEWALK CURB RAMP WITH PAVERS	
Bill Bardin 3/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3F 2 OF 2

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 4

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DT04

SHEET NO.
67
OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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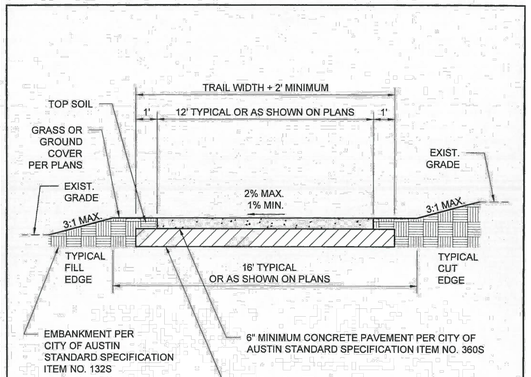
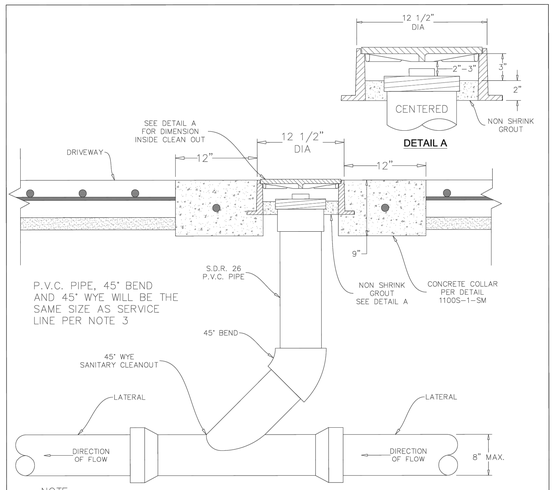


NOTES:

1. CONTRACTION JOINT PATTERN SHALL BE DETERMINED UPON FINAL CONFIGURATION OF TRAIL DESIGN. CONTRACTION JOINTS SHALL BE MADE USING EARLY-ENTRY SAW CUTTING OR A PRE-FORMED CONTRACTION JOINT MATERIAL (ZIP STRIP OR APPROVED EQUIVALENT)
2. RECOMMEND SLIP FORM PAVER FOR CONCRETE AND A RECLAIMER FOR THE SUB-GRADE MIXING.
3. LIME STABILIZED SUB-GRADE (C.O.A. ITEM NO. 203S) COULD BE USED IN-PLACE OF CEMENT STABILIZED SUB-GRADE, AS SHOWN ON THE DRAWINGS, AT THE DISCRETION OF THE ENGINEER OR THEIR DESIGNATED REPRESENTATIVE DEPENDING ON THE PROJECT LOCATION AND THE SOIL CONDITIONS. THE DEPTH OF THE SUB-GRADE CAN BE MODIFIED DEPENDING ON THE GEOTECHNICAL ENGINEERING REPORT, AT THE DISCRETION OF THE ENGINEER OR THEIR DESIGNATED REPRESENTATIVE.
4. IF USING A CUT SECTION WITH 3:1 MAXIMUM SIDE SLOPE, A SWALE (U-SHAPED) SHALL BE PROVIDED ON THE SIDE OF THE TRAIL TO PREVENT WATER FROM INUNDATING THE TRAIL.
5. ALL WORK IN CRITICAL WATER QUALITY ZONE TO COMPLY WITH CITY OF AUSTIN LDC § 25-8-261.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL CONCRETE URBAN TRAIL DETAIL	
Terry Moore 12/7/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1302S-1 1 OF 1

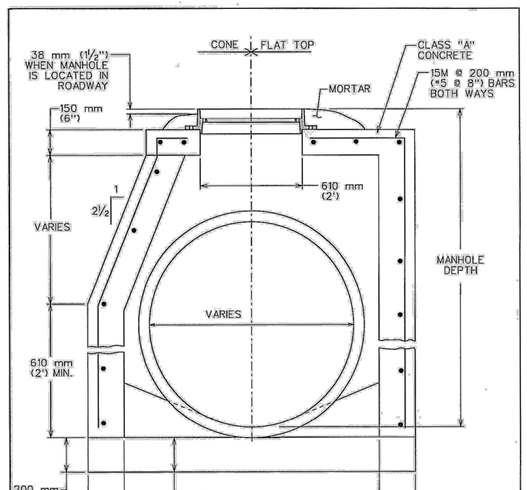


NOTE:

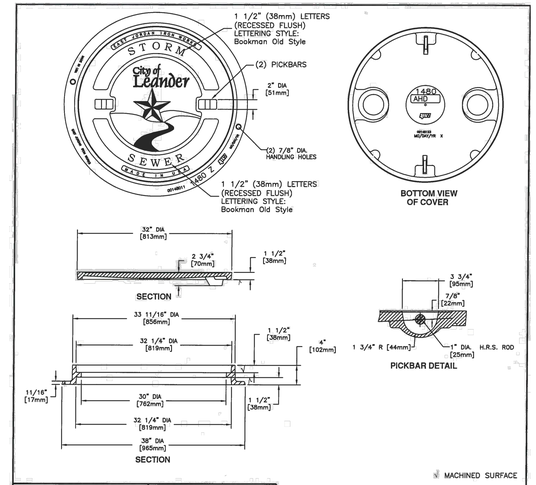
1. SERVICE SHALL BE DESIGNED TO AVOID CLEANOUT LOCATION WITHIN DRIVEWAYS.
2. THIS STANDARD DETAIL IS ONLY FOR EXISTING CLEANOUTS THAT ARE LOCATED WITHIN EXISTING DRIVEWAYS.
3. THIS STANDARD IS ONLY FOR SERVICES 8" OR LESS AND ALL FITTING AND PIPE FOR CLEANOUT WILL BE THE SAME SIZE AS LATERAL.
4. SUBGRADE SHALL BE COMPACTED AS PER STANDARD DETAIL 510S-S&L-SM.
5. CONCRETE COLLAR IN DRIVEWAY WILL BE PER 1100S-1-SM FOR MANHOLE DIMENSIONS MINIMUM OF 9" DEPTH.
6. TRAFFIC BEARING FRAME AND COVER ONLY. HEAVY DUTY.

REFERENCES
DETAIL 510S-S&L-SM
DETAIL 1100S-1-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2020	EXISTING WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAY
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	2-15-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	520S-4-SM N.T.S. STANDARD DETAIL



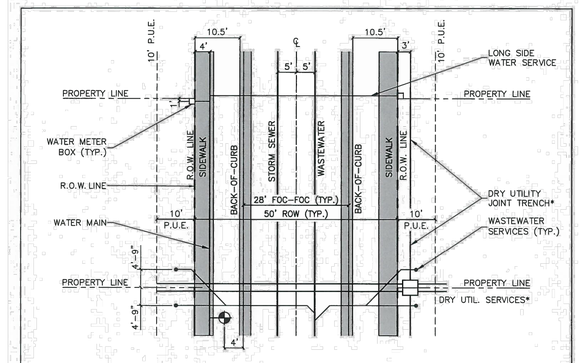
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STORM DRAIN MANHOLE DETAIL	
George E. Hurd 2/14/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-11



MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148105 OR NEENAH FOUNDRY DF-1274 LEANDER STORM	OPEN AREA N/A
	MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B
	LOAD RATING HEAVY DUTY (H20)

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 02/22/16

City Of Leander, Texas
DETAIL #107-3
STORM SEWER MANHOLE COVER (HEAVY DUTY)



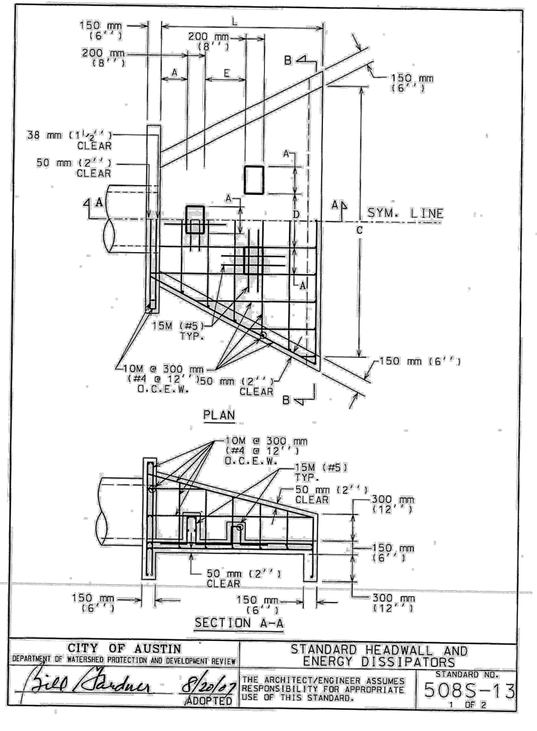
MINIMUM COVER BELOW FINISH-GRADE	
STORM SEWER	BELOW SUBGRADE
WASTEWATER	48"
WATER	36"
ELECTRIC PRIMARY*	30"
ELECTRIC SECONDARY*	24"
GAS*	24"
TELECOMMUNICATIONS*	24"

RESIDENTIAL STREET
NOT TO SCALE

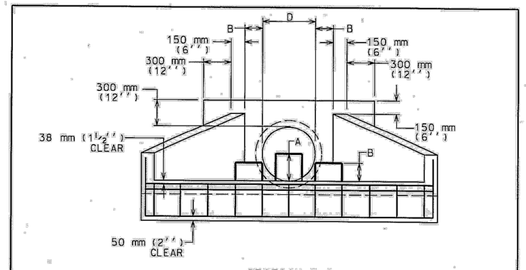
*NOTE:
ALL GAS, ELECTRIC, AND TELECOMMUNICATION LINES SHALL BE INSTALLED PER THE UTILITY PROVIDER'S STANDARDS AND SPECIFICATIONS.

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 11/05/18

City Of Leander, Texas
DETAIL #204-5
UTILITY ASSIGNMENTS WITHIN RESIDENTIAL DEVELOPMENT



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
Bill Bardner 8/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-13 1 OF 2



SECTION B-B

NOTES:

1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S. CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")				
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")				
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")				
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	343 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")				
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")				
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")				

DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).
DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
Bill Bardner 8/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-13 2 OF 2

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 5

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025
STATE OF TEXAS CHARLES R. HAGER 127034 LICENSED PROFESSIONAL ENGINEER
C R Hager

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DT05

SHEET NO. 68 OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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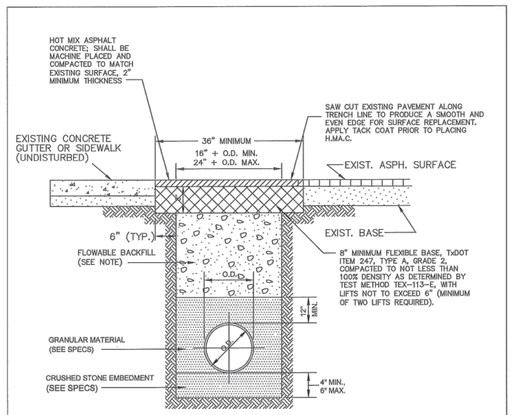
User: cholen
Last Modified: Sep. 15, 25 - 09:48
Plot Date/Time: Oct. 01, 25 - 16:32:12



NOTES:

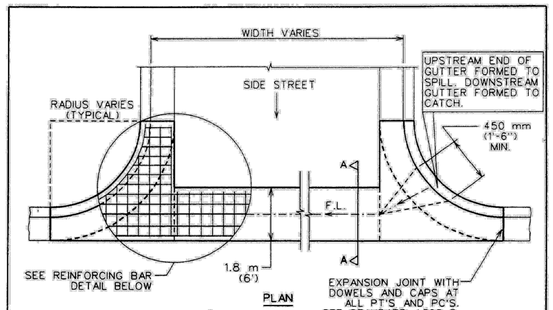
FLOWABLE BACKFILL SHALL CONSIST OF A MIXTURE OF NATIVE SOILS OR MANUFACTURED MATERIALS, CEMENT AND/OR FLY ASH, AND WATER WHICH PRODUCES A MATERIAL WITH UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 250 AND 450 PSI AFTER 28 DAYS. ANY MATERIALS USED SHALL BE PRIMARILY GRANULAR, WITH A PLASTICITY INDEX <12 AND WITH 100% PASSING A 3/4 INCH SIEVE. THE FLOWABLE MIXTURE SHALL BE MIXED IN A PUG MILL, CONCRETE MIXER, OR TRANSIT MIXER AND SHALL HAVE A MINIMUM SLUMP OF 5 INCHES. THE FLOWABLE MIXTURE MUST BE ALLOWED TO SET PRIOR TO THE PACEMENT OF ANY OVERLAYING MATERIAL.

ONE CONCRETE CYLINDER WILL BE REQUIRED FOR TESTING AND WILL BE FABRICATED BY THE CITY INSPECTOR.

THE PUBLIC WORKS DEPARTMENT IS TO BE CONTACTED AT 259-2640 PRIOR TO COMMENCEMENT OF BACKFILL OPERATIONS.

STATE OF TEXAS — WAYNE S. WATTS — 86524 — LICENSED PROFESSIONAL ENGINEER — 8/31/2011

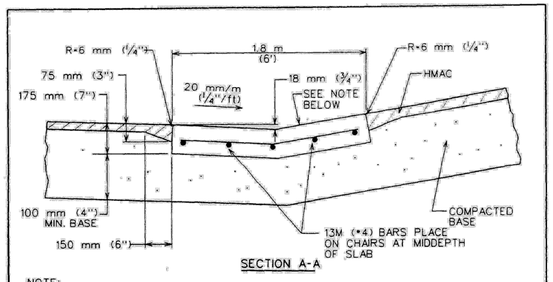
City Of Leander, Texas
DETAIL #104-2
TYPICAL TRENCH AND H.M.A.C. SURFACE REMOVAL AND REPLACEMENT DETAIL



REINFORCING BAR DETAIL

NOTE:
ALTERNATE 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB TO BE CONTINUOUS ACROSS EXPANSION JOINT. BREAK BOND 150 mm (6") ON EACH SIDE OF EXPANSION JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CONCRETE VALLEY GUTTER	
Bill Gardner 4/12/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 436S-2 1 OF 2

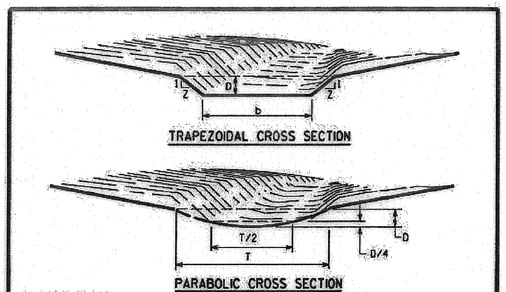


SECTION A-A

NOTE:
ADJUST SLOPE FROM 20 mm/m (1/4"/ft) MINIMUM TO THE SLOPE OF THE SIDE STREET.

NOTES:
1. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
2. CONCRETE FOR THE VALLEY GUTTER SHALL BE CLASS A, ITEM 403S, "CONCRETE FOR STRUCTURES".
3. MONOLITHIC CURB AND GUTTER SHALL BE MEASURED BY PLAN QUANTITY PER SQUARE FEET AND PAID AS VALLEY GUTTER.
4. THE UPSTREAM CURB MID POINT MUST BE AT OR LOWER THAN THE BEGINNING P.C. AND 0.5% MINIMUM HIGHER THAN THE OPPOSING MID POINT.
5. ALLOWABLE CONSTRUCTION JOINT AT THE CENTER LINE WHEN TRAFFIC FLOW MUST BE MAINTAINED. CONSTRUCTED AS A CONTROL JOINT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CONCRETE VALLEY GUTTER	
Bill Gardner 4/12/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 436S-2 2 OF 2



STANDARD SYMBOL
GW

GENERAL NOTES:

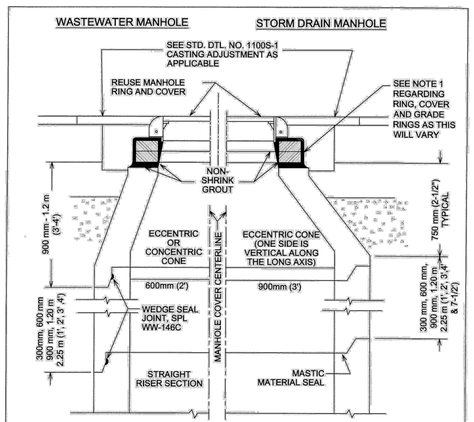
1. EXCEPT AS INDICATED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE, ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.

2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, TYPICAL SECTIONS AND CROSS-SECTION INDICATED ON THE DRAWINGS AND SHALL BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES, WHICH COULD IMPEDE NORMAL FLOW.

3. FILL SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 132S, "EMBANKMENT".

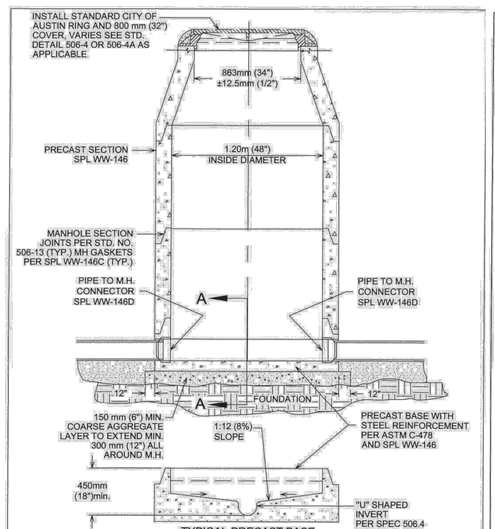
4. EARTHEN CHANNELS SHALL ALWAYS BE STABILIZED WITH THE APPROPRIATE SOIL RETENTION BLANKET WHICH SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 605S, "SOIL RETENTION BLANKET".

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	GRASS LINED SWALE	
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 627S-1



1. SEE "MINOR MANHOLE HEIGHT ADJUSTMENT" STANDARDS 506S-4 AND 506S-4A FOR ADDITIONAL INFORMATION.
2. MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED ONLY WITH WRITTEN APPROVAL OF THE INSPECTOR. WEDGE SEALS SHALL NOT BE REUSED.
3. ANY COMBINATION OF REMOVING THE GRADE RINGS, AND/OR THE MANHOLE CONE, AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR RECONSTRUCTION.
4. WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF STEEL SUITABLE TO SUPPORT ALL IMPOSED LOADS SHALL BE USED TO COVER THE OPENING. STEEL SHALL BE PLACED SO THE SHEET WILL NOT MOVE UNDER ANY & ALL TRAFFIC CONDITIONS.
5. SUB-GRADE AND BASE MATERIALS SHALL BE COMPACTED TO 95% AND 100% DENSITIES, RESPECTIVELY. COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED, SEE STD. DTL. NO .1100S-1.

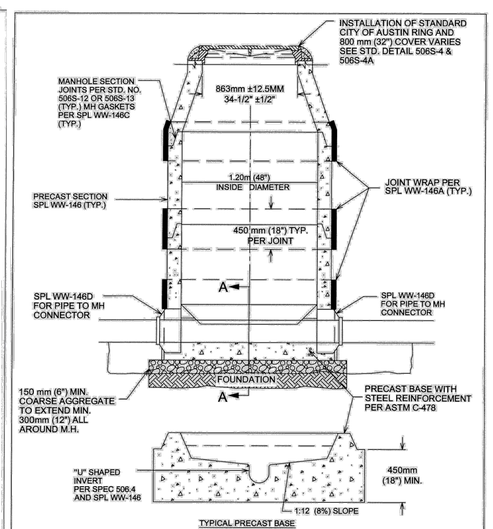
CITY OF AUSTIN AUSTIN WATER UTILITY	MAJOR MANHOLE ADJUSTMENT	
Kathi K Flowers 8-31-2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-2



TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MH FOUNDATION SHALL MEET OR EXCEED STD. SPEC. 506.5B.

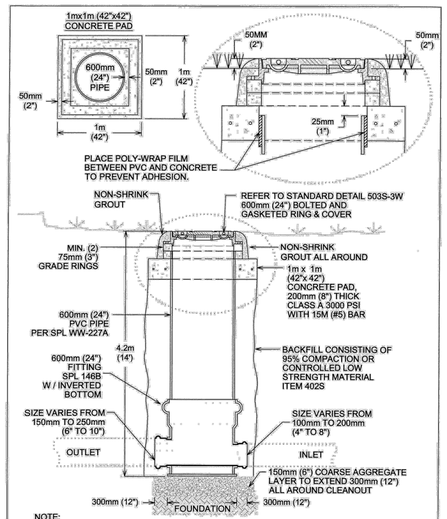
CITY OF AUSTIN AUSTIN WATER UTILITY	WASTEWATER MANHOLE ON PRECAST BASE	
Kathi K Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-10



TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED SPEC. 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY	WATER TIGHT WASTEWATER MANHOLE ON PRECAST BASE	
Kathi K Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-6



NOTE:
1. CLEAN OUT FOUNDATION SHALL MEET OR EXCEED STD, SPEC 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY	LARGE DIAMETER CLEANOUT	
Kathi K Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-14

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 6

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025
STATE OF TEXAS — CHARLES R. HAGER — 127034 — LICENSED PROFESSIONAL ENGINEER

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Phone 512.439.4700
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JOB NUMBER:
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SHEET NO.
69
OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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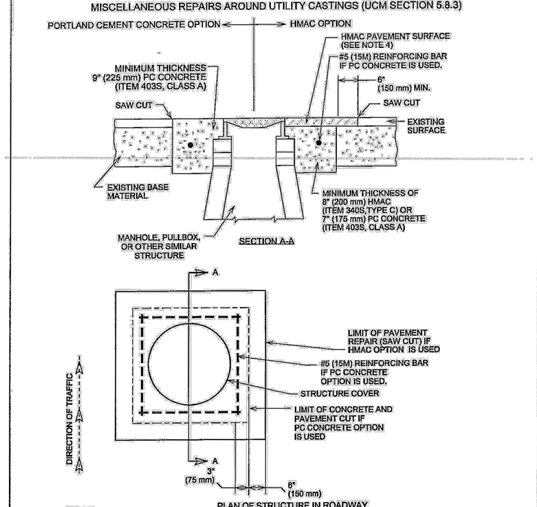
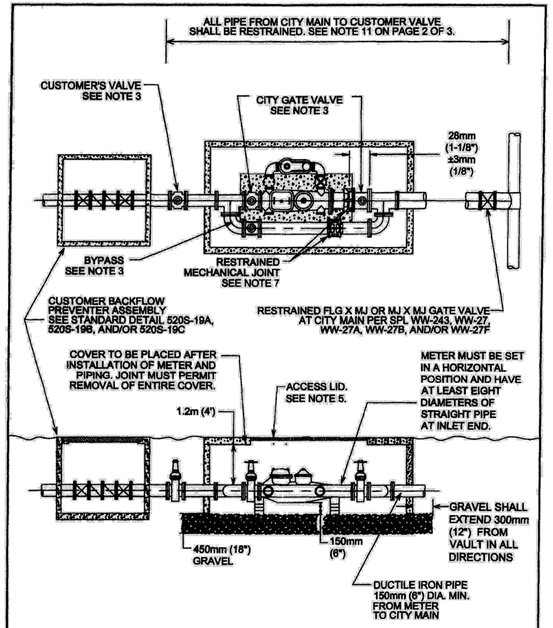
MISCELLANEOUS REPAIRS AROUND UTILITY CASTINGS (UCM SECTION 5.8.3)



NOTES:

1. IF PC CONCRETE IS USED AROUND THE MANHOLE, THE CONCRETE SHALL BE REINFORCED WITH #5 (15M) BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF SAW CUT PAVEMENT EDGE.
2. REQUIREMENTS FOR NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENTS IN NEW, RECONSTRUCTION AND REPAVING PROJECTS ARE INCLUDED IN STANDARD NO. 506S-4 AND 209S-4A.
3. REQUIREMENTS FOR WATER VALVE ADJUSTMENTS ARE INCLUDED IN STANDARD DETAILS 511S-13A AND 511S-13B.
4. REPLACEMENT HMAC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS. SEE ITEM 340S, SECTION 340S-4.
5. REFER TO UCM SECTION 5.8.3 FOR ADDITIONAL BACKFILL REQUIREMENTS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CASTING ADJUSTMENT	
1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-1



CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 1 OF 3

NOTES:

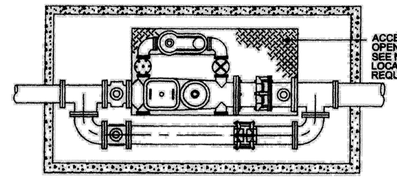
1. VAULT PER SPL WW-298 OR APPROVED EQUAL. VAULT SHALL INCLUDE THRUST COLLAR WALL PIPES IF CAST IN PLACE. ALL PIPE SHALL BE RESTRAINED REGARDLESS IF VAULT PRE-CAST OR CAST IN PLACE, RESTRAINED BOTH WAYS. H20 LOADING REQUIRED FOR ALL VAULTS.
2. METER VAULT SHALL BE BEHIND CURB AND/OR WALK, AND NOT IN VEHICULAR TRAFFIC AREA.
3. MAIN LINE AND BYPASS GATE VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BONDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE HAND-WHEELS. BYPASS VALVES SHALL HAVE HAND-WHEELS. PROPERTY OWNER'S VALVE SHALL NOT BE LOCATED IN THE CITY OF AUSTIN METER VAULT. HAND-WHEEL EXCEPTION: IF HAND-WHEEL IS NOT LOCATED WITHIN 300mm (12") HORIZONTALLY OF ACCESS HATCH, GATE VALVE SHALL BE INSTALLED WITH OPERATING NUT ACCESSIBLE FROM RING AND COVER LOCATED ON VAULT LID PER SPL WW-622.
4. APPROVAL REQUIRED IF HEIGHT OF VAULT EXCEEDS 1.8m (72"), CONTACT THE PIPELINE ENGINEERING DIVISION OF AUSTIN WATER UTILITY. METER SHALL BE LEGIBLE TO READ FROM TOP OF VAULT.
5. ACCESS LID SHALL BE 1.2 m x 1.8 m (4'x6') DOUBLE LEAF PER SPL WW-614 (H2O LOADING REQUIRED) WITH SLAM LOCK BY HALLIDAY PRODUCTS OR APPROVED EQUAL. LOCK TO INCLUDE SECURITY OPERATOR.
6. ALL BURIED PIPE SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATIONS 510.3 (14); BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY 510.3 (25). ALL BURIED PIPE SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT PER SPL WW-27D.
7. FITTINGS IN VAULT SHALL BE FLANGED WITH EXCEPTION OF ONE RESTRAINED MJ ON MAIN AND BYPASS LINES EACH PER SPL WW-27A.
8. VOIDS AT PIPE WALL HOLES SHALL BE FILLED WITH NON-SHRINK GROUT, OR OTHER SEAL OR SEALANT PER SPL WW-146A.
9. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.
10. BYPASS AND MAIN PIPE SHALL BE SAME DIAMETER. ALL PIPE FROM CITY MAIN TO CUSTOMERS VALVE SHALL BE D.I.
11. ALL EQUIPMENT IN VAULT SHALL BE REMOVABLE WITHOUT ADDITIONAL RESTRAINT OR SUPPORT OF PIPE.
12. ALL CLEARANCES INDICATED ARE MINIMUM, ADDITIONAL CONSIDERATION SHALL BE MADE FOR ACCESS TO ALL COMPONENTS IN VAULT. ALL CLEARANCES SHALL BE INCLUDED ON PLANS SUBMITTED FOR APPROVAL TO AUSTIN WATER UTILITY.
13. LOCATION OF ACCESS DOORS ARE SHOWN TO INDICATE POSSIBLE LOCATION. AN ENGINEER LICENSED BY THE STATE OF TEXAS SHALL DETERMINE SIZE OF VAULT, LOCATION OF ACCESS DOOR AND/OR VALVE CASINGS APPROPRIATE FOR EQUIPMENT, ACCESS, MAINTENANCE AND CLEARANCES. METER VAULTS PER SPL WW-298 ARE ACCEPTABLE IF ALL DESIGN PARAMETERS ARE MET AND SO DETERMINED BY TEXAS LICENSED ENGINEER.

CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 2 OF 3

NOTES:

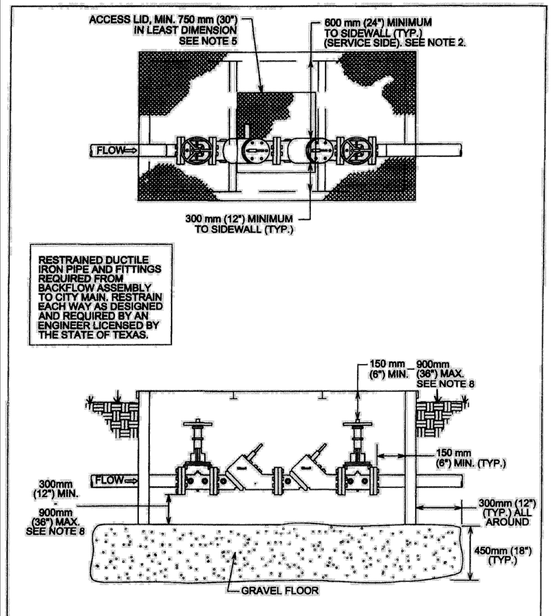
14. IN ALL CASES, MINIMUM CLEARANCE FROM WALL TO TEST PORTS SHALL BE 600mm (24"). LICENSED ENGINEER SHALL CONFIRM WITH METER MANUFACTURER LOCATION OF TEST PORTS PRIOR TO SUBMITTAL OF PLANS TO AUSTIN WATER UTILITY FOR APPROVAL. PLANS SHALL INDICATE LOCATION OF TEST PORTS.
15. VAULT SIZES INDICATED ON WATER METER SCHEDULE ARE SUGGESTIONS. ACTUAL EQUIPMENT, PIPE LAYOUT, CLEARANCE, ACCESS AND OTHER INFORMATION SHALL BE TAKEN INTO CONSIDERATION BY AN ENGINEER LICENSED BY THE STATE OF TEXAS.

MINIMUM CLEARANCES	
6"	-FLOOR TO ANY PART OF FIRELINE METER ASSEMBLY -INTERIOR WALL TO FLANGE
12"	-INTERIOR WALL TO PARALLEL PIPE, VALVE OR METER. -ALL AROUND FIRELINE METER ASSEMBLY
24"	-INTERIOR WALL TO TEST PORTS
48"	-TOP OF PIPE TO INTERIOR TOP OF VAULT



WATER METER SCHEDULE				
WATER METER SIZE	SIZE OF BY-PASS	BY-PASS VALVE W/HANDWHEEL	MAIN LINE VALVE WITH HANDWHEEL	VAULT SIZE PER SPL WW-298, SEE NOTE 16
150 mm x 50 mm (6" x 2")	150 mm (6")	150 mm (6")	150 mm (6")	2.4m x 3.6m (8' x 12')
200 mm x 50 mm (8" x 2")	200 mm (8")	200 mm (8")	200 mm (8")	3.0m x 3.6m (10' x 12')
250mm x 50mm (10" x 2")	250 mm (10")	250 mm (10")	250 mm (10")	3.0m x 4.6m (10' x 15')

CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 3 OF 3



CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19B 1 OF 2

NOTES:

1. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
2. ALL TEST PORTS SHALL BE DIRECTED UPWARD AND PLUGGED. TEST PORTS ARE LOCATED ON SERVICE SIDE. PLUGS SHALL BE NON-FERROUS.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
4. CLEARANCE SHALL BE AS INDICATED,AND IN THE STANDARD CROSS CONNECTION ORDINANCES AND UCM.
5. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 750 mm (30") IN LEAST DIMENSION.
6. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY AUSTIN WATER UTILITY'S SPECIAL SERVICE DIVISION WITHIN 5 DAYS AFTER BEING INSTALLED.
7. VAULT SHALL NOT BE INSTALLED IN TRAFFIC AREA.
8. VAULT DEPTH MAY NOT EXCEED 1.8m (72"), BOTTOM OF LID TO TOP OF FLOOR.
9. HAND WHEELS SHALL BE HORIZONTALLY LOCATED WITHIN 300mm (12") OF ACCESS OPENING.
10. FOR ACCESS DOORS SEE SPL WW-614 OR APPROVED EQUAL (H20 LOADING REQUIRED).
11. FOR VAULT SEE SPL WW-298 OR APPROVED EQUAL (H20 LOADING REQUIRED).
12. VAULT PIPE WALL VOIDS SHALL BE SEALED WITH NON-SHRINK GROUT OR SEALANT PER SPL WW-146A OR APPROVED EQUAL.
13. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER	
Kathi A Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19B 2 OF 2

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
STANDARD DETAILS SHEET 7

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 09/05/2025
DESIGNED BY: CRH
DRAWN BY: LJA
CHECKED BY: CRH
DRAWING NAME: MASTER DETAIL SHEET

09/05/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:

DT07

SHEET NO. 70 OF 70 SHEETS

CITY OF LEANDER PROJECT No. SD-24-0245

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User: cholen
Last Modified: Sep. 15, 25 - 09:48
Plot Date/Time: Oct. 01, 25 - 16:32:32

ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

TPDES Construction Inspection and Maintenance Report Form

Project Name: GABRIELS HORN DEVELOPMENT

Permit Number:

Facility Operators: BM 22 LLC
2508 Dapple Gray Lane
Leander, TX 78641

Inspector's Name:
(attach qualifications summary for each inspector)

Date of Last Rainfall:
Amount of Last Rainfall:
Date of Inspection:

Inspection Notes

Condition Code*	Area Inspected	Changes Required (if any)

*Condition Codes
01 - The facility is in compliance with the storm water pollution prevention plan and permit
02 - To be fixed or replaced within 24 hours.
03 - To be fixed or replaced within 48 hours.
04 - To be fixed or replaced within 7 days.

Please note major construction activities taking place. Include dates when major grading activities and/or disturbances occur, dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed. (Attach additional pages as required and/or attach daily construction reports.)

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

Signature: Nikhil Polsani Date: 11/13/2025

Signature: Date:

STORM WATER POLLUTION PREVENTION PLAN
(SWPPP)

GABRIELS HORN COMMERCIAL DEVELOPMENT

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

STORMWATER POLLUTION PREVENTION PLAN

AUGUST 2025

Prepared for:

BM 22, LLC
SWAMY DEVUNI

2508 DAPPLE GRAY LANE
LEANDER, TEXAS 78641

9/29/2025

Prepared by:

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GABRIELS HORN COMMERCIAL DEVELOPMENT

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

STORMWATER POLLUTION PREVENTION PLAN

A. SITE DESCRIPTION

1. Project Name: GABRIELS HORN COMMERCIAL DEVELOPMENT

2. Location: The Project is located on the northwest corner of Ronald W. Reagan Boulevard and Gabriels Horn Road

3. Facility Operators: BM 22, LLC *(Plans and Specifications)*
2508 Dapple Gray Ln.
Leander, Texas, 78641
(512)-795-4829
Date N.O.I. submitted: 09/05/2025
General Permit Authorization No.: TXR150000

_____ *(Contractor)*

Date N.O.I. submitted: _____
General Permit Authorization No.: _____

4. Property Owner: BM 22, LLC
2508 Dapple Gray Ln.
Leander, Texas, 78641

Project Description: The proposed Gabriels Horn Subdivision and associated Final Plat, PICP, and SDP's consists of 17.82 acres, with a total of 5 lots and 1.45-acres of proposed Right of Way (R.O.W.) along Gabriels Horn Road. The subdivision consists of approximately 17.82 acres located adjacent to Ronald W. Reagan Boulevard and the southwestern portion of the site is adjacent to Gabriel Horns Road in Leander Texas. The northern 9.62-acres of the site is zoned GC - General Commercial and the southern 8.20-acres is zoned Local Commercial (LC-2A). The subject site is located within a City of Leander Multi-Use Corridor and Priority Corridor per City Comprehensive Planning and Future Land Use Maps. No portion of the site is located within a FEMA 100-year floodplain, as shown on FEMA FIRMETTE 48491C0455F of Williamson County, effective on December 20, 2019. The subdivision is located within the Edward's Aquifer Contributing Zone per TCEQ maps. The project includes associated access, parking, detention, drainage, and utility improvements.

5. Site Area: The construction limits and disturbance caused by construction will include approximately 19.72-acres.

6. Runoff Coefficient: Currently, the site area for the Gabriels Horn Commercial Development is represented by a composite runoff coefficient of 0.20, representing the existing conditions of grassland in good condition. After construction is completed, the composite coefficient will be 0.69 reflecting the developed asphalt and concrete conditions.

7. Existing Soils: According to the Soil Conservation Service (SCS) Soil Survey , there are multiple soil types located on the subject site and surrounding areas. The soils consist of well-drained clays and sandy loam. The SCS Soil Survey information is included below.

Soil Name	Drainage Class	Hydrologic Soil Group	Saturated Hydraulic Conductivity	Depth to Water Table	Liquid Limit	Plasticity Index
Eckrant Cobbly clay (EaD)	Well drained	D	0.02-0.28 in/hr	>80"	50-70	30-45
Farlie Clay (FaB)	Well drained	D	0.01-0.06 in/hr	>80"	50-70	25-45
Doss Silty Clay (DoC)	Well drained	D	0.06-0.57 in/hr	>80"	26	14

8. Factors Affecting Surface Water Quality:

   Potential sources of sediment to stormwater runoff:
   - Clearing and grubbing operations
   - Grading and site excavation operations
   - Vehicle tracking
   - Topsoil stripping and stockpiling
   - Landscaping operations

   Potential sources other than sediment:
   - Small fueling activities
   - Minor equipment maintenance
   - Sanitary facilities
   - Solvents, adhesives, paints, etc.
   - paving materials, concrete, mortar

9. Location of Receiving Waters: The Gabriels Horn Development is located within the South Fork San Gabriel River Watershed and is part of the Edwards Aquifer Contributing Zone per Regulatory Zones 30 TAC Chapter 213-Edwards Aquifer effective May 1985. The site is not located within a FEMA floodplain or floodway, as shown on Flood Insurance Rate Maps of Williamson County, Map Number 481491C0455F, effective December 20, 2019.

11. Off-Site Operations: Disposal of spoil material will be the responsibility of the Contractors. Spoil shall be temporarily disposed of at the designated onsite temporary disposal area and permanently removed to a permitted off-site spoil disposal area. The Contractors shall be independently responsible as Operators for obtaining necessary permits in conjunction with the off-site disposal of spoil material or acquisition of borrow material.

B. POLLUTION PREVENTION CONTROLS

1. Sequence of Construction:

   (1) Install tree protection. (±19.72 acres)

   (2) Install temporary erosion and sedimentation controls. (±19.72 acres)

   (3) Clear and grub for roadways, underground utilities, and pond. (±11 acres)

   (4) Excavate water quality and detention ponds. (±1.5 acres)

   (5) Excavate and place embankment to roadway subgrade. (±2 acres)

   (6) Construct all underground utilities. (±2.5 acres)

   (7) Test utilities.

   (8) Assure all utilities have been placed within roadway. (±2.5 acres)

   (9) Complete ponds (±1.5 acres)

   (10) Once all utilities below subgrade have been tested, finish subgrade and test. (±2.5 acres)

   (11) Lay first coarse of base (±2 acres)

   (12) Lay curb and gutter and sidewalk ramp turn downs. (±2 acres)

   (13) Dress up behind back of curb. (±2 acres)

   (14) Lay second coarse base. (±2 acres)

   (15) After base has been tested and passed, lay asphalt. (±2 acres)

   (16) Complete sidewalk ramps. (±2 acres)

   (17) Finish grading behind curb and revegetate. (±5 acres)

   (18) After vegetation is established, remove temporary erosion controls. (±19.72 acres)

2. Erosion and Sedimentation Controls:

Temporary vegetative stabilization:

1. From September 15 to March 1, seeding shall be with cool season cover crops (Wheat at 0.5 pounds per 1000 SF, Oats at 0.5 pounds per 1000 SF, Cereal Rye Grain at 0.5 pounds per 1000 SF) with a total rate of 1.5 pounds per 1000 SF. Cool season cover crops are not permanent erosion control.

2. From March 2 to September 14, seeding shall be with Hulled Bermuda at a rate of 1 pound per 1000 SF.

a. Fertilizer shall be water soluble with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of ½ pound per 1000 SF.
b. Hydro-mulch shall comply with Table 1, below.
c. Temporary erosion control shall be acceptable when the grass has grown at least 1 ½ inches high with 95% coverage, provided no bare spots larger than 16 square feet exist.
d. When required, native grass seeding shall comply with requirements of the City of Austin Environmental Criteria Manual.

Table 1 Hydromulching for Temporary Vegetative Stabilization

Material	Description	Longevity	Typical Applications	Applications Rates
100% or any blend of wood, cellulose, straw, and/or cotton plant material (except no mulch shall exceed 30% paper)	70% or greater wood/straw 30% or less paper or natural fibers	0-3 Months	Moderate slopes From flat to 3:1	1500 to 2000 lbs per acre

Permanent vegetative stabilization:

1. From September 15 to March 1, seeding is considered to be temporary stabilization only. If cool season cover crops exist where permanent vegetation stabilization is desired, the grasses shall be mowed to a height of less than one half (1/2) inch and the area shall be re-seeded in accordance with 2. below:

2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 1 pound per 1000 SF with a purity of 95% with 85% germination. Bermuda grass is a warm season grass and is considered permanent erosion control.
    a. Fertilizer shall be water soluble with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of ½ pound per 1000 SF.
    b. Hydro-mulch shall comply with Table 2 below.
    c. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six inches. The irrigation shall occur at daily intervals (minimum) during the first two months. Rainfall occurrences of ½ inch or more shall postpone the watering schedule for one week.
    d. Permanent erosion control shall be acceptable when the grass has grown at least 1 ½ inches high with 95% coverage, provided no bare spots larger than 16 square feet exist.
    e. When required, native grass seeding shall comply with requirements of the City of Austin Environmental Criteria Manual.

Table 2 Hydromulching for Permanent Vegetation Stabilization

Material	Description	Longevity	Typical Applications	Applications Rates
Bonded Fiber Matrix (BFM)	80% Organic Defibrated Fibers 10% Tackifier	6 Months	On slopes up to 2:1 and erosive soil conditions	2500 to 4000 lbs per acre (see manufacturers recommendations)
Fiber Reinforced Matrix (FRM)	65% Organic Defibrated Fibers 25% Reinforcing Fibers or less 10% Tackifier	Up to 12 Months	On slopes up to 1:1 and erosive soil conditions	3000 to 4500 lbs per acre (see manufacturers recommendations)

b. Structural Controls:

(i) Erosion and sediment structural controls have been designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.

(ii) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

(iii) BM 22, LLC will be the facility operator with control over the construction plans and specifications, including the ability to make modifications in the plans and specifications. Prior to site clearing, grading and excavation, stabilized construction entrances will be installed, tree protection/limit of construction fencing will be installed, and silt fences will be installed at the downstream edge of disturbed areas where shallow sheet runoff occurs. Rock berms will be placed downstream of the areas where concentrated runoff occurs. To insure that no additional areas are disturbed other than those included in the limits of construction, orange mesh fences will be placed on the upstream side of the limits of construction to keep construction activity out of areas not designated for construction. The Contractor will install the stabilized construction entrance and silt fence prior to the start of any construction and be responsible for maintenance of those facilities throughout construction. The Contractor will be responsible for stabilization (revegetation). The Contractor will also be responsible for removing the temporary controls once the revegetation is established.

3. Stormwater Management Controls:

a. Temporary Sediment Controls: A stabilized construction entrance will be place as shown on the *Erosion/Sedimentation Control & Tree Protection Plan* and silt fences will be constructed at the downstream edge of the disturbed areas. Silt fence will also be used at selected locations of significant fill, around material stockpile sites, and around any other area that would be a pollutant source during storm events. The rock berms will be placed immediately downstream of areas where concentrated runoff occurs, and within defined channels downstream from development, as appropriate. Additionally, silt fence will typically be utilized on the downstream side of rock berms to supplement sediment removal. The detention ponds will be rough graded at the beginning of construction, so they can be used as a sediment trap during construction.

The utility trenches will also be utilized as temporary sediment traps to the extent feasible during construction.

The contractor will install the erosion/sedimentation controls prior to the start of any construction. The contractor will be responsible for maintaining the erosion control measures and removing the controls once the revegetation is established. The locations of such controls are shown in *the Erosion/Sedimentation Control & Tree Protection Plan*.

b. Permanent Stormwater Controls: Once construction associated with this project is completed, the site will be revegetated in accordance with the stabilization practices identified in this plan. Detention ponds, vegetative filter strips, and infiltration trenches will provide water quality control and treatment for stormwater runoff from the developed areas being conveyed to the creeks.

4. Other Controls:

   a. Waste Disposal: All construction-related waste materials will be collected and stored at a temporary onsite spoil disposal site. The Contractors will be independently responsible as Operators for controlling and preventing offsite migration of litter, construction debris, and construction materials.

   b. Sanitary Waste: The Contractors will be responsible for placing portable units onsite during construction, and waste will be collected and disposed of in accordance with state and local regulations.

   c. Off-site Vehicle Tracking: Stabilized construction entrances will be provided at the entry location to the construction project. The Contractors will be responsible for maintaining the entrances, and removing any sediment deposited onto adjacent streets. Vehicles leaving the site will be washed, as required.

   d. Dust Control: Contractors will spray water on disturbed areas and spoils areas, and apply mulch, as required, to control dust.

   e. Dewatering: When it becomes necessary to pump standing water from the site, the Contractors shall utilize the methods depicted in the Dewatering Detail included with this plan. Standing water removed via open channel will be routed through silt fence and/or rock berm before leaving the site.

5. Timing of Controls and Measures: Erosion and sediment structural control measures will be in place prior to clearing, grading or construction of any portion of the site. Construction phasing may occur, but in all instances erosion and sedimentation control measures will be in place in those areas prior to start of construction. Disturbed areas will be restored as described under Stabilization Practices. Temporary erosion and sediment controls will be removed only after all disturbed areas have been restored.

C. STATE AND LOCAL REQUIREMENTS

The Stormwater Pollution Prevention Plan complies with the requirements of the City of Leander, Williamson County, and the Texas Commission on Environmental Quality (TCEQ) in effect at the time of permitting.

D. INSPECTION AND MAINTENANCE PROCEDURES

BM 22, LLC (and/or their qualified agents) and Contractors, as Operators, shall be independently responsible for inspection of the controls, and for required record keeping (reference Appendix A). All Operators will be responsible for revisions to the controls, as necessary, based on inspections. The Contractors will be responsible for maintenance of the controls.

1. Inspection of Controls:

    a. Personnel provided by the Operators shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of TPDES General Permit No. TXR150000, familiar with the construction site, and knowledgeable of this plan. Sediment and erosion control measures identified in this plan shall be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

    b. Where sites have been finally or temporarily stabilized, inspections shall be conducted at least once every month.

    c. In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

    d. This plan must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the plan must be completed within seven (7) calendar days following the inspection. If existing controls are modified or if additional controls are necessary, an implementation schedule must be described in this plan and/or Inspection and Maintenance Report, and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

    e. An Inspection and Maintenance Report summarizing the scope of the inspection, the dates of the inspection, and major observations relating to the implementation and/or revision of this plan must be made and retained as part of the plan. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of controls that need to be maintained; locations of controls that failed to operate as designed or proved inadequate for a particular location; and locations where additional controls are needed. Reports must identify any incidents of non-compliance.

2. Maintenance of Controls:

    a. All protective measures and controls identified in this plan shall be maintained in effective operating condition. If, through inspections or other means, it is determined

that controls are not operating effectively, then the Contractors, as Operators, shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the plan and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

b. If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the Operators shall replace or modify the control as soon as practicable after making the discovery.

c. Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%.

d. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

e. If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event if feasible. If the Operators do not own or operate the off-site conveyance, then the Operators must work with the owner or operator of the property to remove the sediment.

E. POLLUTION PREVENTION MEASURES

1. Non-Storm Water Discharges: The following non-stormwater discharges may occur from the site during the construction period:

   a. Discharges from fire fighting activities;

   b. Uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);

   c. Water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local, state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

   d. Uncontaminated water used to control dust;

   e. Potable water sources including waterline flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);

f. Uncontaminated air conditioning condensate;

g. Uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and

h. Lawn watering and similar irrigation drainage.

2. Material Inventory: The materials or substances listed below are expected to be present onsite during construction:

- Concrete and concrete products
- Asphalt and asphalt products
- Metal reinforcing materials - rebar, welded wire fabric
- Fertilizers
- Petroleum based products
- Wood
- Plastic (PVC) and metal pipe and fittings
- Rock, gravel, sand, and soil
- Paint

3. Material Management Practices: The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff:

a. Good Housekeeping: The following good housekeeping practices will be followed onsite during the construction project:

- An effort will be made to store only enough product required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers.
- Materials will be stored in the temporary spoils disposal area as shown on erosion/sedimentation control plan, or an area as may otherwise be approved by CalAtlantic Homes of Texas, Inc. and Engineer.
- Products will be kept in their original containers with the original manufacturers' labels.
- Whenever possible, all of a product will be used before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.

- The Contractor will inspect daily to ensure proper use and disposal of materials onsite.

b. Hazardous Products: These practices are used to reduce the risks associated with hazardous materials (if applicable):

   - Products will be kept in original containers unless they are not resealable.

   - Original labels and material safety data will be retained, as they contain important product information.

   - If surplus product must be disposed of, manufacturers' and/or local and state recommended methods for proper disposal will be followed.

c. The following product specific practices will be followed onsite:

   - Petroleum Products: All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphaltic substances used onsite will be applied according to the manufacturers' recommendations.

   - Fertilizers: Fertilizers will be applied only in the minimum amounts recommended by the manufacturer or as otherwise indicated on the plans. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. The contents of any partially used bags of fertilizer will be stored in a manner so as to avoid spills.

   - Concrete: Onsite concrete truck wash out is allowed, but is restricted as noted below. Excess dried concrete will be removed from the site and transported to a permitted off-site spoil disposal area.

     - Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited.

     - Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measure to prevent runoff from the construction site.

     - Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck washout water is prohibited at all times, and the Operators shall insure that controls are sufficient to prevent the discharge of concrete truck wash out as the result of rain.
     - The discharge of wash out water shall not cause or contribute to groundwater contamination.

4. Spill Control Practices: In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

    - Site personnel will be made aware of the manufacturers' recommended methods for spill cleanup and the location of the information and cleanup supplies.

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

    - All spills will be cleaned up immediately upon discovery.

5. Releases of Reportable Quantities (RQ): The EPA has issued regulations that define what reportable quantity levels are for oil and hazardous substances. These regulations can be found at 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302. The TCEQ has issued similar regulations under 30 TAC Chapter 327. If there is an RQ release during the construction period, then the following steps must be taken:

    - For quantities less than the reportable quantity* – The contractor will contain and isolate the spilled substance. The remaining spilled substance and contaminated soil will be removed and disposed of properly.

    - For quantities more than the reportable quantity* – The contractor will contain and isolate the spilled substance in accordance with 30 TAC Chapter 327. The contractor will then contact the appropriate spill response team and the TCEQ Austin Regional Office (512)339-2929 or the State Emergency Response Center at 1 (800)832-8224 and the National Response Center immediately at (800) 424-8802. The remaining spilled substance and contaminated soil will be removed and disposed of in an using approved emergency response methods. The proper authorities shall be kept informed during the cleanup process. Within 14 days, modify the SWPPP with a written description of the release providing the date and circumstances of the release and the steps to be taken to prevent another release.

    * Reportable quantity (RQ) is defined in 30 TAC Chapter 327. The RQ for petroleum products, oil, and industrial solid waste are shown below. For hazardous substances see 30 TAC Chapter 327.4 and 40 CFR Chapter 302.4.

    The RQ for *oil, petroleum product and used oil* is as follows:

    (1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:
        (A) for spills or discharges onto land – 210 gallons (five barrels); or
        (B) for spills or discharges directly into water in the state – quantity sufficient to create a sheen.
    (2) The RQ for petroleum product or used oil shall be:
        (A) except as noted under (B) below, for spills or discharges onto land – 25 gallons;
        (B) for spills or discharges to land from PST exempted facilities – 210 gallons (five barrels); or

(C) for spills or discharges directly into water in the state – quantity sufficient to create a sheen.

The RQ for spills or discharges into water in the state for *industrial solid waste or other substances* shall be 100 pounds.

6. Spill Response Handbook: The TCEQ Small-Business Handbook for Spill Response (RG-285) is provided as a supplementary resource and can be found in *Appendix D*.

F. POLLUTION PREVENTION PLAN CERTIFICATION

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

Facility Operator *(Plans and Specifications)*:

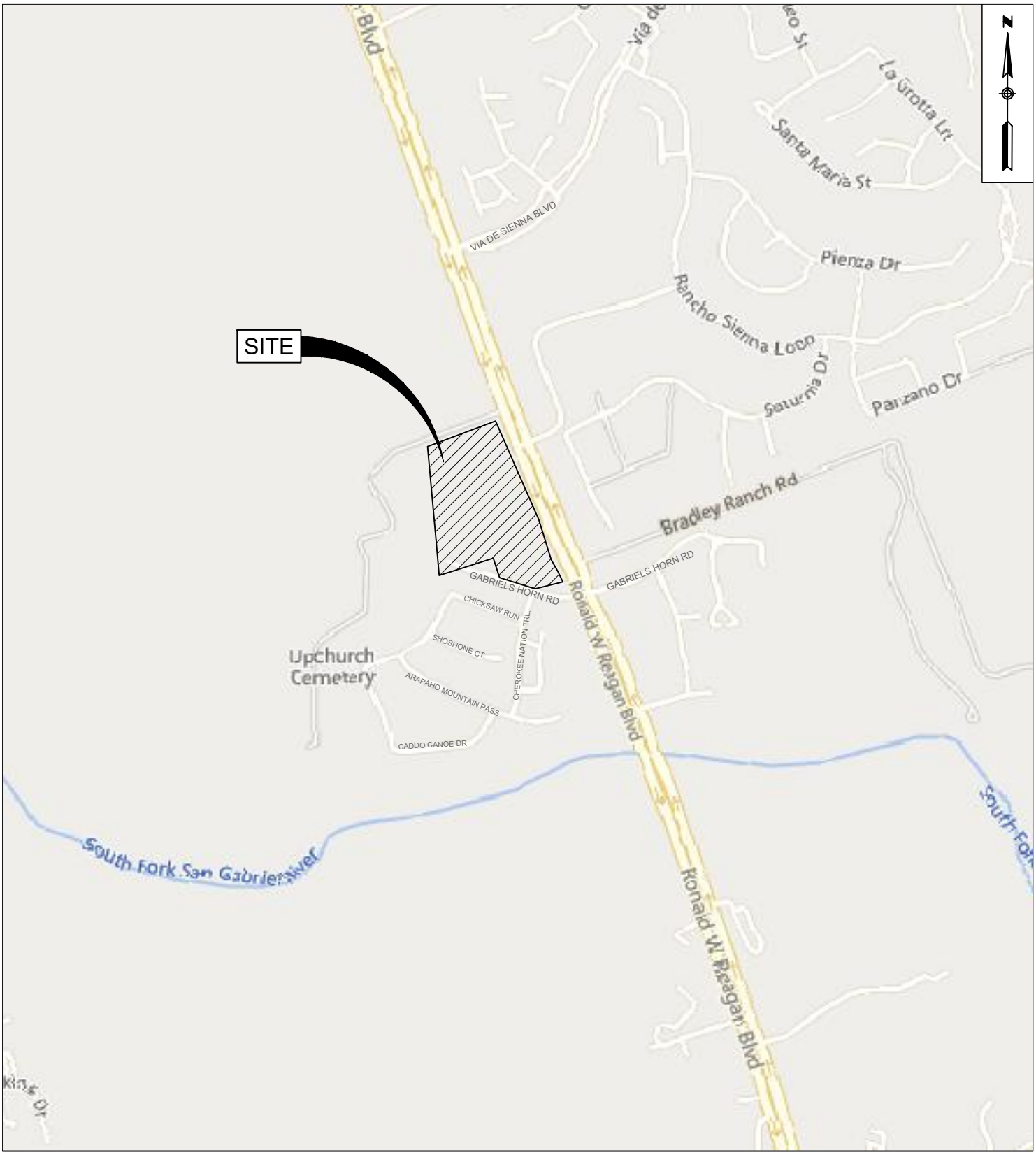
By: Swamy Devuni Owner 05/17/2025

Name Title Date

Printed Name: Swamy Devuni
Company: BM 22, LLC
Address: 2508 Dapple Gray Lane
Leander, Texas, 78641

EXHIBIT 1

PROJECT LOCATION MAP



LJA Engineering, Inc.

7500 Rialto Boulevard Building II
Suite 100
Austin, Texas 78735

Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

ROAD MAP

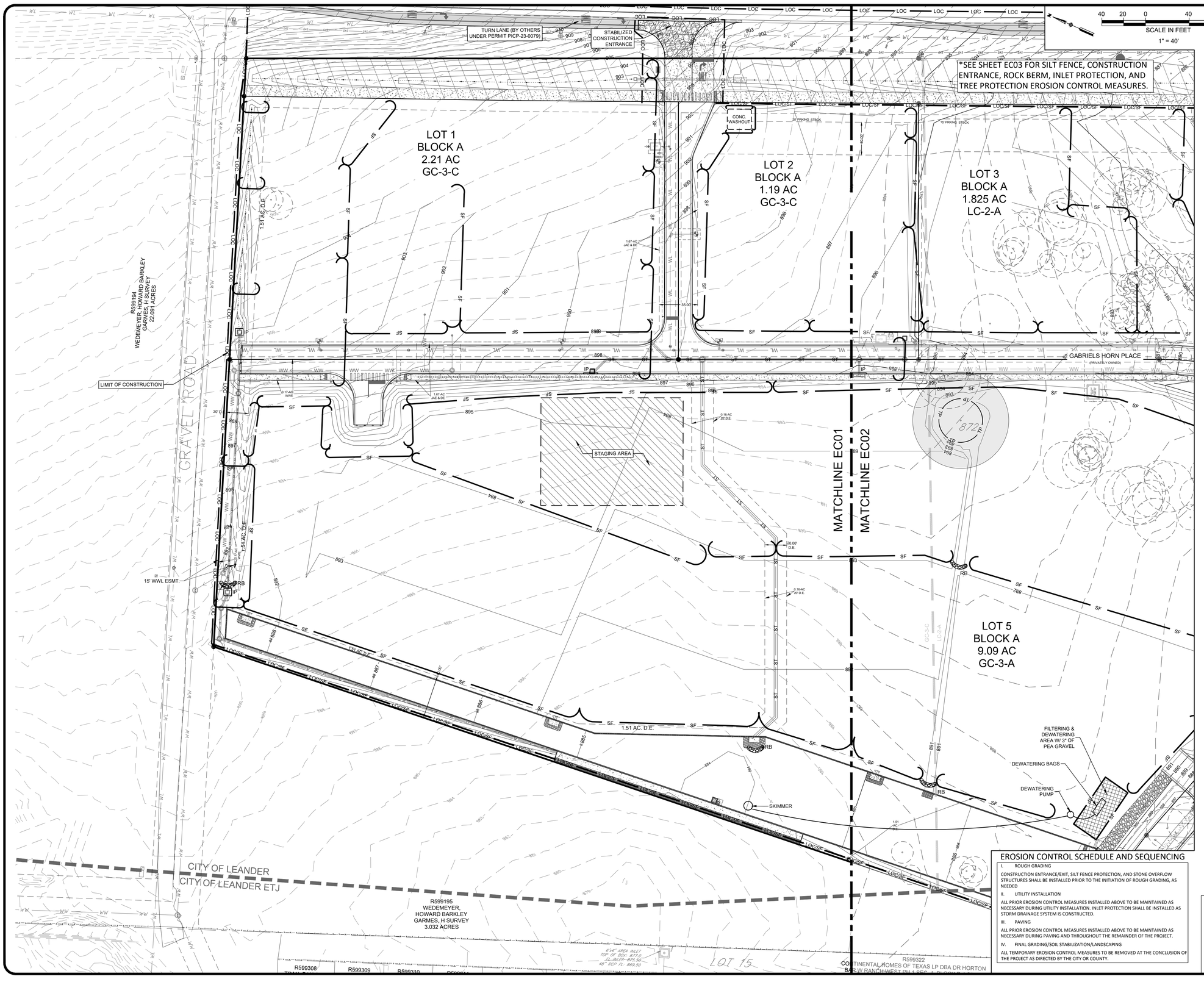
GABRIELS HORN 17.8-AC
GABRIELS HORN RD. & RONALD REAGAN BLVD., LEANDER, TEXAS 78641

EXHIBIT 1

1000 5000 0 1000 2000
SCALE IN FEET
1" = 1000'

EXHIBIT 2

SITE MAP / TEMPORARY EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN



LEGEND

PROPOSED	EXISTING	
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
		PROPERTY BOUNDARY
RB		ROCK BERM
SCE		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN / TREE PROTECTION (CoL DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
WW	WW	WASTEWATER LINE
WL	WL	WATER LINE

NOTES:

1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLAIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5,1)
2. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT HAVE MIGRATED ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION AND SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. CONTRACTOR SHALL MAINTAIN THE DE-WATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DE-WATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DE-WATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
7. SEEDING FOR RE-ESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC. 164-W2001 SEEDING FOR EROSION CONTROL). RE-SEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
8. ALL DISTURBED AREAS OUTSIDE OF IMPERVIOUS COVER AND RIPRAP IMPROVEMENTS ARE TO BE PERMANENTLY SEEDED AND STABILIZED ONCE CONSTRUCTION OF THE AREA IS COMPLETE.

SPOILS STAGING NOTES:
ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT, AND CONTRACTOR STAGING AREAS.

CONSTRUCTION SEQUENCE

1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
4. DELIVER APPROVED ROUGH CUT SHEETS TO THE CITY OF LEANDER PRIOR TO CLEARING AND GRUBBING. TEMPORARY ROCK BERMS SHALL BE INSTALLED DIRECTLY AFTER CLEARING AND GRUBBING IS COMPLETED.
5. ROUGH GRADE STREETS.
6. INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT.
7. DELIVER STORM SEWER CUT SHEETS TO THE CITY OF LEANDER.
8. BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE DISTURBED AREA AS MUCH AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
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14. LAY ASPHALT.
15. COMPLETE ALL UNDERGROUND INSTALLATIONS WITH THE R.O.W.
16. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
17. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY ITEM 16.

NOTE: ROUGH GRADING ONLY - STEPS 1 THROUGH 3 ONLY.
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EROSION CONTROL SCHEDULE AND SEQUENCING

I. ROUGH GRADING

CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED

II. UTILITY INSTALLATION

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.

III. PAVING

ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.

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ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OR COUNTY.

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
EROSION & SEDIMENTATION CONTROL PLAN
SHEET 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-EC01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

EC01

SHEET NO. 10 OF 70 SHEETS

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Last Modified: Sep. 15, 25 - 11:51
Plot Date/Time: Oct. 01, 25 - 10:27:51

*SEE SHEET EC03 FOR SILT FENCE, CONSTRUCTION ENTRANCE, ROCK BERM, INLET PROTECTION, AND TREE PROTECTION EROSION CONTROL MEASURES.

TURN LANE (BY OTHERS UNDER PERMIT PICP-23-0079)

STABILIZED CONSTRUCTION ENTRANCE

CONC. WASHOUT

DEWATERING BAGS

FILTERING & DEWATERING AREA W/ 3" OF PEA GRAVEL

DEWATERING PUMP

SKIMMER

STAGING AREA

LOT 2
BLOCK A
1.19 AC
GC-3-C

LOT 3
BLOCK A
1.825 AC
LC-2-A

LOT 4
BLOCK A
2.06 AC

LOT 5
BLOCK A
9.09 AC
GC-3-C

R568058
TESCH, ROBERT E
VALLEY VISTA PH 1
BLOCK L, LOT 1
(OPEN SPACE)

R510101
BOB TESCH
INVESTMENTS LL
GARMES, H SURVE
1.858 ACRES

GABRIELS HORN PLACE
(PRIVATELY OWNED)

GABRIELS HORN ROAD
(60' R.O.W.)

CHEROKEE NATION TRAIL

CHICKASAW RUN

MATCHLINE EC01

MATCHLINE EC02

R567980
PACESETTER HOMES LLC
VALLEY VISTA PH 1
BLOCK A, LOT 2

R567981
VENEZ, BRENT
EUGENE
VALLEY VISTA PH 1
BLOCK A, LOT 3

R567982
SKOP, RYAN
CHRISTOPHER &
ALYSSA LORRAINE
VALLEY VISTA PH 1
BLOCK A, LOT 4

R567983
CALDWELL, KARA
NICO
VALLEY VISTA PH 1
BLOCK A, LOT 5

R567984
GARZA, JONATHAN
J & KRYSTAL
MARIE L
VALLEY VISTA PH 1
BLOCK A, LOT 6

R567985
BANET, JOSHUA
DAVID
VALLEY VISTA PH 1
BLOCK A, LOT 7

R567986
TRAN, HAN
VALLEY VISTA PH 1
BLOCK A, LOT 8

R567987
AKERS, JAMES
DARELL & REBECA
VALLEY VISTA PH 1
BLOCK A, LOT 9

R567988
WILSON, MACKENZIE &
KELEN NICHAR
VALLEY VISTA PH 1
BLOCK A, LOT 10

R567989
PANDEY, KIRAN P
& SUJAN
VALLEY VISTA PH 1
BLOCK A, LOT 11

R583210
PACESETTER HOMES LLC
VALLEY VISTA PH 2
BLOCK A, LOT 12

R583211
MAGSINO, RYAN &
STEPHANIE BETH
DERKOWSKI
VALLEY VISTA PH 2
BLOCK A, LOT 13

R567979 PACE SETTER HOMES LLC VALLEY VISTA PH 1 BLOCK A, LOT 1 0.283 AC

R599322
CONTINENTAL HOMES OF TEXAS LP DBA DR HORTON
BAR W RANCH WEST PH 1 SEC 1 BLOCK A

LOT 1 - HOA LANDSCAPE

LEGEND

PROPOSED	EXISTING	
LOC		LIMITS OF CONSTRUCTION
SF		SILT FENCE
LOC/SF		LIMITS OF CONST./SILT FENCE
TP		TREE PROTECTION
IP		INLET PROTECTION
		PROPERTY BOUNDARY
RB		ROCK BERM
SCE		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING / SPOILS / VEHICLE USE LOCATION
		TREE TO REMAIN / TREE PROTECTION (Col. DTL. 303-2)
		TREE TO BE REMOVED
800	800	CONTOURS
ST	ST	STORM SEWER LINE
		WASTEWATER LINE
WL	WL	WATER LINE

NOTES:

1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE RESTABLALIZED BY REVEGETATION MATTING. (ECM 1.4.4.B.3, SECTION 5,1)
2. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT HAVE MIGRATED ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION AND SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. CONTRACTOR SHALL MAINTAIN THE DE-WATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DE-WATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DE-WATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
7. SEEDING FOR RE-ESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC. 164-W2001 SEEDING FOR EROSION CONTROL). RE-SEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
8. ALL DISTURBED AREAS OUTSIDE OF IMPERVIOUS COVER AND RIPRAP IMPROVEMENTS ARE TO BE PERMANENTLY SEEDED AND STABILIZED ONCE CONSTRUCTION OF THE AREA IS COMPLETE.

SPOILS STAGING NOTES:
ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT, AND CONTRACTOR STAGING AREAS.

CONSTRUCTION SEQUENCE

1. CALL CITY OF LEANDER PUBLIC WORKS DEPARTMENT AT 259-2640, 48 HOURS PRIOR TO BEGINNING ANY WORK. CALL THE ONE CALL CENTER AT 472-2822 FOR UTILITY LOCATIONS AND OBTAIN PERMIT FOR ANY WORK WITHIN CITY OF LEANDER R.O.W.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING.
3. ROUGH CUT ALL REQUIRED OR NECESSARY PONDS.
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40 20 0 40 80
SCALE IN FEET
1" = 40'

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GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
EROSION & SEDIMENTATION CONTROL PLAN
SHEET 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: A641-0401-P-EC01

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

EC02

SHEET NO. 11 OF 70 SHEETS

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EXHIBIT 3

WATER QUALITY PLAN / PERMANENT CONTROLS

NOTE:
TOP OF WALL ELEVATION FOR THE BATCH-DETENTION WATER QUALITY & DETENTION BASIN A IS 881.50' TYPICAL UNLESS OTHERWISE NOTED.

POND SHALL BE INSTALLED WITH 6' HT. FENCE / PEDESTRIAN FALL RAIL ALONG TOP OF POND WALLS PER COA STD. DTL. 707S-1. THE TOTAL COMBINED HEIGHT OF THE WALL AND FENCE MUST BE A MINIMUM OF SIX (6) FEET ABOVE THE EXTERIOR FINISHED GRADE.

BATCH DETENTION WATER QUALITY W/ STACKED DETENTION POND CALCULATIONS FOR TCEQ WPAP PERMITTING IN WILLIAMSON COUNTY

POND A (Int Ronald Reagan / Gabriels Horn)

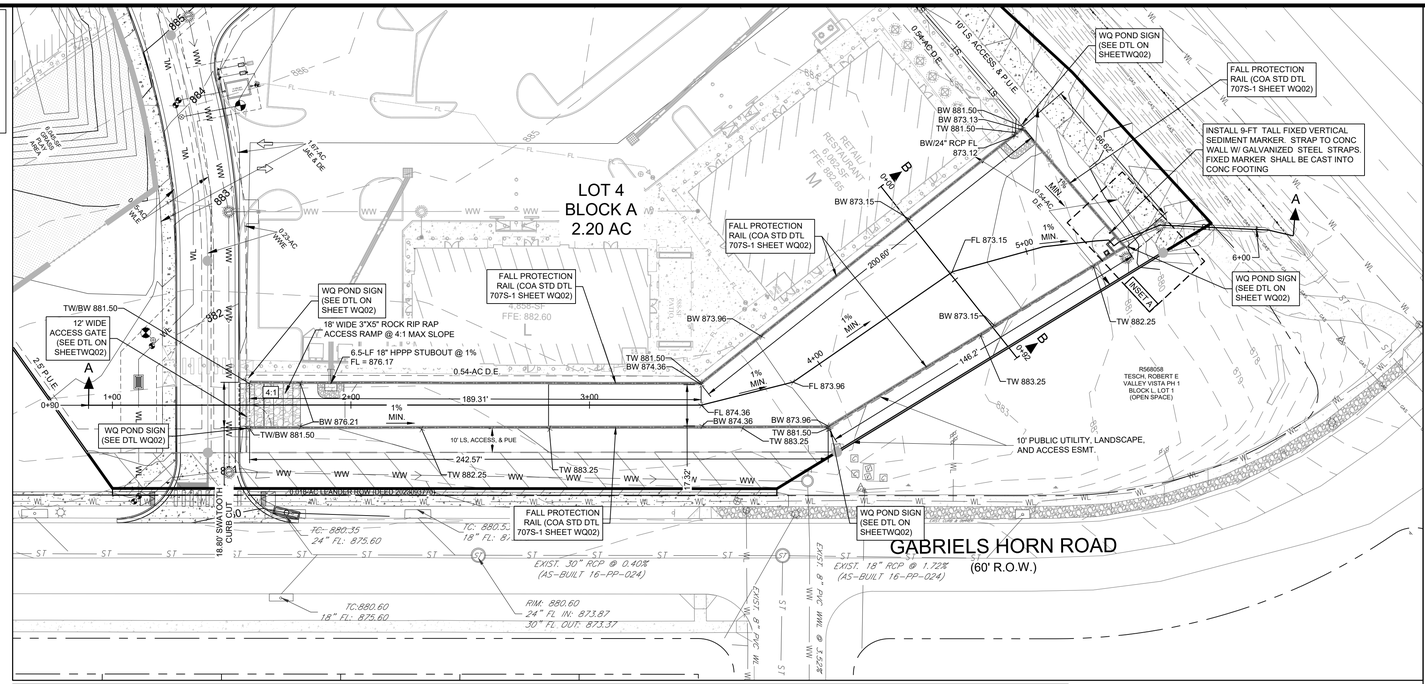
DRAINAGE AREA DATA:

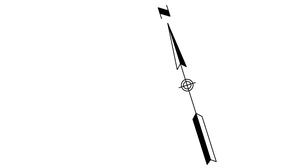
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION (91% REMOVAL EFFICIENCY)		
DRAINAGE AREA TO CONTROL (A_C)	4.514	ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	85.00	PERCENT
DRAINAGE AREA IMPERVIOUS COVER (A_I)	3.84	ACRES
AV. ANNUAL PRECIPITATION (P)	32.00	IN
L_M TOTAL DRAINING TO POND	3340.0	LBS
L_M TOTAL COMPENSITORY	298	LBS (Compensatory IC for access imp. & sidewalks)
L_M TOTAL (POND DESIGN)	3638	LBS
PERVIOUS AREA REMAINING IN DA (A_P)	0.68	ACRES
TSS LOAD REMOVED BY PROP. WQ POND (L_R)	3877	LBS
FRACTION OF ANNUAL RUNOFF / OUTFALL AREA (F)	0.94	
RAINFALL DEPTH	2.40	IN
POST-DEV. RUNOFF COEFFICIENT	0.69	
ON-SITE WATER QUALITY VOL. REQUIRED (WQV)	27,299	CF
TOTAL CAPTURE VOLUME (WQV x 1.20)	32,759	CF

WATER QUALITY CONTROL CALCULATIONS:	REQUIRED	PROVIDED
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION		
WATER QUALITY VOLUME (WQV = CD*DA*3630)	32,759 CF	32,760 CF
MAX PONDING DEPTH ABOVE WQ OUTLET (H)		4.11 FT
WATER QUALITY ELEVATION		876.61 FT MSL

BATCH DETENTION BASIN:

ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]
872.5	0	0	0
873	2,050	513	513
874	7,967	5,009	5,521
875	10,192	9,080	14,601
876	11,726	10,959	25,560
877	12,053	11,890	37,449
878	12,125	12,089	49,538
879	12,196	12,160	61,698
880	12,267	12,231	73,930
881	12,339	12,303	86,232
881.5	12,374	6,178	92,410





LEGEND

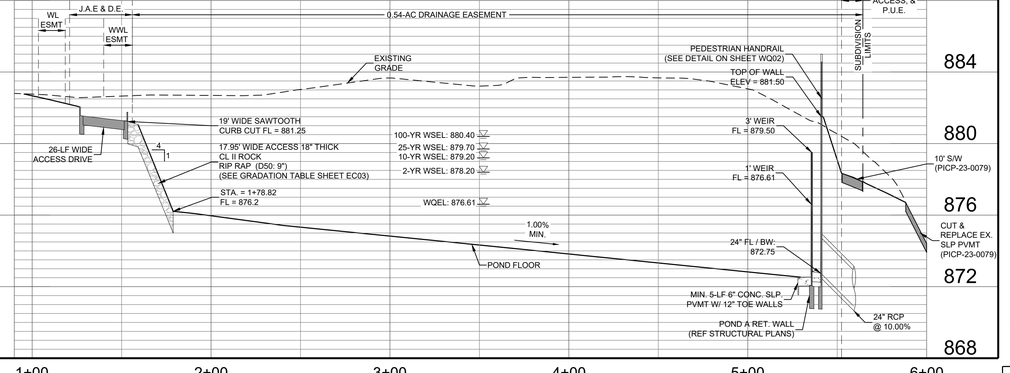
- BOUNDARY LINE/ R.O.W.
- 990 — PROPOSED CONTOURS
- 990 — EXISTING CONTOURS
- CONCRETE
- ROCK RIPRAP

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

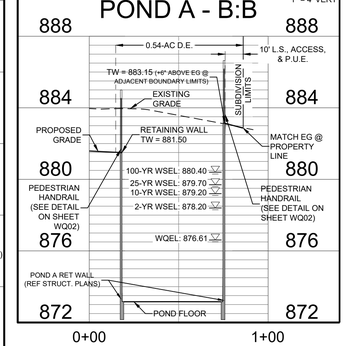
POND A - A:A

SCALE: 1" = 40' HOR, 1" = 4' VERT



POND A - B:B

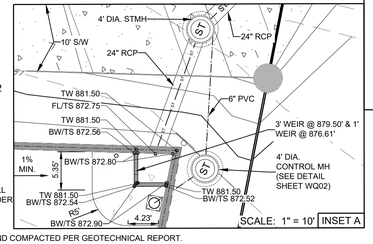
SCALE: 1" = 40' HOR, 1" = 4' VERT



Overall Drainage Study Point Summary		
Study Point A		
Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	20.70	18.60
10-Year	35.30	31.30
25-Year	45.50	40.80
100-Year	63.20	63.00

CONTROLS NARRATIVE:

BATCH DETENTION POND IS EQUIPPED WITH A RAIN SENSOR MOUNTED AT THE CONTROL PANEL. VALVE IS TO REMAIN NORMALLY CLOSED. WHEN CONTACT IS MADE BY LEVEL SWITCH, 12 HOUR DELAY TIMER SHALL BEGIN AS SOON AS NO MOISTURE IS DETECTED BY THE RAIN SENSOR. IF THE RAIN SENSOR DETECTS PRECIPITATION, DELAY TIMER WILL RESET TO 12 HOURS. ONCE VALVE OPENS, IT WILL REMAIN OPEN UNTIL THE POND IS DRAINED OR RAIN SENSOR RESETS.



Water Quality Drawdown Calculations

Time (HRS)	Drawdown Percentage (%)	Remaining WQ Volume (CF)	WQ Stage Elevation (FT)
0:00	0	32,760	876.61
12:00	0	32,760	876.61
24:00	25	24,570	875.91
36:00	50	16,380	875.23
48:00	75	8,190	874.29
60:00	100	0	872.50

Note: Batch Det. Requires 12-hr Lag and to be drained w/in the next 48-hrs.

DRAWDOWN CALCULATION FOR BATCH DET WQ BASIN

WQ VOLUME = 32760 CF

MINIMUM DRAWDOWN TIME = 36 HR = 129600 SECONDS (48 HRS w/ 12-HR DELAY)

FLOW = 32760 CF / 129600 SEC = 0.253 CFS

HEAD= 875.16 - 872.75 = 2.91 (POND AVG HEAD TO ORIFICE CL)

A = 0.253 CFS/(.60 * (64.4 *2.91) ^.5)= 0.030762 SF

R =(A/(3.14))^.5 = 0.10 FT

D (in.) = 2R * 12 = 2.38 inch orifice

Q =0.0308 * .60 * (64.4 * 2.91)^.5 = 0.253 CFS

DRAWDOWN TIME = 32760 CF / 0.253 CFS = 129600 SEC = 36 HRS

THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS

DETENTION POND SUMMARY - A

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	22.10	12.05	7.30	12.18	878.40
10YR	33.70	12.05	12.70	12.17	879.20
25YR	41.80	12.05	17.60	12.15	879.70
100YR	55.70	12.05	30.10	12.13	880.40

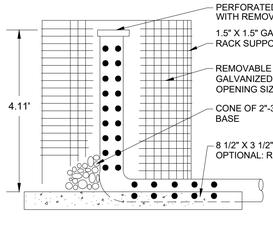
Detention Pond - Stage Storage Table

Elevation (FT)	Area (AC)	A1+A2+SQR (A1*A2) (AC)	Incremental Volume (AC-FT)	Cumulative Volume (AC-FT)
872.5	0	0	0	0
873	0.047	0.047	0.008	0.008
874	0.183	0.323	0.108	0.115
875	0.234	0.624	0.208	0.323
876	0.269	0.754	0.251	0.575
877	0.277	0.819	0.273	0.848
878	0.278	0.833	0.278	1.125
879	0.280	0.837	0.279	1.404
880	0.282	0.842	0.281	1.685
881	0.283	0.847	0.282	1.968
881.5	0.284	0.851	0.142	2.109

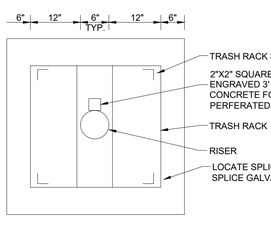
Outlet Structure - Stage Discharge Table

Stage / Elevation	1' Weir @ 876.61 Q (cfs)	3' Weir @ 879.50 Q (cfs)	TOTAL Q (cfs)
872.5	0.00	0.00	0.00
873	0.00	0.00	0.00
874	0.00	0.00	0.00
875	0.00	0.00	0.00
876	0.00	0.00	0.00
877	0.67	0.00	0.67
878	3.55	0.00	3.55
879	5.79	0.00	5.79
880	19.62	3.18	22.80
881	27.59	16.53	44.12
881.5	32.44	25.46	57.90

HEAD REQUIRED TO PASS 100-YR EVENT FROM POND A OUTFALL TO PIPE OUT		HEAD REQUIRED TO PASS 25-YR EVENT FROM POND A OUTFALL TO PIPE OUT	
100-yr Storm Event Ponding Height (above centroid)=(Q/(Cd*A))2 /(2*32.2)		25-yr Storm Event Ponding Height (above centroid)=(Q/(Cd*A))2 /(2*32.2)	
0.6 Cd		0.6 Cd	
24	Pipe Diameter or Orifice Width (in)	24	Pipe Diameter or Orifice Width (in)
3.14	Area of Pipe (sf)	3.14	Area of Pipe (sf)
1.00	Orifice Area	1.00	Orifice Area
1.00	Number of Pipes / Orifices	1.00	Number of Pipes / Orifices
3.14	Total Area (sf)	3.14	Total Area (sf)
30.1	Discharge (100 Yr) (cfs)	17.6	Discharge (25 Yr) (cfs)
872.75	Outfall Pipe FL (ft)	872.75	Outfall Pipe FL (ft)
3.96	Height Above Centroid (ft)	1.35	Height Above Centroid (ft)
877.71	**100-Yr WSEL to Pass 100-yr Discharge (ft) through Pipe Out**	**875.10**	**25-Yr WSEL to Pass 25-yr Discharge (ft) through Pipe Out**
880.40	100-Yr WSEL to Pass 100-yr Discharge (ft) over Outfall Structure Weir	879.70	25-Yr WSEL to Pass 25-yr Discharge (ft) over Outfall Structure Weir
879.50	Pond Weir Elev. (ft)	879.50	Pond Weir Elev. (ft)
Yes	Is 100-yr WSEL from Pipe Out > 100-yr WSEL over Weir?	**Yes**	Is 25-yr WSEL from Pipe Out > 25-yr WSEL over Weir?
Yes	Is Pond Weir > 100-yr WSEL from Pipe Out?	**Yes**	Is Pond Weir > 25-yr WSEL from Pipe Out?



SIDE VIEW OF RISER



TOP VIEW OF RISER (SQUARE DESIGN)

INTAKE RISER DETAIL
NOT TO SCALE

CONSTRUCTION NOTES:

1. FOR THE POND AND BERMS, EARTHWORK SHALL BE IN CONFORMANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND EARTHWORK SECTION OF THE GEOTECHNICAL REPORT.
2. EMBANKMENT SHALL BE INSTALLED IN LIFTS AND COMPACTED PER GEOTECHNICAL REPORT.
3. ALL WORK SHALL BE PERFORMED WITHIN LIMITS OF CONSTRUCTION.
4. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
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7. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
8. CONTRACTOR SHALL PROVIDE STRUCTURAL DESIGN FOR ALL RETAINING WALLS GREATER THAN 4 FEET HIGH AS A SUBMITTAL TO THE ENGINEER PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO OVER EXCAVATE IN POND AREAS AS REQUIRED FOR PLACEMENT OF TOPSOIL & LINER PER THIS SHEET.
7. THE DETENTION AND BATCH WATER QUALITY BASIN IS TO BE CONSTRUCTED FIRST IN THE SEQUENCE OF CONSTRUCTION (SOC) BEFORE SITE CLEARING AND GRADING TO ACT AS A SEDIMENTATION POND DURING CONSTRUCTION.
8. A DE-WATERING METHOD/PLAN FOR THE POND MUST BE APPROVED BY THE CITY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD/PLAN MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS IN THE PONDED WATER TO THE GREATEST EXTENT FEASIBLE.
9. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION PLAN & PROFILE SHEET 1

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE

09/10/2025
DATE:
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: (see wq02)

09/10/2025
STATE OF TEXAS
CHARLES R. HAGER
127034
LICENSED PROFESSIONAL ENGINEER
CRH

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ01

SHEET NO. 19 OF 70 SHEETS

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User: cgehringer
Last Modified: Oct. 06, 25 - 16:26
Plot Date/Time: Oct. 06, 25 - 16:28:06

Texas Commission on Environmental Quality

ULTIMATE BUILD OUT

TSS Removal Calculations 04-20-2009 **Project Name: Gabriels Horn Subdivision Pond A**

Date Prepared: 9/23/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point A

Total drainage basin/outfall area =	**4.51**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'A'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA A)
Post-development impervious area within drainage basin/outfall area =	**3.63**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.80**		
$L_{M\ THIS\ BASIN}$ =	**3159**	lbs.	

Compository Drainage Provided by Basin 'A' Water Quality Pond Summary

Total drainage basin/outfall area =	**5.189**	acres	<--AREA ADJACENT TO BASIN 'A' NOT CAPTURED BY POND A
Predevelopment impervious area within drainage basin/outfall area =	**2.014**	acres	(SEE SHEET DM02, DRAINAGE AREA OS-A & D)
Post-development impervious area within drainage basin/outfall area =	**2.356**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.45**		
$L_{M\ (Compository)}$ =	**298**	lbs.	
$L_{M\ (TOTAL)}$ =	**3457**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)
Removal efficiency = **91** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**4.514**	acres
A_I =	**3.630**	acres
A_P =	**0.88**	acres
L_R =	**3671**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **3457** lbs.

F = **0.94**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth = **2.40** inches
Post Development Runoff Coefficient = **0.63**
On-site Water Quality Volume = **24755** cubic feet

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

Off-site area draining to BMP = **0.00** acres
Off-site Impervious cover draining to BMP = **0.00** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

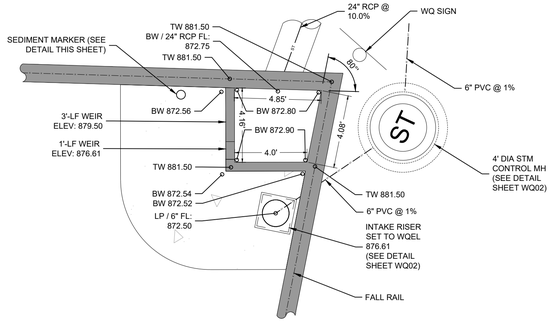
Storage for Sediment = **4951**

Total Capture Volume (required water quality volume(s) x 1.20) = 29706 cubic feet

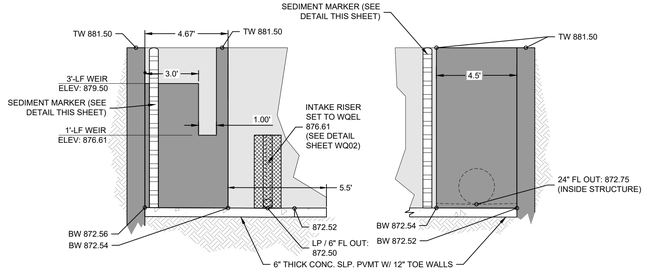
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

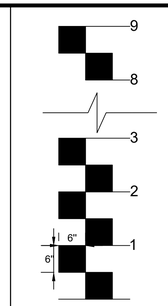
Required Water Quality Volume for extended detention basin = **29706** cubic feet
PROVIDED WATER QUALITY VOLUME= **32760** cubic feet



POND A OUTFALL STRUCTURE DETAIL
(TOP VIEW)
SCALE: 1" = 4'



POND A OUTFALL STRUCTURE DETAIL
(SECTION VIEW: FRONT AND SIDE)
SCALE: 1" = 4'



SEDIMENT MARKER DETAIL

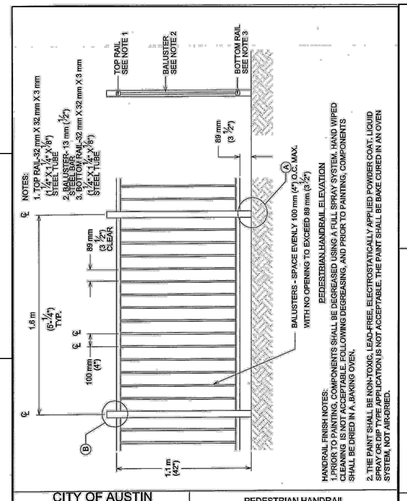
CONTRACTOR TO PAINT 6" STAINLESS STEEL POLE WITH BLACK PAINT AND LABEL ELEVATIONS IN INCREMENTS OF 1' TO ACT AS SEDIMENT DEPTH MARKER.

WATER QUALITY POND MAINTENANCE

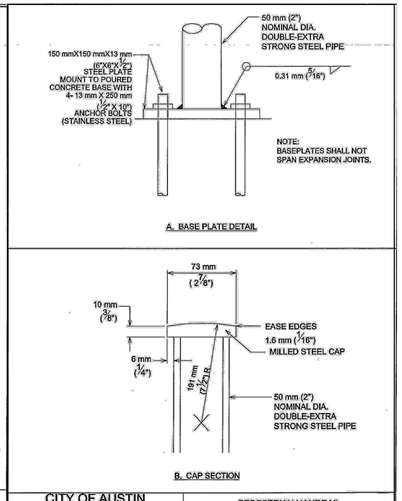
FACILITY OPERATOR:
BM 22, LLC
(703) 220-7265

EDWARDS AQUIFER ID:
RN112280268
TCEQ REGION: 11

WQ POND SIGN (RG-348A)
(N.T.S.)



CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 1 OF 4

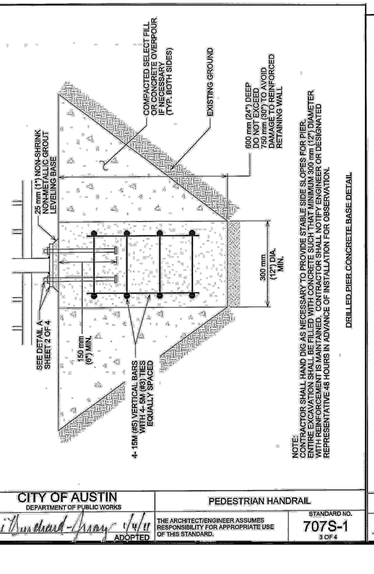


A. BASE PLATE DETAIL

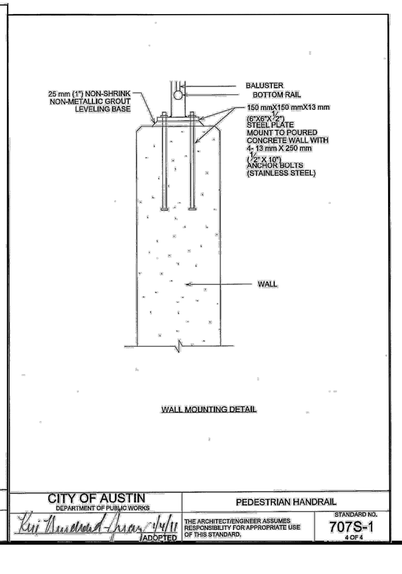
CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 2 OF 4

B. CAP SECTION

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 3 OF 4

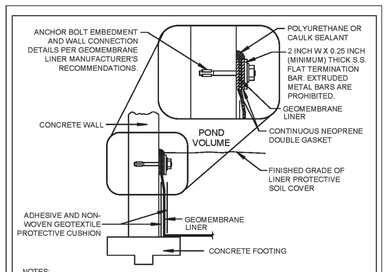


CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 3 OF 4



WALL MOUNTING DETAIL

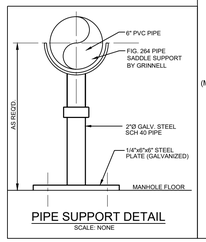
CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS
PEDESTRIAN HANDRAIL
Keri Burkhardt-Fraze 1/4/11 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 707S-1 4 OF 4



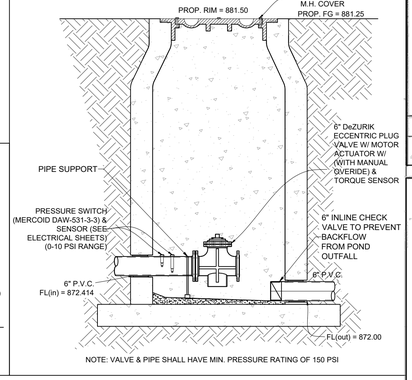
NOTES:

1. THIS SPECIFICATION IS FOR SUBMERGED GEOMEMBRANE LINER TERMINATIONS ON CONCRETE WALLS ONLY.
2. ALL TERMINATION BATTENS AND FASTENERS MUST BE STAINLESS STEEL (SS). THE TERMINATION BAR MUST HAVE A MINIMUM THICKNESS OF 1/4" (ONE QUARTER INCH) AND MINIMUM WIDTH OF 2" (TWO INCHES). EXTRUDED METAL BARS ARE PROHIBITED.
3. GEOMEMBRANE LINERS MUST MEET THE MINIMUM GUIDELINES OF ECM 1.6.2 AND BE INSTALLED PER THOSE GUIDELINES UNDER THE SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER.
4. ALL GASKETS, SEALANTS, CONCRETE WALL PREPARATION, AND ANCHORS MUST BE INSTALLED PER SPECIFICATIONS BY A CERTIFIED TECHNICIAN FOR THAT SPECIFIC MANUFACTURER.
5. PROTECTIVE SOIL COVER MUST MEET THE GUIDELINES OF ECM 1.6.2. THE TERMINATION BAR SHOULD BE ANCHORED JUST BELOW THE FINISH GRADE OF THE PROTECTIVE COVER.
6. GEOTEXTILE SHALL MEET MINIMUM MANUFACTURERS GUIDELINES AND ECM 1.6.
7. CONCRETE RETAINING WALLS MUST BE WATER-TIGHT AND PROVIDE WATERSTOPS PER STANDARD SPECIFICATION 414S.
8. DEVIATIONS FROM THIS DETAIL MAY BE PERMITTED PER MANUFACTURER GUIDELINES IF APPROVED BY THE CITY INSPECTOR AND A LICENSED GEOTECHNICAL ENGINEER.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT
CONCRETE WALL GEOMEMBRANE LINER ATTACHMENT
3/23/2023 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 661-4A

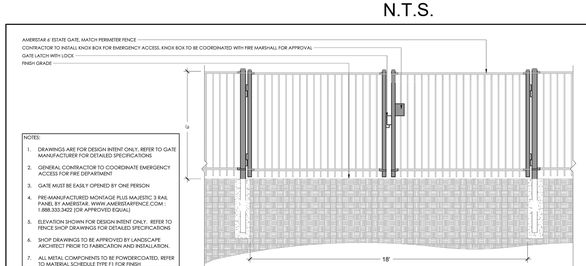


PIPE SUPPORT DETAIL
SCALE: NONE



NOTE: VALVE & PIPE SHALL HAVE MIN. PRESSURE RATING OF 150 PSI

4' DIA CONTROL MANHOLE DETAIL
N.T.S.



POND ACCESS GATE
1/2" = 1'-0"
P-RE-0714O-DETA-12

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 2

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: 09Pwqo1.DWG

09/10/2025
STATE OF TEXAS — CHARLES R. HAGER V — 127034 — LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ02

SHEET NO. 20 OF 70 SHEETS

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User: cgehringer
Last Modified: Oct 06, 25 - 16:26
Plot Date/Time: Oct 06, 25 - 16:26:09

NOTE:
TOP OF WALL ELEVATION FOR THE BATCH-DETENTION WATER QUALITY & DETENTION BASIN A IS 891.00' TYPICAL.

POND SHALL BE INSTALLED WITH 6' HT. FENCE / PEDESTRIAN FALL RAIL ALONG TOP OF POND WALLS PER COA STD. DTL. 707S-1. THE TOTAL COMBINED HEIGHT OF THE WALL AND FENCE MUST BE A MINIMUM OF SIX (6) FEET ABOVE THE EXTERIOR FINISHED GRADE.

CONSTRUCTION NOTES:

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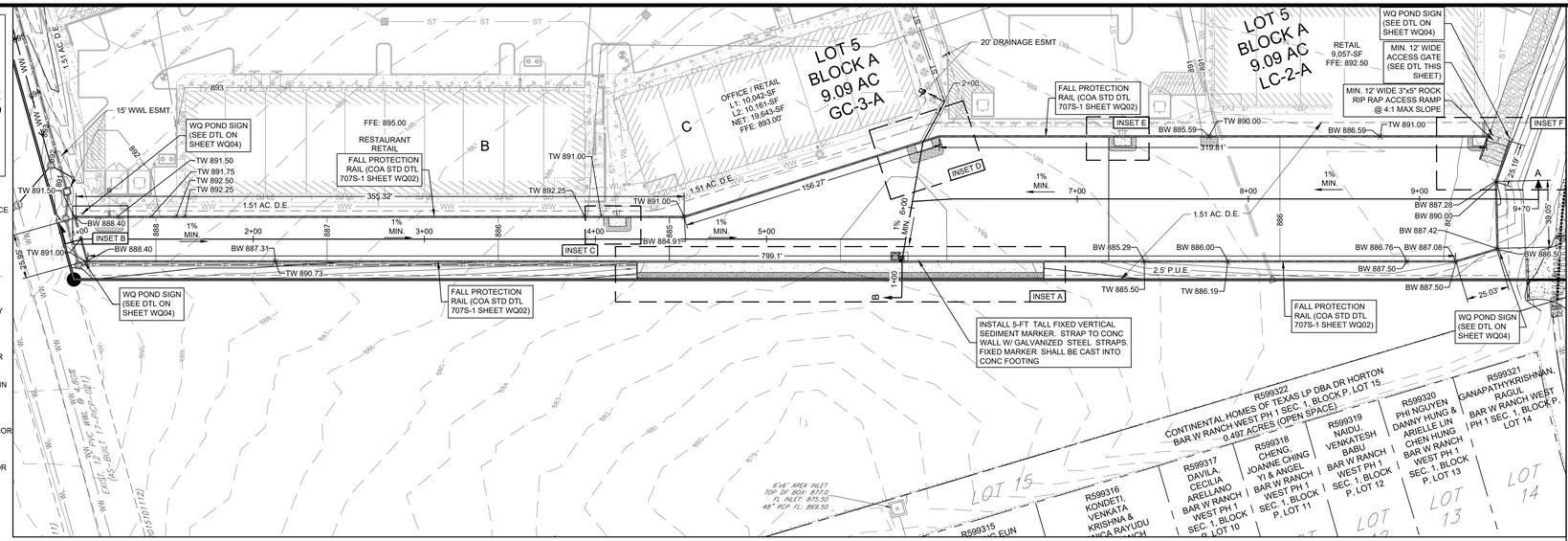
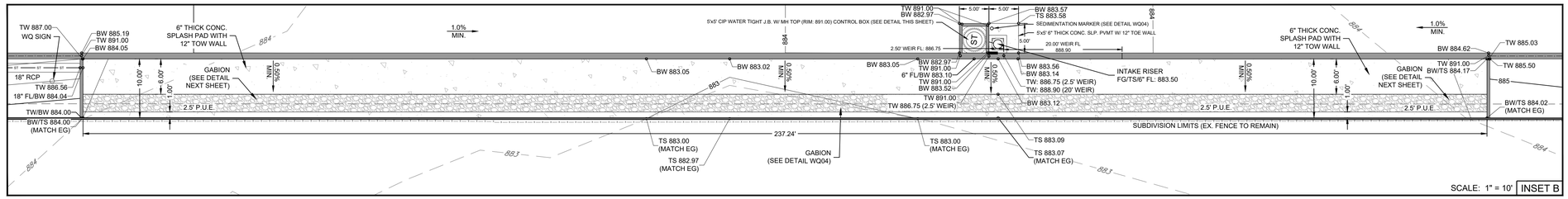
4. CONTRACTOR TO PROOF ROLL BOTTOM AND SIDES OF POND TO ENSURE FIRM BOTTOM. IF BOTTOM APPEARS FRACTURED CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF SAND BED ON TOPSOIL.
5. THE CONTRACTOR WILL BE REQUIRED TO PERFORM TESTING REQUIREMENTS TO SATISFY CITY OF LEANDER INSPECTIONS. THIS SHALL INCLUDE BUT NOT LIMITED TO PROVIDING NECESSARY WATER AS REQUESTED BY INSPECTOR.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR POSITIVE DRAINAGE IN BASIN AREA.
8. CONTRACTOR SHALL PROVIDE STRUCTURAL DESIGN FOR ALL RETAINING WALLS GREATER THAN 4 FEET HIGH AS A SUBMITTAL TO THE ENGINEER PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO OVER EXCAVATE IN POND AREAS AS REQUIRED FOR PLACEMENT OF TOPSOIL & LINER PER THIS SHEET.
7. THE DETENTION AND BATCH WATER QUALITY BASIN IS TO BE CONSTRUCTED FIRST IN THE SEQUENCE OF CONSTRUCTION (SOC) BEFORE SITE CLEARING AND GRADING TO ACT AS A SEDIMENTATION POND DURING CONSTRUCTION.
8. A DE-WATERING METHOD/PLAN FOR THE POND MUST BE APPROVED BY THE CITY ENVIRONMENTAL INSPECTOR IF THE TEMPORARY SEDIMENTATION POND IS DE-WATERED AFTER RAINFALL EVENTS. THE DE-WATERING METHOD/PLAN MUST MINIMIZE THE DISCHARGE OF SUSPENDED SEDIMENTS IN THE PONDED WATER TO THE GREATEST EXTENT FEASIBLE.
9. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.





CONTROLS NARRATIVE:

BATCH DETENTION POND IS EQUIPPED WITH A RAIN SENSOR MOUNTED AT THE CONTROL PANEL. VALVE IS TO REMAIN NORMALLY CLOSED. WHEN CONTACT IS MADE BY LEVEL SWITCH, 12 HOUR DELAY TIMER SHALL BEGIN AS SOON AS NO MOISTURE IS DETECTED BY THE RAIN SENSOR. IF THE RAIN SENSOR DETECTS PRECIPITATION, DELAY TIMER WILL RESET TO 12 HOURS. ONCE VALVE OPENS, IT WILL REMAIN OPEN UNTIL THE POND IS DRAINED OR RAIN SENSOR RESETS.

BATCH DETENTION WATER QUALITY
W/ STACKED DETENTION POND CALCULATIONS
FOR TCEQ WPAP PERMITTING IN WILLIAMSON COUNTY
POND B (Ronald Reagan - Northwest)

DRAINAGE AREA DATA:

THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION (91% REMOVAL EFFICIENCY)		
DRAINAGE AREA TO CONTROL (A_C)	11.48	ACRES
DRAINAGE AREA IMPERVIOUS COVER (IC)	85.00	PERCENT
DRAINAGE AREA IMPERVIOUS COVER (A_I)	9.76	ACRES
AV. ANNUAL PRECIPITATION (P)	32.00	IN
L_M TOTAL DRAINING TO POND	8492.0	LBS
L_M TOTAL COMPENSITORY	119	LBS (Compensatory IC for access imp. & sidewalks)
L_M TOTAL (POND DESIGN)	8611	LBS
PERVIOUS AREA REMAINING IN DA (A_P)	1.72	ACRES
TSS LOAD REMOVED BY PROP. WQ POND (L_R)	9858	LBS
FRACTION OF ANNUAL RUNOFF / OUTFALL AREA (F)	0.87	
RAINFALL DEPTH	1.44	IN
POST-DEV. RUNOFF COEFFICIENT	0.69	
ON-SITE WATER QUALITY VOL. REQUIRED (WQV)	41,651	CF
TOTAL CAPTURE VOLUME (WQV x 1.20)	49,981	CF

WATER QUALITY CONTROL CALCULATIONS:	REQUIRED	PROVIDED
THE WATER QUALITY CONTROL IS TO BE BATCH DETENTION		
WATER QUALITY VOLUME (WQV = CD*DA*3630)	49,981 CF	50,325 CF
MAX PONDING DEPTH ABOVE WQ OUTLET (H)		3.25 FT
WATER QUALITY ELEVATION		886.75 FT MSL

BATCH DETENTION BASIN:

ELEV.	AREA [SF]	VOL. [CF]	TOT. VOL. [CF]
883.5	0	0	0
884	2333	583	583
885	14570	8452	9035
886	24269	19420	28454
887	34080	29175	57629
888	38231	36156	93784
889	39362	38796	132581
890	39416	39389	171969
891	39470	39443	211412

DETENTION POND SUMMARY - B

STORM EVENT	INFLOW (CFS)	Time to Peak (hrs)	OUTFLOW (CFS)	Time to Peak (hrs)	WS ELEV.
2YR	49.90	12.08	15.70	12.24	888.40
10YR	76.30	12.08	30.80	12.20	889.10
25YR	94.50	12.08	51.20	12.17	889.40
100YR	125.90	12.08	88.20	12.14	889.80

Detention Pond - Stage Storage Table

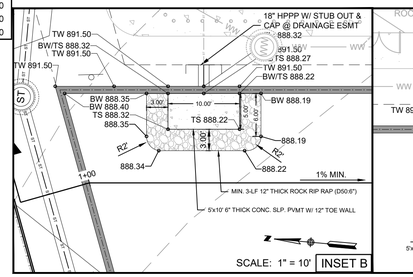
Elevation (FT)	Area (AC)	A1+A2+SQR (A1*A2) (AC)	Incremental Volume (AC-FT)	Cumulative Volume (AC-FT)
883.5	0.000	0.000	0.000	0.000
884	0.054	0.054	0.009	0.009
885	0.334	0.522	0.174	0.183
886	0.557	1.323	0.441	0.624
887	0.782	2.000	0.667	1.291
888	0.878	2.489	0.830	2.120
889	0.904	2.672	0.891	3.011
890	0.905	2.713	0.904	3.915
891	0.906	2.716	0.905	4.820

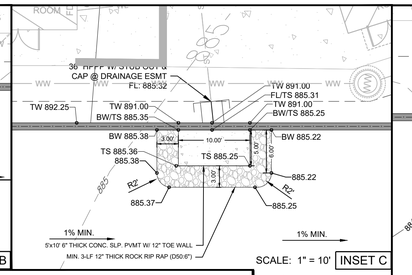
Outlet Structure - Stage Discharge Table

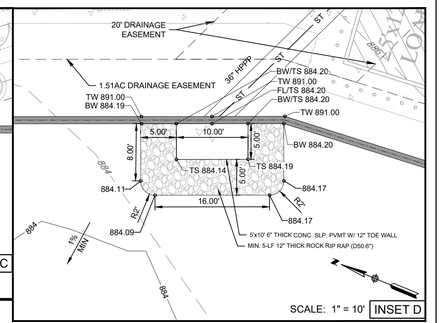
Stage / Elevation	2.5' Weir @ 886.75 Q (cfs)	20' Weir @ 888.90 Q (cfs)	TOTAL Q (cfs)
883.5	0.00	0.00	0.00
884	0.00	0.00	0.00
885	0.00	0.00	0.00
886	0.00	0.00	0.00
887	0.94	0.00	0.94
888	10.48	0.00	10.48
889	25.31	1.90	27.21
890	43.94	69.22	113.16
891	65.71	182.59	248.30

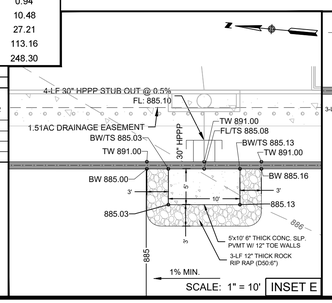
Overall Drainage Study Point Summary
Study Point B

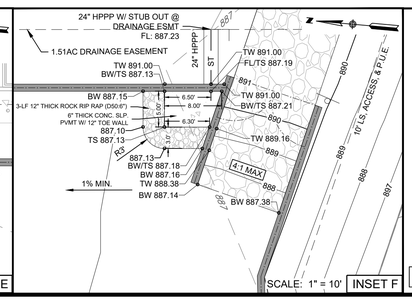
Storm Event	EXISTING CONDITIONS DM01	DEVELOPED CONDITIONS DM02
2-Year	44.80	22.10
10-Year	78.30	39.30
25-Year	102.20	65.30
100-Year	143.40	113.40

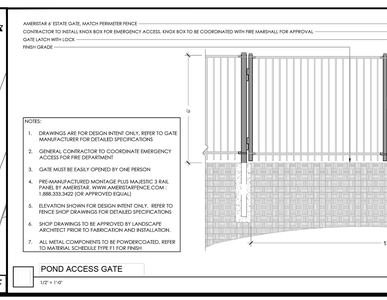












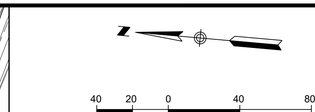
DRAWDOWN CALCULATION FOR BATCH DET WQ BASIN

WQ VOLUME =	50325 CF		
MINIMUM DRAWDOWN TIME = 36 HR = 129600 SECONDS	(48 HRS w/ 12-HR DELAY)		
FLOW = 50325 CF / 129600 SEC =	0.388 CFS		
HEAD= 885.83 - 883.75	= 2.58 (POND AVG HEAD TO ORIFICE CL)		
A = 0.388 CFS/(.60 *	(64.4 *2.58) ^.5)=	0.050203 SF	
R =(A/ 3.14))^.5 =	0.13 FT		
D (in.) = 2R * 12 =	3.03 inch orifice		
Q =0.0502 * .60 * (64.4 * 2.58)^.5 =	0.388 CFS		
DRAWDOWN TIME =	50325 CF / 0.388 CFS	= 129600 SEC	= 36 HRS
THEREFORE, POND WILL DRAWDOWN IN LESS THAN 72 HRS			

Water Quality Drawdown Calculations

Time (HRS)	Drawdown Percentage (%)	Remaining WQ Volume (CF)	WQ Stage Elevation (FT)
0:00	0	50,325	886.75
12:00	0	50,325	886.75
24:00	25	37,744	886.32
36:00	50	25,163	885.83
48:00	75	12,581	885.18
60:00	100	0	883.50

Note: Batch Det. Requires 12-hr Lag and to be drained w/in the next 48-hrs.



LEGEND

- BOUNDARY LINE/ R.O.W.
- 990 — PROPOSED CONTOURS
- 990 — EXISTING CONTOURS
- CONCRETE
- ROCK RIPRAP

NOTES

1. PROJECT LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
2. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS, AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE CITY OF LEANDER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED WATER QUALITY & DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
3. TOPSOIL MUST BE PLACED ON THE BASIN FLOOR AFTER EXCAVATED BOTTOM IS SCARIFIED TO A DEPTH OF 2 TO 3 INCHES . THE TOPSOIL MUST BE 6 TO 8 INCHES DEEP AND A SOIL MIXTURE OF 5-15% SAND OR GRANITE SAND, 60-70% TOPSOIL, AND SHALL BE A MINIMUM OF 25% COMPOST. SOIL BLEND MUST HAVE CLAY CONTENT LESS THAN 20 PERCENT AND BE FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
4. NON WOVEN FILTER FABRIC WITH A MINIMUM OPENING OF 0.15 MM (U.S. SIEVE SIZE 100) SHALL BE WRAPPED AROUND THE RISER. THE RISER SHALL BE DOUBLE WRAPPED WITH FILTER FABRIC UNTIL THE CONTRIBUTING DRAINAGE AREA IS VEGETATED AND STABILIZED.
5. DISCHARGE COEFFICIENTS FOR OUTLETS TO CONTROL DISCHARGE TIME ARE 0.6.
6. ALL EXPOSED CONCRETE SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
7. MAINTENANCE OF DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. NO FENCING IS PROPOSED, HOWEVER, IF IT IS REQUIRED AT A LATER DATE, IT IS REQUIRED TO BE DECORATIVE BLACK TUBULAR METAL OR WROUGHT IRON.
9. ALL POND OUTFALLS AND CONCRETE STRUCTURES (EX. SAFETY END TREATMENTS, HEADWALLS, CONCRETE RIP-RAP, AND OUTFALL STRUCTURES) SHALL BE APPROVED BY THE PLANNING DIRECTOR PRIOR TO INSTALLATION IF STONE IS NOT PROPOSED
10. ALL WALLS SHALL BE INTEGRALLY TINTED IN AN EARTHEN TONE AND TEXTURED TO APPEAR AS IF CONSTRUCTED OF STONE OR BRICK.
11. ALLOWABLE FENCE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, CHAIN LINK, SOLID WOOD, MASONRY, STONE OR WROUGHT IRON. METAL COMPONENTS OF THE FENCE SHALL BE CORROSION RESISTANT AND WOOD COMPONENTS OF THE FENCE SHALL BE WEATHER RESISTANT. ANY FENCE POSTS USED SHALL BE GALVANIZED STEEL WITH A CONCRETE FOOTING OF AT LEAST TWELVE (12) INCHES IN DIAMETER AND AT LEAST EIGHTEEN (18) INCHES IN DEPTH (SEE STANDARD SPECIFICATION NO. 701).
12. ALL SIDE SLOPES, EARTHEN EMBANKMENTS, AND POND BOTTOMS, SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ESTABLISHED EMBANKMENT CONSTRUCTION REQUIREMENTS (STANDARD SPECIFICATION 132S).

CITY OF LEANDER APPROVAL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 3

LEANDER, TEXAS

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 08/10/2025
DESIGNED BY: CRH
DRAWN BY: CRH
CHECKED BY: CRH
DRAWING NAME: 05P-WQ01.DWG

09/10/2025

CHARLES R. HAGER 127034 LICENSED PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

SHEET NO. WQ03

21 OF 70 SHEETS

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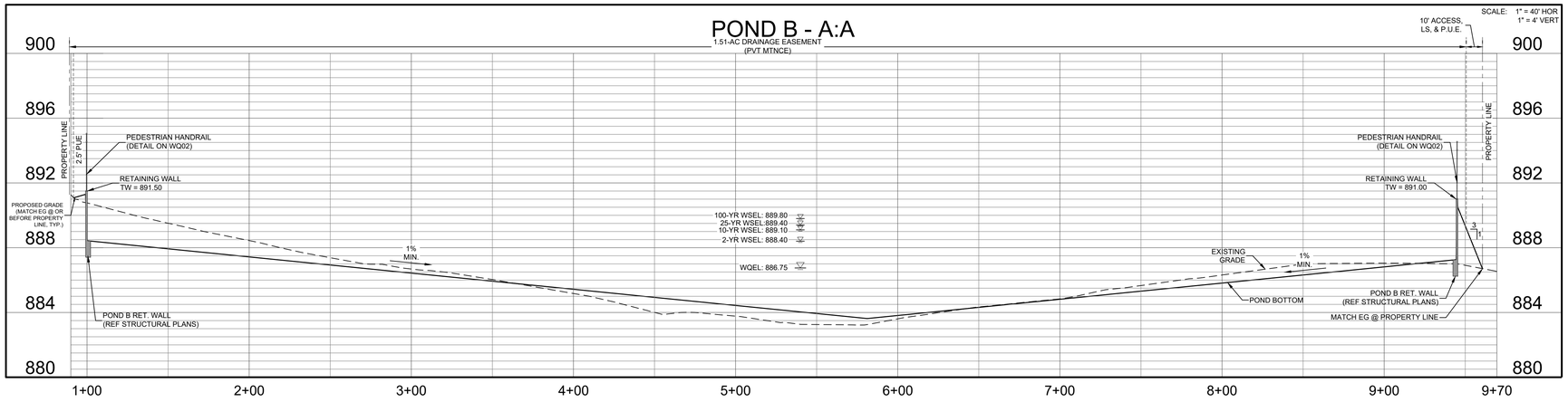
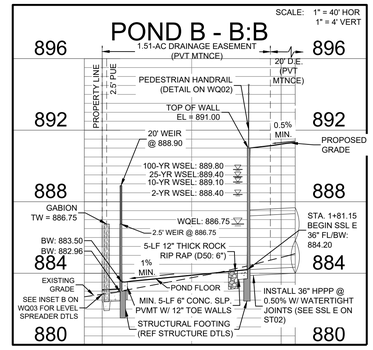




Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

CURRENT
Project Name: **Gabriels Horn Subdivision Pond B**
Date Prepared: **9/2/2025**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**15.99**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**10.33**	acres
Total post-development impervious cover fraction * =	**0.65**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**8993**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = Study Point B

Total drainage basin/outfall area =	**11.48**	acres	<--TOTAL AREA CONTRIBUTING TO WQ BASIN 'B'
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres	(SEE SHEET DM02, DRAINAGE AREA B)
Post-development impervious area within drainage basin/outfall area =	**6.70**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.58**		
$L_{M\ THIS\ BASIN}$ =	**5834**	lbs.	

Compository Drainage Provided by Basin 'B' Water Quality Pond Summary

Total drainage basin/outfall area =	**0.359**	acres	<--AREA ADJACENT TO BASIN 'B' NOT CAPTURED BY POND B
Predevelopment impervious area within drainage basin/outfall area =	**0.000**	acres	(SEE SHEET DM02, DRAINAGE AREA C)
Post-development impervious area within drainage basin/outfall area =	**0.137**	acres	
Post-development impervious fraction within drainage basin/outfall area =	**0.38**		
$L_{M\ (Compensatory)}$ =	**119**	lbs.	
$L_{M\ (TOTAL)}$ =	**5952**	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** (Batch Detention Basin)
Removal efficiency = **91** percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_C x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	**11.479**	acres
A_I =	**6.702**	acres
A_P =	**4.78**	acres
L_R =	**6828**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **5952** lbs.

F = **0.87**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

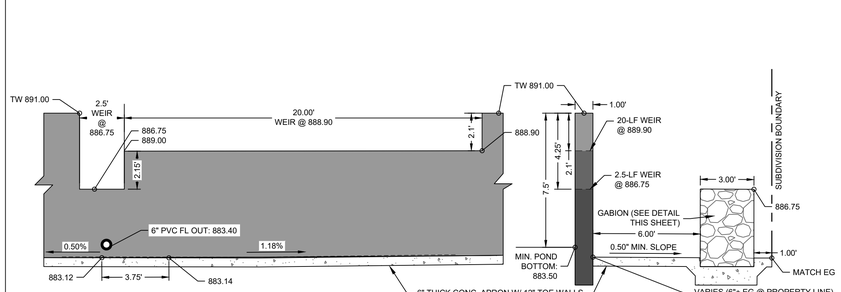
Rainfall Depth =	**1.44**	inches
Post Development Runoff Coefficient =	**0.41**	
On-site Water Quality Volume =	**24537**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**4907**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**29445**	cubic feet

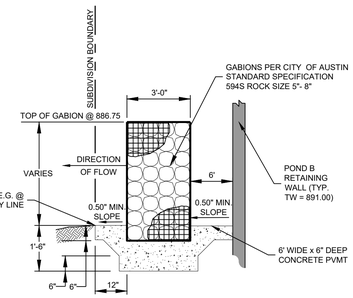
8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin =	**29445**	cubic feet
PROVIDED WATER QUALITY VOLUME=	**50325**	cubic feet

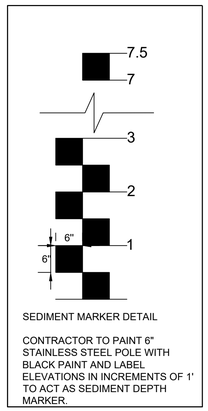


POND B OUTFALL STRUCTURE DETAIL
(FRONT X-SECTION)
SCALE: 1" = 4'

POND B OUTFALL STRUCTURE DETAIL
(SIDE X-SECTION)
SCALE: 1" = 4'



GABION BASKET DETAIL
NTS



SEDIMENT MARKER DETAIL

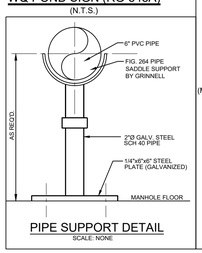
CONTRACTOR TO PAINT 6" STAINLESS STEEL POLE WITH BLACK PAINT AND LABEL ELEVATIONS IN INCREMENTS OF 1' TO ACT AS SEDIMENT DEPTH MARKER.

WATER QUALITY POND MAINTENANCE

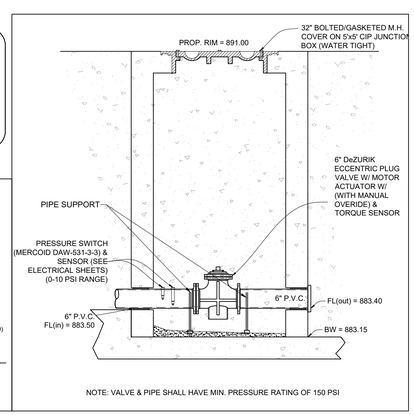
FACILITY OPERATOR:
BM 22, LLC
(703) 220-7265

EDWARDS AQUIFER ID:
RN112280268
TCEQ REGION: 11

WQ POND SIGN (RG-348A)
(N.T.S.)

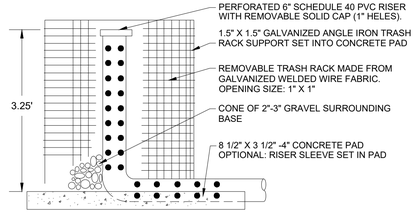


PIPE SUPPORT DETAIL
SCALE: NONE

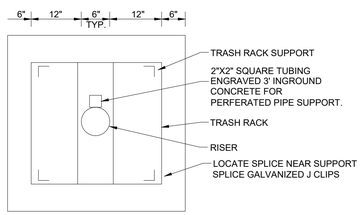


NOTE: VALVE & PIPE SHALL HAVE MIN. PRESSURE RATING OF 150 PSI

4' DIA CONTROL MANHOLE DETAIL
N.T.S.



SIDE VIEW OF RISER



TOP VIEW OF RISER (SQUARE DESIGN)

INTAKE RISER DETAIL
NOT TO SCALE

CITY OF LEANDER APPROVAL

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811 Know what's below. Call before you dig.

GABRIELS HORN DEVELOPMENT
TCEQ CONTRIBUTING ZONE PLAN
WATER QUALITY & DETENTION
PLAN & PROFILE SHEET 4

LEANDER, TEXAS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 09/10/2025
DESIGNED BY: CRH
DRAWN BY:
CHECKED BY: CRH
DRAWING NAME: G:\SHWQ01.DWG

09/10/2025

STATE OF TEXAS
CHARLES R. HAGER V
127034
LICENSED
PROFESSIONAL ENGINEER

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A4971

WQ04

SHEET NO. 22 OF 70 SHEETS

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APPENDIX A

SAMPLE INSPECTION AND MAINTENANCE REPORT FORM

TPDES Construction Inspection and Maintenance Report Form

Project Name: GABRIELS HORN DEVELOPMENT

Permit Number:

Facility Operators: BM 22 LLC
2508 Dapple Gray Lane
Leander, TX 78641

Inspector's Name:
(attach qualifications summary for each inspector)

Date of Last Rainfall:
Amount of Last Rainfall:
Date of Inspection:

Inspection Notes

Condition Code*	Area Inspected	Changes Required (if any)

*Condition Codes
01 - The facility is in compliance with the storm water pollution prevention plan and permit
02 - To be fixed or replaced within 24 hours.
03 - To be fixed or replaced within 48 hours.
04 - To be fixed or replaced within 7 days.

Please note major construction activities taking place. Include dates when major grading activities and/or disturbances occur, dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed. (Attach additional pages as required and/or attach daily construction reports.)

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

Signature: _____ Date: _____.

Signature: _____ Date: _____.

APPENDIX B

NAMES AND QUALIFICATIONS OF PERSONNEL MAKING INSPECTIONS

APPENDIX C

CERTIFIED NOTICES OF INTENT AND ACKNOWLEDGEMENT CERTIFICATES

Texas Commission on Environmental Quality

Construction Notice of Intent

Site Information (Regulated Entity)

What is the name of the site to be authorized?	Gabriels Horn Development
Does the site have a physical address?	No
Because there is no physical address, describe how to locate this site:	North of the intersection of Ronald W Reagan Boulevard and
City	Leander
State	TX
ZIP	78641
County	WILLIAMSON
Latitude (N) (##.######)	30.617073
Longitude (W) (-###.######)	-97.822146
Primary SIC Code	
Secondary SIC Code	
Primary NAICS Code	
Secondary NAICS Code	

Regulated Entity Site Information

What is the Regulated Entity's Number (RN)?	
What is the name of the Regulated Entity (RE)?	Gabriels Horn Development
Does the RE site have a physical address?	No
Because there is no physical address, describe how to locate this site:	North of the intersection of Ronald W Reagan Boulevard and
City	Leander
State	TX
ZIP	78641
County	WILLIAMSON
Latitude (N) (##.######)	30.617073
Longitude (W) (-###.######)	-97.822146
Facility NAICS Code	
What is the primary business of this entity?	Commercial

Customer (Applicant) Information

How is this applicant associated with this site?	Operator
What is the applicant's Customer Number (CN)?	
Type of Customer	Corporation

Full legal name of the applicant:

Legal Name	BM22 LLC

Texas SOS Filing Number	805337771
Federal Tax ID	
State Franchise Tax ID	32092836777
State Sales Tax ID	
Local Tax ID	
DUNS Number	
Number of Employees	
Independently Owned and Operated?	
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes

Responsible Authority Contact

Organization Name	BM22 LLC
Prefix	
First	Swamy
Middle	
Last	Devuni
Suffix	
Credentials	
Title	Owner

Responsible Authority Mailing Address

Enter new address or copy one from list:	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2508 DAPPLE GRAY LN
Routing (such as Mail Code, Dept., or Attn:)	
City	LEANDER
State	TX
ZIP	78641
Phone (###-###-####)	7032207265
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	samirsmaredia@gmail.com

Application Contact

Person TCEQ should contact for questions about this application:

Same as another contact?	
Organization Name	LJA Engineering
Prefix	
First	Charles

Middle	
Last	Hager
Suffix	V
Credentials	PE
Title	Sr. Director
Enter new address or copy one from list:	

Mailing Address

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	171 CHURCH ST STE 100
Routing (such as Mail Code, Dept., or Attn:)	
City	CHARLESTON
State	SC
ZIP	29401
Phone (###-###-####)	8434055140
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	chager@lja.com

CNOI General Characteristics

1) Is the project or site located on Indian Country Lands?	No
2) Is the project or site associated to a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72?	No
3) Is your construction activity associated with an oil and gas exploration, production, processing, or treatment, or transmission facility?	No
4) Is the project or site associated to a quarrying facility that is located within either the John Graves Scenic Riverway or Coke Stevenson Scenic Riverway, as defined in 30 TAC 311.71?	No
5) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site?	5331
6) If applicable, what is the Secondary SIC Code(s)?	
7) What is the total number of acres that the construction project or site will disturb under the control of the primary operator?	16.37
8) What is the construction project or site type?	Commercial
9) Is the project part of a larger common plan of development or sale?	No
10) What is the estimated start date of the project?	01/01/2026
11) What is the estimated end date of the project?	06/01/2026
12) Will concrete truck washout be performed at the site?	No

13) What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?	South Fork San Gabriel River
14) What is the segment number(s) of the classified water body(s) that the discharge will eventually reach?	1250
15) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?	Yes
15.1) What is the name of the MS4 Operator?	Leander
16) Is the discharge or potential discharge within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?	Yes
16.1) I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented.	Yes
17) I certify that a stormwater pollution prevention plan (SWP3) has been developed, will be implemented prior to construction, and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the general permit TXR150000. Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator.	Yes
18) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000).	Yes
19) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.	Yes

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Texas Pollutant Discharge Elimination System
Stormwater Construction General Permit

The Notice of Intent (NOI) for the facility listed below was received on September 8, 2025. The intent to discharge stormwater associated with construction activity under the terms and conditions imposed by the Texas Pollutant Discharge Elimination System (TPDES) stormwater Construction General Permit (CGP) TXR150000 is acknowledged. Your facility's unique TPDES CGP stormwater authorization number is:

TXR1518VU

Coverage Effective: September 08, 2025

The TCEQ's stormwater CGP requires certain stormwater pollution prevention and control measures, possible monitoring and reporting, and periodic inspections. Among the conditions and requirements of this permit, you must have prepared and implemented a stormwater pollution prevention plan (SWP3) that is tailored to your construction site. As a facility authorized to discharge under the stormwater CGP, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

Project/Site Information:
RN112280268
Gabriels Horn Development
North of The Intersection of Ronald W Reagan Boulevard And
Leander, TX 78641
Williamson County

Operator:
CN606426450
Bm22 LLC
2508 Dapple Gray Ln
Leander, TX 78641

This CGP and all authorizations expire on March 5, 2028, unless otherwise amended. If you have any questions related to processing of your application, you may contact the Stormwater Processing Center by **email at** SWPERMIT@tceq.texas.gov **or by telephone at (512) 239-3700**. For technical issues, you may contact the stormwater technical staff by **email at** SWGP@tceq.texas.gov **or by telephone at (512) 239-4671**. Also, you may obtain information on the TCEQ web site at https://www.tceq.texas.gov/goto/wq-dpa. A copy of this document should be kept with your SWP3.

Issued Date: September 08, 2025

FOR THE COMMISSION

APPENDIX D

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY SMALL-BUSINESS HANDBOOK FOR SPILL RESPONSE (RG-285)

TNRCC REGULATORY GUIDANCE

Pollution Cleanup Division
RG-285
June 1997

SUBJECT: # Small-Business Handbook for Spill Response

Purpose

The purpose of this handbook is to help small businesses to comply with the Texas Natural Resource Conservation Commission's (TNRCC's) Spill Rule. From this document, you will learn when and how to report a spill and how to enlist the aid of the TNRCC and other authorities, as needed, in responding to a spill. This handbook is for guidance only; it does not replace or supersede the official rules and regulations.

The purpose of the Spill Rule, which is found in Title 30 Texas Administrative Code (30 TAC) Chapter 327, is to deal responsibly with threats to human health or the environment posed by incidents that may cause the contamination of groundwater or surface water. The rule sets guidelines for initial notification, response actions, and follow-up reports that the responsible person must follow when a discharge or spill occurs.

The Spill Rule—in a Nutshell

The Spill Rule requires the party responsible for causing a spill that by its nature and size presents the threat of contaminating groundwater or surface water to:

- control and contain the spill (or see that this is done);
- clean up the results of the spill (or see that this is done);
- notify the appropriate authorities, which may range from the local fire department to the TNRCC, depending on the threat posed by the spill;
- make follow-up reports to the TNRCC about the continuing progress or completion of the cleanup.

To explain how to comply with the Spill Rule, this document will address the following questions:

- What is a spill (as far as the Spill Rule is concerned)?
- What should I do when the spill is serious?
- What about less serious spills?
- What kinds of spills need to be reported?
- What should my report say?
- Who can tell me what is in my spill?
- How can the TNRCC help me?
- What happens when I report a spill?
- What kinds of spills are not covered by this rule?
- Where do I look for more information?

What Is a Spill?

As defined in the rule, a spill is any incident in which oil, hazardous substances, industrial waste, or "other substances" contaminate or may contaminate surface water or groundwater in the state of Texas. Because substances spilled on the ground may find their way into groundwater, lakes, rivers, or streams, the definition includes spills on the ground as well as spills that go directly into water.

The definition of a "discharge or spill" is broad; it covers just about any accidental action or oversight that leads to the possible contamination of water. The following examples represent only a few of the many different kinds of incidents that this definition covers:

- A worker at a pest control service discovers that liquid pesticide has leaked from a storage tank into the ground.
- A landscaper rinses tanks that held herbicide, and then the rinse water escapes into a storm sewer.
- A truck loaded with avocados overturns, spilling its cargo and its fuel on the highway.
- A worker at a boat repair shop accidentally pours a solvent-based varnish remover on pavement. Most of the solvent evaporates quickly.
- A trenching crew hits a buried pipeline, causing oil to leak into the surrounding soil.

For simplicity, the term "spill" will be used in this document to refer to any incident covered by the definition

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given in 30 TAC Section (§) 327.2 for *discharge or spill*. Certain kinds of incidents that might threaten water supplies are covered by other rules or are under the authority of other agencies. Incidents that are not covered by the Spill Rule are described at the end of this document.

What Should I Do When the Spill Is Serious?

Whenever a spill or discharge involves an imminent threat to human health, notify local emergency authorities *immediately* and cooperate with them in responding to the spill. "Local emergency authorities" usually means the local fire department and law enforcement agency, but could also mean the local fire marshal, health department, or emergency planning committee.

The rule also calls for the responsible person to take certain reasonable steps to respond to the spill:

- Get to the scene, or make sure that hired response personnel get to the scene.
- Begin efforts to stop the discharge or spill.
- Minimize the impact of the spill to public health, surface water, and the ground or subsurface soil.
- Neutralize the effects of the incident.
- Remove the discharged or spilled substances.
- Manage wastes associated with the spill and cleanup.

What about Less Serious Spills?

Spills that do not present an imminent threat to human health still must be cleaned up. Even if the spill is small enough that a reporting requirement is not triggered, the person responsible for the spill must make sure that the spill is cleaned up.

What Kinds of Spills Need to Be Reported?

Whether a spill needs to be reported to the TNRCC depends on the material spilled, how much of it is spilled, and where it is spilled. General guidelines for determining whether a spill must be reported, based on this rule and federal standards, appear in Table 1. Spills involving less than 1 pound of material, except for oil spills, do not need to be reported to the TNRCC. They must be reported to local authorities if they pose an imminent threat to public health.

If the amount of material spilled or discharged within any 24-hour period is equal to or greater than the amount indicated in Table 1, the rule calls for the party responsible for the spill to notify the TNRCC within 24 hours. There are three ways to satisfy this reporting requirement by phone:

- Call **1-800-832-8224** (the Environmental Response Hot Line). This line is answered 24 hours a day.
- Call the TNRCC Spill Reporting Hot Line, which is also answered 24 hours a day, at 512/463-7727.
- During regular business hours, call the TNRCC regional office that serves the county in which the spill occurred.

The Spill Rule also allows the responsible person to use other reasonable methods to provide this initial notification.

Spills of a Single Hazardous Substance
Whenever an individual hazardous substance is spilled, determining whether a reportable quantity has been spilled only involves developing a reliable estimate of how much material was spilled and comparing that value with the reportable quantity (RQ) found in the column headed "Final RQ" in Table 302.4 of Title 40 Code of Federal Regulations (40 CFR) Part 302.

Spills of Mixtures
Whenever a mixture that contains a hazardous substance is spilled, a federal rule, often called the Mixture Rule, is used to determine whether a reportable quantity has been spilled. The wording of the Mixture Rule makes it particularly important for small businesses to know as much as possible about the composition of the materials they use or handle.

According to the Mixture Rule, if a mixture is known to contain a hazardous substance, but the amount of that substance in the mixture is not known, then all of the material spilled is assumed to be the hazardous substance for the purpose of determining whether a reportable spill has occurred. On the other hand, if the composition of the mixture is known, that information is used to determine whether the amount of mixture spilled contains a reportable quantity of the hazardous substance.

To see how the Mixture Rule works, let's look at two possible outcomes involving the spill of 1 quart of an insecticide containing aldrin. The RQ for aldrin is 1 pound.

First possible outcome. Assume that the person responsible for the spill knows only that the insecticide contains aldrin, not *how much* aldrin is in the insecticide. According to the Mixture Rule, all of the material spilled must be assumed to be aldrin under these circumstances. A quart of a solution weighs about 2 pounds, which is greater than the RQ for aldrin. This spill must be reported.

Second possible outcome. Now assume that the person responsible for the spill knows that the insecticide contains not more than 1 percent aldrin by weight. According to the

Mixture Rule, this person should then calculate how much aldrin could have been in the quart of solution spilled:

2 lb solution × 1 lb aldrin/100 lb = 0.02 lb aldrin

If aldrin is the only hazardous substance in the mixture, then this spill does not have to be reported according to the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA). Be sure to do this sort of calculation for all the substances in the mixture, even if the product label describes them as "inert" or "filler."

The difference between the outcomes in the above example is not *what* was spilled, but *what was known* about the material that was spilled. Because one business had more information available about the materials it uses, its employee was able to determine that the spill was insignificant without contacting the TNRCC.

Table 1. Reportable Quantities (RQs) According to the Spill Rule

	SITE OF SPILL	
TYPE OF SPILL	**On Land**	**In Water**
Hazardous substance		
If CERCLA RQ = 1–100 lb	CERCLA RQ	CERCLA RQ
If CERCLA RQ > 100 lb	CERCLA RQ	100 lb
Crude oil	210 gal	Enough to form a sheen
Used oil or petroleum product		
At a PST exempt facility*	210 gal	Enough to form a sheen
All others	25 gal	Enough to form a sheen
Oil other than crude oil, used oil, or petroleum product	210 gal	Enough to form a sheen
Other substances	No RQ	100 lb
Industrial solid waste	No RQ	100 lb

NOTE: This table applies only to the reporting of spills and discharges according to the Spill Rule, 30 TAC §§327.1–327.5. To find values of CERCLA RQs for hazardous substances, please refer to 40 CFR Table 302.4.

*The term "PST exempt facility" refers to facilities that are exempt from the Aboveground Storage Tank Program. Petrochemical plants, petroleum refineries, and electricity generation, transmission, and distribution facilities are some examples of PST exempt facilities.

What Should My Report Say?

There are a number of different levels of reporting, so let's go through them one at a time.

Initial Notification
Within 24 hours, report the following information as best it is known:

- Your name, address, and telephone number (as the person making the report)
- The date, time, and location of the spill
- A specific description of the substance or substances spilled
- An estimate of how much was spilled
- The duration of the incident
- The name of the body of water affected or threatened by the spill
- The source of the spill
- A description of the extent of actual or potential water pollution or harmful impacts to the environment
- An identification of any environmentally sensitive areas or natural resources at risk
- The name, address, and telephone number of the responsible person (if not you)
- The name, address, and telephone number of the contact person at the site of the spill (if not you)
- A description of any action that has been taken, is being taken, or will be taken to contain and respond to the spill
- Any known or anticipated health risks
- The identity of any governmental authorities or agencies that are already responding to the spill
- Any other information that may be significant to the response action

The Spill Rule requires only that you provide all of the

above information that you know—by phone, in person, or in writing. The rule does not require that a written report be on a standard form. You may decide to develop your own form, but the rule also allows you to use the reporting form of any other agency that requires you to report the spill.

If you use the reporting form of another agency and it does not provide all of the information described above, you must add the rest of the required information on a separate sheet.

Update Notification
If anything happens that would trigger a change in the response to the spill—for better or for worse—notify the agency as soon as possible.

Correction of Records
If you report a spill and later decide that the spill did not have to be reported, you may send the regional office a letter to show your reasoning. Be sure to include all the information staff will need to understand your new decision.

If, after reviewing your letter, the regional office staff agrees that the spill was not reportable, that determination will be added to the agency records. If staff disagrees with your decision, the agency will notify you (that is, the responsible person) within 30 days.

Other Required Notice
In addition to notifying the TNRCC and local governmental authorities, make a reasonable attempt to notify the owner and occupants of any property adversely affected by the spill. Provide this notice as soon as possible, but no later than two weeks after discovering the spill.

Notifying the TNRCC satisfies the federal requirement to notify the State Emergency Response Commission, but does not satisfy the notification requirements of any permit or any other local, state, or federal law.

Reporting the spill to the Environmental Response Hot Line (1-800-832-8224) satisfies the initial notification requirements of the Spill Rule and the Texas Water Code. Depending on the material spilled, there may be other reporting requirements.

Who Can Tell Me What Is in My Spill?

It is the responsibility of a business to ensure that its employees know the nature and contents of the materials they handle or use. It is not feasible for any document to cover the full range of possible combinations of substances. The manufacturer or supplier of a product may be a good source of information about the contents and specific formulation of a proprietary mixture.

Often it is not necessary to know the precise formula of a mixture to know how to classify it under the Spill Rule. The TNRCC regional office is one of a number of possible resources that could help you classify at least some materials into broad reporting categories according to the Spill Rule and CERCLA.

How Can the TNRCC Help Me?

Through your local regional office, the Small Business Assistance Program (1-800-447-2827), and the Emergency Response Section (512/239-2507), the TNRCC can help you prepare for spills before they happen as well as respond to them appropriately when they do.

If minor but reportable spills are an unavoidable part of your business, you might call your regional office to investigate the possibility of making one report on a regular schedule (e.g., once a month) to cover all minor spills that occur in that time frame. Depending on the individual situation, the regional manager may approve such an alternative notification plan for a fixed installation. *Such a plan would require the written approval of the regional manager.*

Your regional manager may also permit you to notify the agency by fax of spills that occur during regular business hours. If you do get permission to notify by fax, you may want to prepare a form that employees can fill out quickly when a spill occurs. You could print information that will not change (e.g., location of the facility, the name of the surface water affected, if any, etc.) as part of the form itself.

What Happens When I Report a Spill?

A number of things:

- Of greatest importance, you ensure that all resources that are available and needed to minimize the impact of the spill are put to use.
- Based on the information you provide, the regional staff of the TNRCC can help you to determine whether the spill is serious and, regardless of whether it is serious, the best ways to control the spill and minimize the damage it may cause.
- If necessary, the TNRCC can help coordinate the response to a spill that poses an imminent threat to public health or sources of water.
- You reduce the range of penalties that could be assessed against you or your business as a result of the spill.

Reporting a spill is not the same as admitting that pollution

has occurred (see “Correction of Records” above).

Does This Rule Cover *All* Spills?

No, it doesn’t. Certain spills would fall under the jurisdiction of other agencies in the state of Texas. The following kinds of spills, discharges, or emissions are covered by other rules:

- Oil spills in or near coastal waters. The Railroad Commission of Texas (RRC) regulates such spills when they are relatively small (240 barrels or less). The Texas General Land Office (GLO) has jurisdiction for larger incidents affecting coastal waters. The term *coastal waters* basically includes the Gulf of Mexico and all of its bays, inlets, and estuaries, as well as portions of their navigable tributaries. A detailed definition of *coastal waters* appears in the GLO Rules, 31 TAC §19.2. When reporting a spill, don’t worry about this difference in jurisdiction. Use the Environmental Response Hot Line (1-800-832-8224) to report the spill, and your report will be forwarded to the appropriate agency.
- Spills or waste discharges regulated by the RRC. This essentially means incidents related to the exploration, production, and development of oil, gas, geothermal resources, and uranium. Specific details can be found in the Texas Water Code §26.131.
- Emissions only to air. If you spill a liquid and it then evaporates, the spill is not an “emission only to air.” A spill that evaporates is covered by the Spill Rule and may be covered by other regulations.
- Lawful discharges or waste disposal. This category includes the lawful placement of waste or accidental discharge of material into a solid waste management unit registered or permitted under 30 TAC Chapter 335 Subchapter A; any discharge that is covered by a specific permit, order, or rule issued under U.S. or Texas law, if that permit, order, or rule provides another specific reporting requirement; and discharges or spills that are continuous and stable in nature, and are reported to the U.S. Environmental Protection Agency according to 40 CFR §302.8.
- The lawful application of fertilizers, pesticides, or other materials to land or water.
- Certain activities associated with aboveground and underground storage tanks, which are covered by Texas Water Code Chapter 26 Subchapter I.
- Discharges or spills that occur during the normal course of rail transportation.

Related Literature

Consider reviewing the following documents or having them available as reference materials.

State of Texas Oil and Hazardous Substances Spill Contingency Plan. This document, currently being developed by the cooperation of all state agencies that participate in spill response, is a compilation of all state rules that cover spills. When it is available, you may obtain copies from the TNRCC Publications Unit (512/239-0028).

State of Texas Coastal Oil Spill Prevention and Response. 31 TAC Chapter 19. This document comprises the GLO’s oil spill rules.

The following documents are available from the U.S. Government Printing Office:

Title 40 Code of Federal Regulations Part 302. This is a portion of the federal law dealing with the handling of hazardous substances.

National Oil and Hazardous Substances Pollution Contingency Plan. 40 CFR Part 300. This document covers all federal rules on spills.

Emergency Planning and Notification. 40 CFR Part 355. The regulation establishes the list of extremely hazardous substances, threshold planning quantities, and facility notification responsibilities necessary for developing and implementing state and local emergency response plans.

Hazardous Chemical Reporting and Community Right-to-Know. These regulations establish reporting requirements that provide the public with important information about the hazardous chemicals in their communities.

Toxic Substances Control Act. 40 CFR Parts 700–766. Several specific constituents, such as PCBs and dioxins, require additional regulation because of their direct impact on human health and the environment. The TSCA specifies procedures for handling these materials. Additional reporting may also be required.

APPENDIX E

TPDES GENERAL PERMIT NO. TXR150000 FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

General Permit to Discharge Under the Texas Pollutant Discharge Elimination System

Stormwater Discharges Associated with Construction Activities

TXR150000

Effective March 5, 2018

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087

GENERAL PERMIT TO DISCHARGE UNDER THE

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces
TPDES General Permit No. TXR150000, issued March 5, 2008

Construction sites that discharge stormwater associated with construction activity

located in the state of Texas

may discharge to surface water in the state

only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, five years from the permit effective date.

EFFECTIVE DATE: March 5, 2013

ISSUED DATE: FEB 19 2013

Bryan W. Shaw

For the Commission

TPDES GENERAL PERMIT NUMBER TXR150000 RELATING TO STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

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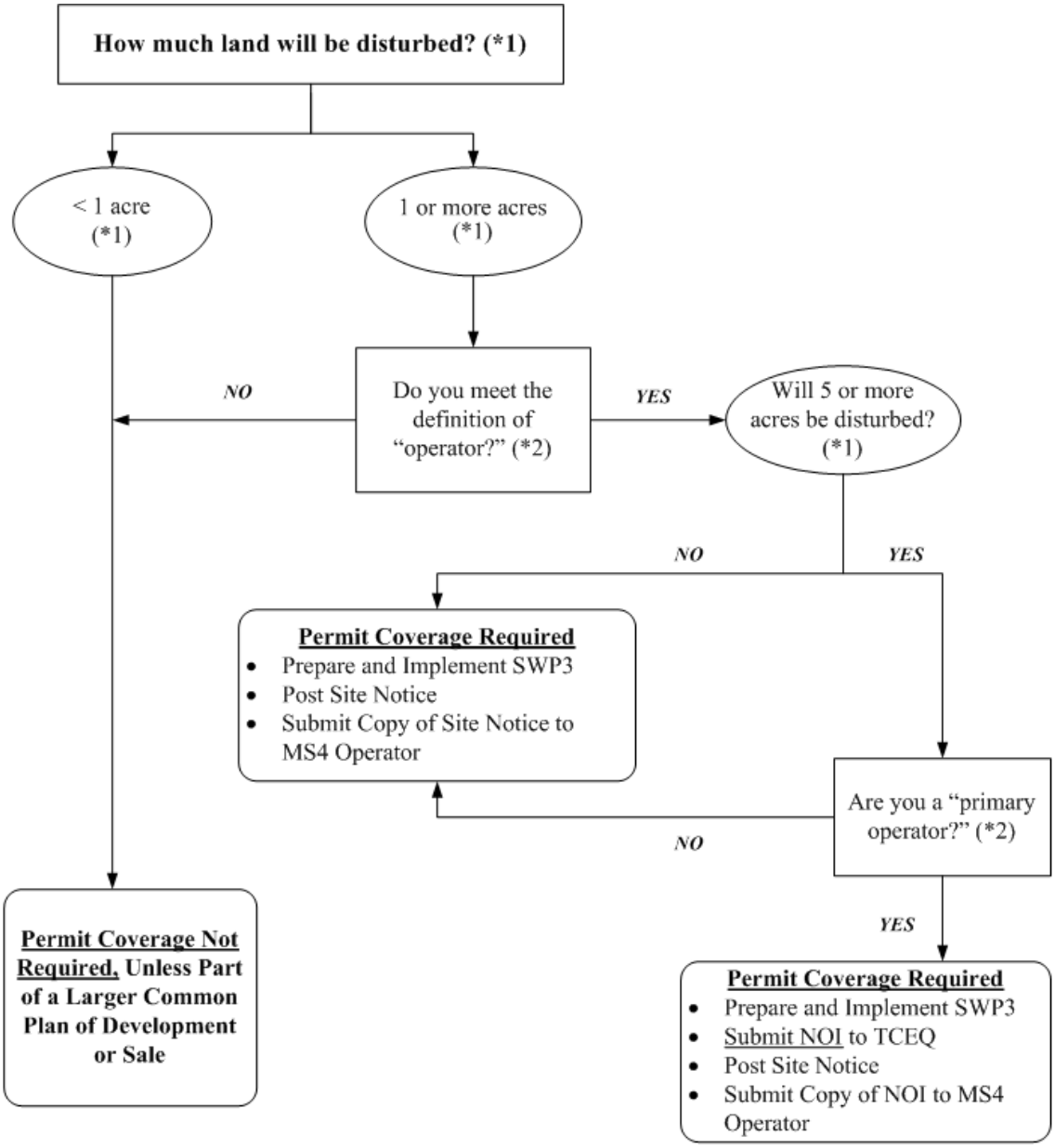
Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required



(*1) To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").

(*2) Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.

Section B. Definitions

Arid Areas - Areas with an average annual rainfall of 0 to 10 inches.

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction - The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., stockpiling of fill material, demolition).

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located ¼ mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

Construction Activity - Includes soil disturbance activities, including clearing, grading, and excavating; and does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Dewatering – The act of draining rainwater or groundwater from building foundations, vaults, and trenches.

Discharge – For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Drought-Stricken Area – For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html.

Edwards Aquifer - As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak

Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

Edwards Aquifer Recharge Zone - Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html, can be used to determine where the recharge zone is located.

Edwards Aquifer Contributing Zone - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html.

Effluent Limitations Guideline (ELG) – Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

Facility or Activity – For the purpose of this permit, a construction site or construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtances used at a construction site or industrial site described by this general permit.

Final Stabilization - A construction site status where any of the following conditions are met:

A. All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

B. For individual lots in a residential construction site by either:

   (1) the homebuilder completing final stabilization as specified in condition (a) above; or

   (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization.

Fullfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).

C. For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

D. In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:

(1) Temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and

(2) The temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Impaired Water - A surface water body that is identified on the latest approved CWA §303(d) List as not meeting applicable state water quality standards. Impaired waters include waters with approved or established total maximum daily loads (TMDLs), and those where a TMDL has been proposed by TCEQ but has not yet been approved or established.

Indian Country Land – (from 40 CFR §122.2) (1) all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

Indian Tribe - (from 40 CFR §122.2) any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation.

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Linear Project – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

Minimize - To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a discharger authorized under a general permit requesting termination of coverage.

Operator - The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – the person or persons associated with a large or small construction activity that meets either of the following two criteria:

(a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

(b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Storm Water Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person or entity, often the property owner, whose operational control is limited to:

(a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or

(b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site where they have control over the plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

Outfall - For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee - An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges.

Point Source – (from 40 CFR §122.2) Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

Pollution - (from Texas Water Code (TWC) §26.001(14)) The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Rainfall Erosivity Factor (R factor) - the total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

Receiving Water - A "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

Semiarid Areas - areas with an average annual rainfall of 10 to 20 inches

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Steep Slopes – Where a state, Tribe, local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

Stormwater (or Stormwater Runoff) - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity - Stormwater runoff from a construction activity where soil disturbing activities (including clearing, grading, excavating) result in the disturbance of one (1) or more acres of total land area, or are part of a larger common plan of development or sale that will result in disturbance of one (1) or more acres of total land area.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater

runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHWM) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization - A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Total Maximum Daily Load (TMDL) - The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Turbidity – A condition of water quality characterized by the presence of suspended solids and/or organic material.

Waters of the United States - (from 40 CFR §122.2) Waters of the United States or waters of the U.S. means:

(a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) all interstate waters, including interstate wetlands;

(c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

  (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;

  (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

  (3) which are used or could be used for industrial purposes by industries in interstate commerce;

(d) all impoundments of waters otherwise defined as waters of the United States under this definition;

(e) tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) the territorial sea; and

(g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the U.S. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the U.S. (such as

disposal area in wetlands) nor resulted from the impoundment of waters of the U.S. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

Discharges of stormwater runoff from small and large construction activities may be authorized under this general permit.

2. Discharges of Stormwater Associated with Construction Support Activities

Examples of construction support activities include, but are not limited to, concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas. Construction support activities authorized under this general permit are not commercial operations, and do not serve multiple unrelated construction projects. Discharges of stormwater runoff from construction support activities may be authorized under this general permit, provided that the following conditions are met:

(a) the activities are located within one (1) mile from the boundary of the permitted construction site and directly support the construction activity;

(b) an SWP3 is developed for the permitted construction site according to the provisions of this general permit, and includes appropriate controls and measures to reduce erosion and discharge of pollutants in stormwater runoff from the construction support activities; and

(c) the construction support activities either do not operate beyond the completion date of the construction activity or, at the time that they do, are authorized under separate Texas Pollutant Discharge Elimination System (TPDES) authorization. Separate TPDES authorization may include the TPDES Multi Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), separate authorization under this general permit if applicable, coverage under an alternative general permit if available, or authorization under an individual water quality permit.

3. Non-Stormwater Discharges

The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

(a) discharges from fire fighting activities (fire fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);

(b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);

(c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials

have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

(d) uncontaminated water used to control dust;

(e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;

(f) uncontaminated air conditioning condensate;

(g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and

(h) lawn watering and similar irrigation drainage.

4. Other Permitted Discharges

Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

Section B. Concrete Truck Wash Out

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part V of this general permit.

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the notice of termination (NOT) or removal of the appropriate site notice, as applicable, for the regulated construction activity.

2. Prohibition of Non-Stormwater Discharges

Except as otherwise provided in Part II.A. of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

3. Compliance With Water Quality Standards

Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2. and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.2. of this general permit.

4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standards and are listed on the EPA approved CWA §303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (i.e., the initial disturbance of soils associated with clearing, grading, or excavating activities, as well as other construction-related activities such as stockpiling of fill material and demolition) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

(a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.

(b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule is in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities. For example, this permit does not limit the authority of a home-rule municipality provided by Texas Local Government Code §401.002.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES

regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Oil and Gas Production

Stormwater runoff from construction activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the EPA.

10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

12. Other

Nothing in Part II of the general permit is intended to negate any person's ability to assert the force majeure (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC §70.7.

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under TPDES general permit TXR150000 (effective on March 5, 2008), must submit an NOI to renew authorization or a NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

2. Small Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either

under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that would not meet the conditions to qualify for termination of this permit as described in Part II.E. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities With Low Potential for Erosion:

If all of the following conditions are met, then a small construction activity is determined to occur during periods of low potential for erosion, and a site operator may be automatically authorized under this general permit without being required to develop an SWP3 or submit an NOI:

(a) the construction activity occurs in a county listed in Appendix A;

(b) the construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;

(c) all temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site;

(d) the permittee signs a completed TCEQ construction site notice, including the certification statement;

(e) a signed copy of the construction site notice is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until completion of the construction activity;

(f) a copy of the signed and certified construction site notice is provided to the operator of any MS4 receiving the discharge at least two days prior to commencement of construction activities;

(g) any supporting concrete batch plant or asphalt batch plant is separately authorized for discharges of stormwater runoff or other non-stormwater discharges under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and

(h) any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

Part II.G. of this general permit describes how an operator may apply for and obtain a waiver from permitting, for certain small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available.

2. Automatic Authorization For All Other Small Construction Activities:

Operators of small construction activities not described in Part II.E.1. above may be automatically authorized under this general permit, and operators of these sites shall not be required to submit an NOI, provided that they meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) sign and certify a completed TCEQ small construction site notice, post the notice at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, prior to commencing construction, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities); and

(c) provide a copy of the signed and certified construction site notice to the operator of any municipal separate storm sewer system receiving the discharge prior to commencement of construction activities.

Operators of small construction activities as defined in Part I.B of this general permit shall not submit an NOI for coverage unless otherwise required by the executive director.

As described in Part I (Definitions) of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land, and must meet the requirements of Part II.E.3. below.

3. Authorization for Large Construction Activities:

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) primary operators must submit an NOI, using a form provided by the executive director, at least seven (7) days prior to commencing construction activities, or if utilizing electronic submittal, prior to commencing construction activities. If an additional primary operator is added after the initial NOI is submitted, the new primary operator must submit an NOI at least seven (7) days before assuming operational control, or if utilizing electronic NOI submittal, prior to assuming operational control. If the primary operator changes after the initial NOI is submitted, the new primary operator must submit a paper NOI or an electronic NOI at least ten (10) days before assuming operational control;

(c) all operators of large construction activities must post a site notice in accordance with Part III.D.2. of this permit. The site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction, and must be maintained in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);

(d) prior to commencing construction activities, all primary operators must (1) provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and (2) list in the SWP3 the names and addresses of all MS4 operators receiving a copy;

(e) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or is required to submit an NOI, and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

(f) all secondary operators must provide a copy of the signed and certified Secondary Operator construction site notice to the operator of any MS4 receiving the discharge prior to commencement of construction activities.

4. Waivers for Small Construction Activities:

Part II.G. describes how operators of certain small construction activities may obtain a waiver from coverage.

5. Effective Date of Coverage

(a) Operators of small construction activities as described in either Part II.E.1. or II.E.2. above are authorized immediately following compliance with the applicable conditions of Part II.E.1. or II.E.2. Secondary operators of large construction activities as described in Part II.E.3. above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(b) Primary operators of large construction activities as described in Part II.E.3. above are provisionally authorized seven (7) days from the date that a completed NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. If electronic submission of the NOI is provided, and unless otherwise notified by the executive director, primary operators are authorized immediately following confirmation of receipt of the NOI by the TCEQ. Authorization is non-provisional when the executive director finds the NOI is administratively complete and an authorization number is issued for the activity. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(c) Operators are not prohibited from submitting late NOIs or posting late notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization was obtained.

6. Notice of Change (NOC)

If relevant information provided in the NOI changes, an NOC must be submitted at least 14 days before the change occurs, if possible. Where 14-day advance notice is not possible, the operator must submit an NOC within 14 days of discovery of the change. If

the operator becomes aware that it failed to submit any relevant facts or submitted incorrect information in an NOI, the correct information must be provided to the executive director in an NOC within 14 days after discovery. The NOC shall be submitted on a form provided by the executive director, or by letter if an NOC form is not available. A copy of the NOC must also be provided to the operator of any MS4 receiving the discharge, and a list must be included in the SWP3 that includes the names and addresses of all MS4 operators receiving a copy.

Information that may be included on an NOC includes, but is not limited to, the following: the description of the construction project, an increase in the number of acres disturbed (for increases of one or more acres), or the operator name. A transfer of operational control from one operator to another, including a transfer of the ownership of a company, may not be included in an NOC.

A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing number (or charter number) that is on record with the Texas Secretary of State must be changed.

An NOC is not required for notifying TCEQ of a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

7. Signatory Requirement for NOI Forms, Notice of Termination (NOT) Forms, NOC Letters, and Construction Site Notices

NOI forms, NOT forms, NOC letters, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

8. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

(a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;

(b) the name, address, and telephone number of the operator filing the NOI for permit coverage;

(c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

(d) the number of acres that will be disturbed by the applicant;

(e) confirmation that the project or site will not be located on Indian Country lands;

(f) confirmation that a SWP3 has been developed in accordance with this general permit, that it will be implemented prior to construction, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;

(g) name of the receiving water(s);

(h) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and

(i) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters.

Section F. Terminating Coverage

1. Notice of Termination (NOT) Required

Each operator that has submitted an NOI for authorization under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit. Authorization must be terminated by submitting an NOT on a form supplied by the executive director. Authorization to discharge under this general permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

(a) if authorization was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for the construction site;

(b) an indication of whether the construction activity is completed or if the permittee is simply no longer an operator at the site;

(c) the name, address, and telephone number of the permittee submitting the NOT;

(d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and

(e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites

Each operator that has obtained automatic authorization and has not been required to submit an NOI must remove the site notice upon meeting any of the conditions listed below, complete the applicable portion of the site notice related to removal of the site notice, and submit a copy of the completed site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3), within 30 days of meeting any of the following conditions:

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual or general TPDES permit.

Authorization to discharge under this general permit terminates immediately upon removal of the applicable site notice. Compliance with the conditions and requirements of this permit is required until the site notice is removed.

4. Transfer of Operational Control

Coverage under this general permit is not transferable. A transfer of operational control includes changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State.

When the primary operator of a large construction activity changes or operational control is transferred, the original operator must submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the NOT must be provided to the operator of any MS4 receiving the discharge in accordance with Section II.F.1. above.

Operators of regulated construction activities who are not required to submit an NOI must remove the original site notice, and the new operator must post the required site notice prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the completed site notice must be provided to the operator of any MS4 receiving the discharge, in accordance with Section II.F.3. above.

A transfer of operational control occurs when either of the following criteria is met:

(a) Another operator has assumed control over all areas of the site that have not been finally stabilized; and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Record of this notification (or attempt at notification) shall be retained by the operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

(b) A homebuilder has purchased one or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements listed above, including the development of a SWP3 if necessary. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to lot(s) it has operational control over, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, where all of the following conditions are met. This waiver from coverage does not apply to non-stormwater discharges. The operator must insure that any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

(a) the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5);

(b) the operator submits to the TCEQ a signed waiver certification form, supplied by the executive director, certifying that the construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5); and

(c) the waiver certification form is postmarked for delivery to the TCEQ at least seven (7) days before construction activity begins or, if electronic filing is available, then any time following the receipt of written confirmation from TCEQ that a complete electronic application was submitted and acknowledged.

2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

(a) Estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.

(b) Find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.

(c) Find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.

(d) Refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.

(e) Multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than 5, then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: http://ei.tamu.edu/index.html, or using another available resource.

The waiver certification form is not required to be posted at the small construction site.

3. Effective Date of Waiver

Operators of small construction activities are provisionally waived from the otherwise applicable requirements of this general permit seven (7) days from the date that a completed waiver certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, if electronic form submittals are available.

4. Activities Extending Beyond the Waiver Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

(a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new waiver certification form at least two (2) days before the end of the original waiver period; or

(b) obtain authorization under this general permit according to the requirements delineated in either Part II.E.2. or Part II.E.3. before the end of the approved waiver period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC §305 (relating to Consolidated Permits). Applications for individual permit coverage should be submitted at least three hundred and thirty (330) days prior to commencement of construction activities to ensure timely authorization.

2. Individual Permit Required

The executive director may suspend an authorization or deny an NOI in accordance with the procedures set forth in 30 TAC §205 (relating to General Permits for Waste Discharges), including the requirement that the executive director provide written notice to the permittee. The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

(a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;

(b) the activity being determined to cause a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state: and

(c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC Chapter 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger “has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.”

Additionally, the executive director may cancel, revoke, or suspend authorization to discharge under this general permit based on a finding of historical and significant noncompliance with the provisions of this general permit, relating to 30 TAC §60.3 (Use of Compliance History). Denial of authorization to discharge under this general permit or suspension of a permittee’s authorization under this general permit shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

3. Alternative Discharge Authorization

Any discharge eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), if applicable.

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC §205.3 (relating to

Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit.

2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

Part III. Stormwater Pollution Prevention Plans (SWP3)

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2. and II.E.3. of this general permit that will reach Waters of the U.S., including discharges to MS4s and privately owned separate storm sewer systems that drain to Waters of the U.S., to identify and address potential sources of pollution that are reasonably expected to affect the quality of discharges from the construction site, including off-site material storage areas, overburden and stockpiles of dirt, borrow areas, equipment staging areas, vehicle repair areas, fueling areas, etc., used solely by the permitted project. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3., in compliance with the terms and conditions of this permit.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one SWP3 for a site, permittees must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators must independently obtain authorization, but may work together to prepare and implement a single, comprehensive SWP3 for the entire construction site.

1. The SWP3 must clearly list the name and, for large construction activities, the general permit authorization numbers, for each operator that participates in the shared SWP3. Until the TCEQ responds to receipt of the NOI with a general permit authorization number, the SWP3 must specify the date that the NOI was submitted to TCEQ by each operator. Each operator participating in the shared plan must also sign the SWP3.

2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

Section B. Responsibilities of Operators

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

All secondary operators and primary operators with control over construction plans and specifications shall:

(a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;

(b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;

(c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMP s as necessary to remain compliant with the conditions of this general permit; and

(d) ensure that the SWP3 for portions of the project where they are operators indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If the party with day-to-day operational control has not been authorized or has abandoned the site, the person with control over project specifications is considered to be the responsible party until the authority is transferred to another party and the SWP3 is updated.

2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

(a) meets the requirements of this general permit for those portions of the project where they are operators;

(b) identifies the parties responsible for implementation of BMPs described in the SWP3;

(c) indicates areas of the project where they have operational control over day-to-day activities; and

(d) includes, for areas where they have operational control over day-to-day activities, the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications.

Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil

disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.
2. A primary operator of a large construction activity must post the TCEQ site notice near the main entrance of the construction site. An operator of a small construction activity seeking authorization under this general permit and a secondary operator of a large construction activity must post the TCEQ site notice required in Part II.E.1., 2., or 3. of this general permit in order to obtain authorization. If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. Notices for these linear sites may be relocated, as necessary, along the length of the project. The notices must be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:
   (a) the site-specific TPDES authorization number for the project if assigned;
   (b) the operator name, contact name, and contact phone number;
   (c) a brief description of the project; and
   (d) the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Revisions and Updates to SWP3s

The permittee must revise or update the SWP3 whenever the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by site operators, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part III, Section G of the general permit.

1. A site or project description, which includes the following information:
   (a) a description of the nature of the construction activity;
   (b) a list of potential pollutants and their sources;
   (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;
   (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas that are authorized under the permittee's NOI;
   (e) data describing the soil or the quality of any discharge from the site;
   (f) a map showing the general location of the site (e.g. a portion of a city or county map);
   (g) a detailed site map (or maps) indicating the following:
      (i) drainage patterns and approximate slopes anticipated after major grading activities;
      (ii) areas where soil disturbance will occur;
      (iii) locations of all controls and buffers, either planned or in place;
      (iv) locations where temporary or permanent stabilization practices are expected to be used;
      (v) locations of construction support activities, including off-site activities, that are authorized under the permittee's NOI, including material, waste, borrow, fill, or equipment or chemical storage areas;
      (vi) surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicating those that are impaired waters;
      (vii) locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;
      (viii) vehicle wash areas; and
      (ix) designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).

      Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.
   (h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;
   (i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;
   (j) a copy of this TPDES general permit;
   (k) the NOI and acknowledgement certificate for primary operators of large construction sites, and the site notice for small construction sites and for secondary operators of large construction sites;
   (l) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site; and

(m) locations of all pollutant-generating activities, such as paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.

2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:

(a) General Requirements

(i) Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.

(ii) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

(iii) Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the site, compliant with the requirements of Part III.G.1 and G.2 of this general permit, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

(i) Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

(ii) The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:

(A) the dates when major grading activities occur;

(B) the dates when construction activities temporarily or permanently cease on a portion of the site; and

(C) the dates when stabilization measures are initiated.

(iii) Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than 14 calendar days after the initiation of soil stabilization measures:

(A) Where the immediate initiation of stabilization measures after construction activity temporarily or permanently ceased is precluded

by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

(B) In arid areas, semi-arid areas, or drought-stricken areas where the immediate initiation of stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, erosion control and stabilization measures must be initiated as soon as practicable. Where vegetative controls are not feasible due to arid conditions, the operator shall immediately install, and within 14 calendar days of a temporary or permanent cessation of work in any portion of the site complete, non-vegetative erosion controls. If non-vegetative controls are not feasible, the operator shall install temporary sediment controls as required in Paragraph (C) below.

(C) In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequency established in Section III.F.7.(a) for unstabilized sites.

(D) If the initiation or completion of vegetative stabilization is affected by circumstances beyond the control of the permittee, vegetative stabilization must be initiated or completed as soon as conditions or circumstances allow it on the site. The requirement to initiate stabilization is triggered as soon as it is known with reasonable certainty that work will be stopped for 14 or more additional calendar days.

(iv) Final stabilization must be achieved prior to termination of permit coverage.

(v) TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls.

(i) Sites With Drainage Areas of Ten or More Acres

(A) Sedimentation Basin(s)

(1) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Capacity calculations shall be included in the SWP3.

(2) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

(3) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

(4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(ii) Controls for Sites With Drainage Areas Less than Ten Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

(C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part III.G.6 of this general permit.

3. Description of Permanent Stormwater Controls

A description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are only responsible for the installation and maintenance of stormwater management measures prior to final stabilization of the site or prior to submission of an NOT.

4. Other Required Controls and BMPs

(a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 shall include a description of controls utilized to accomplish this requirement.

(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

(c) The SWP3 must include a description of potential pollutant sources from areas other than construction (such as stormwater discharges from dedicated asphalt plants and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

(e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

(f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part III.G of this general permit.

5. Documentation of Compliance with Approved State and Local Plans

(a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.

(b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.

(c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.

6. Maintenance Requirements

(a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

(b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.

(c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter

controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

(d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.

7. Inspections of Controls

(a) Personnel provided by the permittee must inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWP3 for the site. Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections.

As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented in the SWP3 (e.g., end of “dry” season and beginning of “wet” season).

(b) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.7.(a) above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.7.(a)

above. The conditions of the controls along each inspected 0.25 mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile portion to either the end of the next 0.25 mile inspected portion, or to the end of the project, whichever occurs first.

As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection. The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

(c) In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

(d) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

(e) A report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.

8. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3. of this permit.
9. The SWP3 must include the information required in Part III.B. of this general permit.
10. The SWP3 must include pollution prevention procedures that comply with Part III.G.4 of this general permit.

Section G. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1. *Erosion and sediment controls*. Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

   (a) Control stormwater volume and velocity within the site to minimize soil erosion;

   (b) If any stormwater flow will be channelized at the site, stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion;

   (c) Minimize the amount of soil exposed during construction activity;

   (d) Minimize the disturbance of steep slopes;

   (e) Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

   (f) If earth disturbance activities are located in close proximity to a surface water, provide and maintain appropriate natural buffers if feasible and as necessary, around surface waters, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are not feasible, and shall implement additional erosion and sediment controls to reduce sediment load;

   (g) Preserve native topsoil at the site, unless infeasible; and

   (h) Minimize soil compaction in post-construction pervious areas. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:

      (1) restrict vehicle and equipment use to avoid soil compaction; or

      (2) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible;

   (i) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute “surface waters” for the purposes of triggering the buffer requirement in Part III.G.(f) above.

2. *Soil stabilization*. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary

stabilization must be completed no more than 14 calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements.

3. *Dewatering*. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.
4. *Pollution prevention measures*. Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
   (a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
   (b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and
   (c) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.
5. *Prohibited discharges*. The following discharges are prohibited:
   (a) Wastewater from wash out of concrete trucks, unless managed by an appropriate control (see Part V of the general permit);
   (b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
   (c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
   (d) Soaps or solvents used in vehicle and equipment washing.
6. *Surface outlets*. When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

Part IV. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants at regulated construction sites may be authorized under the provisions of this general permit provided that the following requirements are met for concrete batch plant(s) authorized under this permit. If discharges of stormwater runoff from concrete batch plants are not covered under this general permit, then discharges must be authorized under an alternative general permit or individual permit. This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements

of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease	15 mg/L	1/quarter (*1) (*2)	Grab (*3)
Total Suspended Solids	100 mg/L	1/quarter (*1) (*2)	Grab (*3)
pH	6.0 – 9.0 Standard Units	1/quarter (*1) (*2)	Grab (*3)
Total Iron	1.3 mg/L	1/quarter (*1) (*2)	Grab (*3)

(*1) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(*2) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

January through March

April through June

July through September

October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Section II.E.2., and prior to terminating coverage.

(*3) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

(a) any additional potential sources of pollution, such as spills that might have occurred,

(b) necessary revisions to good housekeeping measures that are part of the SWP3,

(c) additional BMPs, including a schedule to install or implement the BMPs, and

(d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater runon to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

Section B. Best Management Practices (BMPs) and SWP3 Requirements

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit (including, but not limited to Part III.F.7. of this permit):

1. Description of Potential Pollutant Sources - The SWP3 must provide a description of potential sources (activities and materials) that may reasonably be expected to affect the quality of stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe practices that that will be used to reduce the pollutants in these discharges to assure compliance with this general permit, including the protection of water quality, and must ensure the implementation of these practices.

   The following must be developed, at a minimum, in support of developing this description:

   (a) Drainage – The site map must include the following information:

      (1) the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;

      (2) a depiction of the drainage area and the direction of flow to the outfall(s);

      (3) structural controls used within the drainage area(s);

      (4) the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

      (5) the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

   (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to

affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.

(c) Spills and Leaks - A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.

(d) Sampling Data - A summary of existing stormwater discharge sampling data must be maintained, if available.

2. Measures and Controls - The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from Part IV.B.1.(a) of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:

(a) Good Housekeeping - Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.

(1) Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.

(2) Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.

(b) Spill Prevention and Response Procedures - Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

(c) Inspections - Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. The inspection frequency must be specified in the SWP3 based upon a consideration of the level of concrete production at the facility, but must be a minimum of once per month while the facility is in operation. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

(d) Employee Training - An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in

the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.

(e) Record Keeping and Internal Reporting Procedures - A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(f) Management of Runoff - The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following.

(a) Visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.

(b) Based on the results of the evaluation, the following must be revised as appropriate within two weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part IV.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part IV.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.

(c) The permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any incidence(s), and the report must be signed according to 30 TAC §305.128, relating to Signatories to Reports.

(d) The Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part IV.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part V of this general permit.

Part V. Concrete Truck Wash Out Requirements

This general permit authorizes the wash out of concrete trucks at construction sites regulated under Sections II.E.1., 2., and 3. of this general permit, provided the following requirements are met. Authorization is limited to the land disposal of wash out water from concrete trucks. Any other direct discharge of concrete production waste water must be authorized under a separate TCEQ general permit or individual permit.

1. Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
2. Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
3. Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
4. The discharge of wash out water must not cause or contribute to groundwater contamination.
5. If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VI. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required by Part II.E.3. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

1. A copy of the SWP3;
2. All reports and actions required by this permit, including a copy of the construction site notice;
3. All data used to complete the NOI, if an NOI is required for coverage under this general permit; and
4. All records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VII. Standard Permit Conditions

1. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued, and is grounds for enforcement action, for terminating, revoking, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit.
2. Authorization under this general permit may be suspended or revoked for cause. Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for revoking, suspending, or

terminating authorization under this permit. Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.

3. It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
4. Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§361.032-361.033 and 361.037, and 40 CFR §122.41(i). The statement in TWC §26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
5. The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
   (a) negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §§402(a)(3) or 402(b)(8);
   (b) knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
   (c) knowingly violating §303 of the federal CWA, and placing another person in imminent danger of death or serious bodily injury.
6. All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
7. Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
8. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
9. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
10. The permittee shall comply with the reporting requirements in 40 CFR §122.41(l), as applicable.

Part VIII. Fees

1. A fee of must be submitted along with the NOI:
   (a) $325 if submitting a paper NOI, or
   (b) $225 if submitting an NOI electronically.

2. Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
3. No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

Appendix A: Automatic Authorization

Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30

Archer: Dec. 15 - Feb. 14

Armstrong: Nov. 15 - Apr. 30

Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Baylor: Dec. 15 - Feb. 14

Borden: Nov. 15 - Apr. 30

Brewster: Nov. 15 - Apr. 30

Briscoe: Nov. 15 - Apr. 30

Brown: Dec. 15 - Feb. 14

Callahan: Dec. 15 - Feb. 14

Carson: Nov. 15 - Apr. 30

Castro: Nov. 15 - Apr. 30

Childress: Dec. 15 - Feb. 14

Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Coke: Dec. 15 - Feb. 14

Coleman: Dec. 15 - Feb. 14

Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Concho: Dec. 15 - Feb. 14

Cottle: Dec. 15 - Feb. 14

Crane: Nov. 15 - Apr. 30

Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Crosby: Nov. 15 - Apr. 30

Culberson: Nov. 1 - May 14

Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Dawson: Nov. 15 - Apr. 30

Deaf Smith: Nov. 15 - Apr. 30

Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Dimmit: Dec. 15 - Feb. 14

Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Eastland: Dec. 15 - Feb. 14

Ector: Nov. 15 - Apr. 30

Edwards: Dec. 15 - Feb. 14

El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14

Fisher: Dec. 15 - Feb. 14

Floyd: Nov. 15 - Apr. 30

Foard: Dec. 15 - Feb. 14

Gaines: Nov. 15 - Apr. 30

Garza: Nov. 15 - Apr. 30

Glasscock: Nov. 15 - Apr. 30

Hale: Nov. 15 - Apr. 30

Hall: Feb. 1 - Mar. 30

Hansford: Nov. 15 - Apr. 30

Hardeman: Dec. 15 - Feb. 14

Hartley: Nov. 15 - Apr. 30

Haskell: Dec. 15 - Feb. 14

Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Howard: Nov. 15 - Apr. 30

Hudspeth: Nov. 1 - May 14

Hutchinson: Nov. 15 - Apr. 30

Irion: Dec. 15 - Feb. 14

Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14

Jones: Dec. 15 - Feb. 14

Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30

Kerr: Dec. 15 - Feb. 14

Kimble: Dec. 15 - Feb. 14

King: Dec. 15 - Feb. 14

Kinney: Dec. 15 - Feb. 14

Knox: Dec. 15 - Feb. 14

Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Lubbock: Nov. 15 - Apr. 30

Lynn: Nov. 15 - Apr. 30

Martin: Nov. 15 - Apr. 30

Mason: Dec. 15 - Feb. 14

Maverick: Dec. 15 - Feb. 14

McCulloch: Dec. 15 - Feb. 14

Menard: Dec. 15 - Feb. 14

Midland: Nov. 15 - Apr. 30

Mitchell: Nov. 15 - Apr. 30

Moore: Nov. 15 - Apr. 30

Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Nolan: Dec. 15 - Feb. 14

Oldham: Nov. 15 - Apr. 30

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Pecos: Nov. 15 - Apr. 30

Potter: Nov. 15 - Apr. 30

Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Randall: Nov. 15 - Apr. 30

Reagan: Nov. 15 - Apr. 30

Real: Dec. 15 - Feb. 14

Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Runnels: Dec. 15 - Feb. 14

Schleicher: Dec. 15 - Feb. 14

Scurry: Nov. 15 - Apr. 30

Shackelford: Dec. 15 - Feb. 14

Sherman: Nov. 15 - Apr. 30

Stephens: Dec. 15 - Feb. 14

Sterling: Nov. 15 - Apr. 30

Stonewall: Dec. 15 - Feb. 14

Sutton: Dec. 15 - Feb. 14

Swisher: Nov. 15 - Apr. 30

Taylor: Dec. 15 - Feb. 14

Terrell: Nov. 15 - Apr. 30

Terry: Nov. 15 - Apr. 30

Throckmorton: Dec. 15 - Feb. 14

Tom Green: Dec. 15 - Feb. 14

Upton: Nov. 15 - Apr. 30

Uvalde: Dec. 15 - Feb. 14

Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Wichita: Dec. 15 - Feb. 14

Wilbarger: Dec. 15 - Feb. 14

Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14

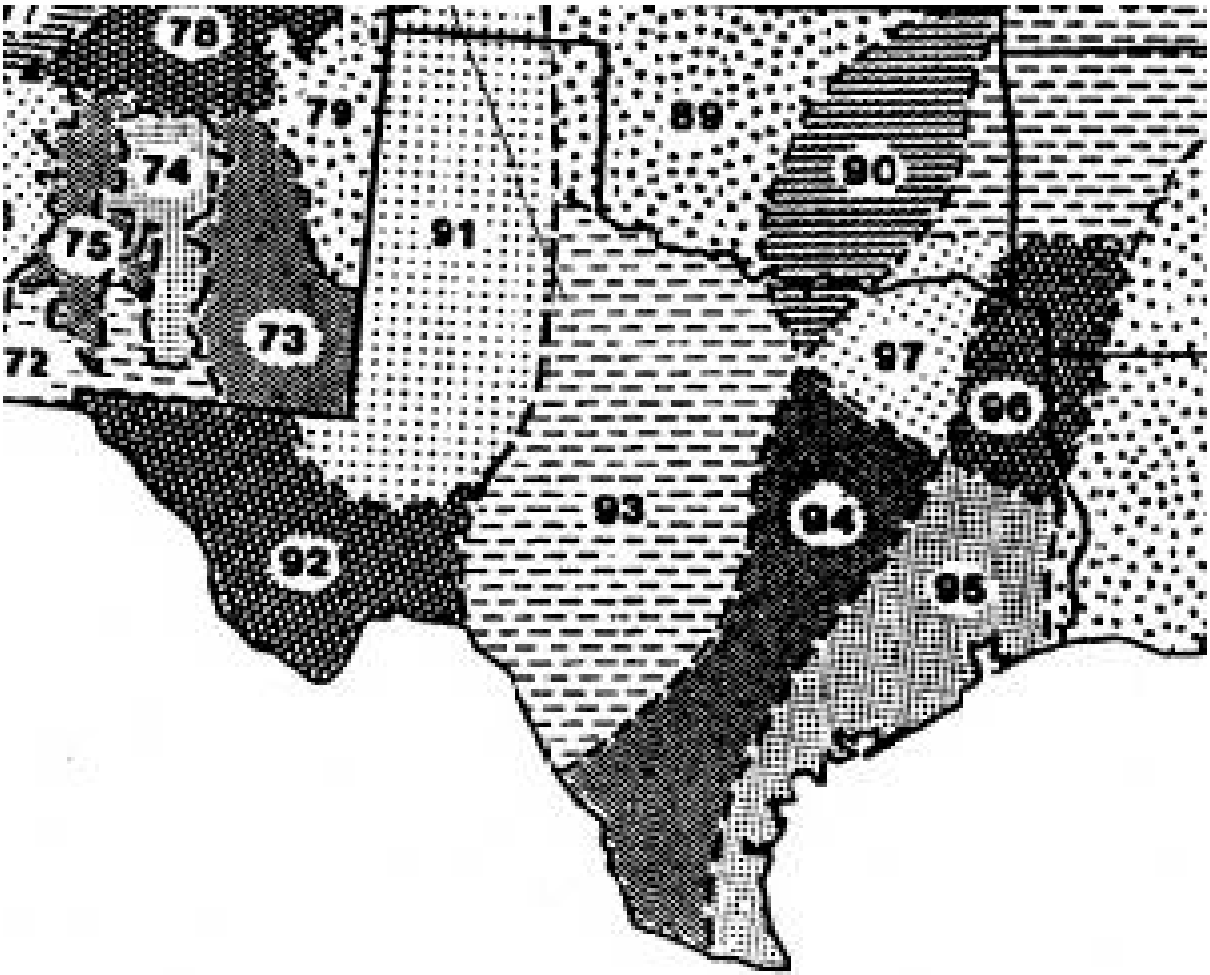
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Young: Dec. 15 - Feb. 14

Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

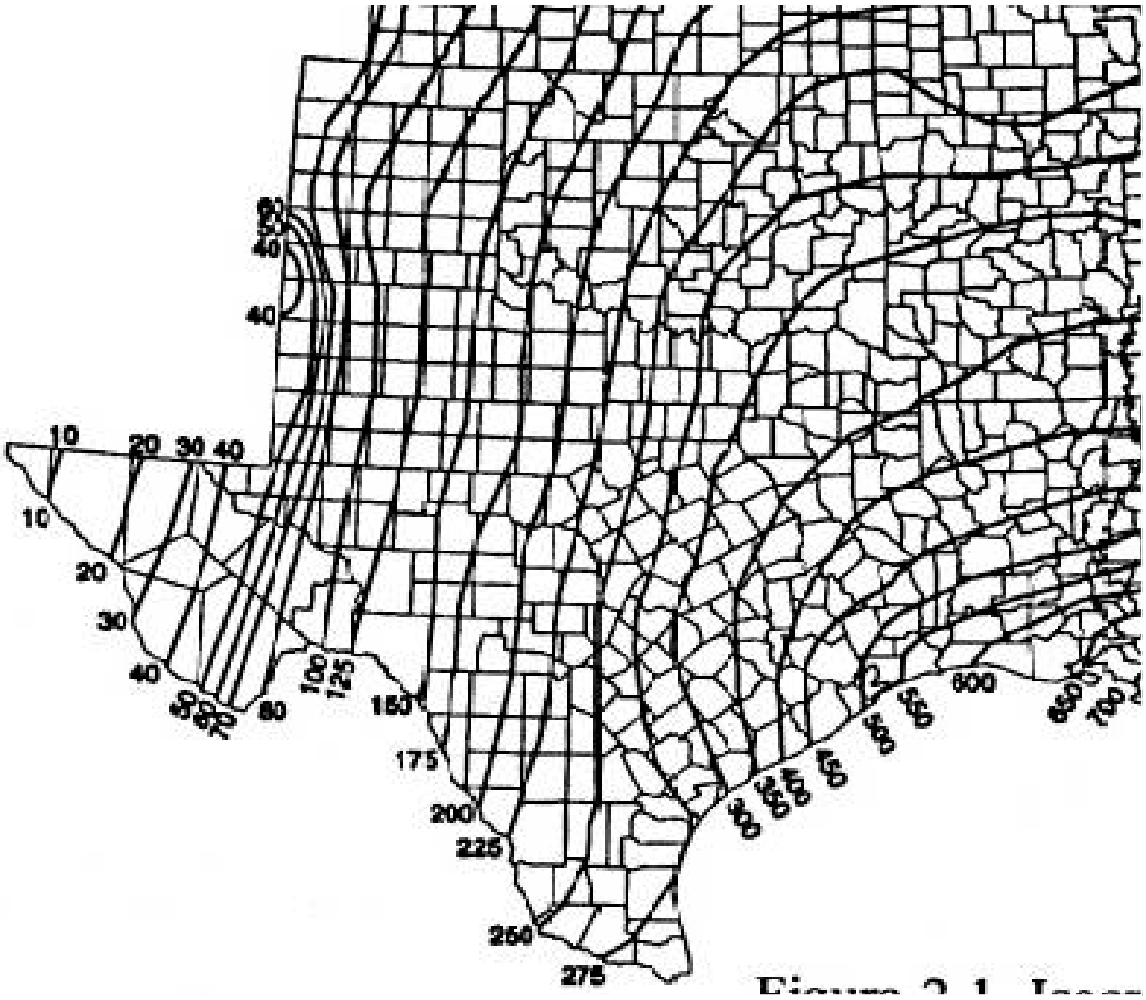
Zavala: Dec. 15 - Feb. 14

Appendix B: Erosivity Index (EI) Zones in Texas



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Periods:

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

* Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

COPY OF NOTICE OF INTENT (NOI)

Texas Commission on Environmental Quality

Construction Notice of Intent

Site Information (Regulated Entity)

What is the name of the site to be authorized?	Gabriels Horn Development
Does the site have a physical address?	No
Because there is no physical address, describe how to locate this site:	North of the intersection of Ronald W Reagan Boulevard and
City	Leander
State	TX
ZIP	78641
County	WILLIAMSON
Latitude (N) (##.######)	30.617073
Longitude (W) (-###.######)	-97.822146
Primary SIC Code	
Secondary SIC Code	
Primary NAICS Code	
Secondary NAICS Code	

Regulated Entity Site Information

What is the Regulated Entity's Number (RN)?	
What is the name of the Regulated Entity (RE)?	Gabriels Horn Development
Does the RE site have a physical address?	No
Because there is no physical address, describe how to locate this site:	North of the intersection of Ronald W Reagan Boulevard and
City	Leander
State	TX
ZIP	78641
County	WILLIAMSON
Latitude (N) (##.######)	30.617073
Longitude (W) (-###.######)	-97.822146
Facility NAICS Code	
What is the primary business of this entity?	Commercial

Customer (Applicant) Information

How is this applicant associated with this site?	Operator
What is the applicant's Customer Number (CN)?	
Type of Customer	Corporation

Full legal name of the applicant:

Legal Name	BM22 LLC

Texas SOS Filing Number	805337771
Federal Tax ID	
State Franchise Tax ID	32092836777
State Sales Tax ID	
Local Tax ID	
DUNS Number	
Number of Employees	
Independently Owned and Operated?	
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes

Responsible Authority Contact

Organization Name	BM22 LLC
Prefix	
First	Swamy
Middle	
Last	Devuni
Suffix	
Credentials	
Title	Owner

Responsible Authority Mailing Address

Enter new address or copy one from list:	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	2508 DAPPLE GRAY LN
Routing (such as Mail Code, Dept., or Attn:)	
City	LEANDER
State	TX
ZIP	78641
Phone (###-###-####)	7032207265
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	samirsmaredia@gmail.com

Application Contact

Person TCEQ should contact for questions about this application:

Same as another contact?	
Organization Name	LJA Engineering
Prefix	
First	Charles

Middle	
Last	Hager
Suffix	V
Credentials	PE
Title	Sr. Director
Enter new address or copy one from list:	

Mailing Address

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	171 CHURCH ST STE 100
Routing (such as Mail Code, Dept., or Attn:)	
City	CHARLESTON
State	SC
ZIP	29401
Phone (###-###-####)	8434055140
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	chager@lja.com

CNOI General Characteristics

1) Is the project or site located on Indian Country Lands?	No
2) Is the project or site associated to a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72?	No
3) Is your construction activity associated with an oil and gas exploration, production, processing, or treatment, or transmission facility?	No
4) Is the project or site associated to a quarrying facility that is located within either the John Graves Scenic Riverway or Coke Stevenson Scenic Riverway, as defined in 30 TAC 311.71?	No
5) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site?	5331
6) If applicable, what is the Secondary SIC Code(s)?	
7) What is the total number of acres that the construction project or site will disturb under the control of the primary operator?	16.37
8) What is the construction project or site type?	Commercial
9) Is the project part of a larger common plan of development or sale?	No
10) What is the estimated start date of the project?	01/01/2026
11) What is the estimated end date of the project?	06/01/2026
12) Will concrete truck washout be performed at the site?	No

13) What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?	South Fork San Gabriel River
14) What is the segment number(s) of the classified water body(s) that the discharge will eventually reach?	1250
15) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?	Yes
15.1) What is the name of the MS4 Operator?	Leander
16) Is the discharge or potential discharge within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?	Yes
16.1) I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented.	Yes
17) I certify that a stormwater pollution prevention plan (SWP3) has been developed, will be implemented prior to construction, and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the general permit TXR150000. Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator.	Yes
18) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000).	Yes
19) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.	Yes

AGENT AUTHORIZATION FORM (TCEQ-0599)

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

I NIKHIL POLSANI,
Print Name

OWNER,
Title - Owner/President/Other

of BM22 LLC,
Corporation/Partnership/Entity Name

have authorized **Charles Hager V, PE**
Print Name of Agent/Engineer

of **LJA Engineering, INC**
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

08/19/2025
Date

THE STATE OF Texas §

County of Williamson §

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

GIVEN under my hand and seal of office on this 19 day of August, 2025

NOTARY PUBLIC

Anusha R Chitteti
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 02-01-2026

ANUSHA R. CHITTETI
Notary Public, State of Texas
Comm. Expires 02-01-2026
Notary ID 133563847

Owner Authorization Form (TCEQ-21019)

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Nikhil Polani of BM22 LLC

am the owner of the property located at:

1961, 2033, 2073, 2101, 2005, 1696, & 1941 Gabriels Horn Place /

18249, 18229, 18201, & 18193 Ronald Reagan Blvd.

Leander, TX 62828

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize LJA Engineering
To conduct Engineering Services
At Gabriels Horn Development

Landowner Acknowledgement

I understand that Gabriels Real Estate LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature Landowner Signature

Date

Date 11/11/2025

THE STATE § OF Texas TX

County § of County Williamson

BEFORE ME, the undersigned authority, on this day personally appeared

landowner or signatory name

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 11 day of November 2025

133563847

Click or tap here to add ID

NOTARY PUBLIC

Anusha R Chitteti

Typed or Printed Name of Notary

ANUSHA R. CHITTETI
Notary Public, State of Texas
Comm. Expires 02-01-2026
Notary ID 133563847

MY COMMISSION EXPIRES: Date 02/01/2026

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Samir Maredia of Gabriels Real Estate LLC

am the owner of the property located at:

18333, 18297, & 18269 Ronald W. Reagan Blvd.

Leander, TX 62828

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize LJA Engineering
To conduct Engineering Services
At Gabriels Horn Development

Landowner Acknowledgement

I understand that Gabriels Real Estate LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Landowner Signature

11/13/2025
Date

THE STATE § OF

County § of

BEFORE ME, the undersigned authority, on this day personally appeared

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this Day 13th day of Month November 2025

NOTARY PUBLIC

MY COMMISSION EXPIRES: Nov 8, 2026

DIRGHA KAFLE
Notary ID #134055519
My Commission Expires
November 8, 2026

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Application Fee Form (TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Gabriels Horn Development

Regulated Entity Location: Adjacent to Ronald W. Reagan Blvd and SW portion adjacent to Gabriel Horn Rd

Name of Customer: BM 22, LLC

Contact Person: Swamy Devuni Phone: 786-137-8613

Customer Reference Number (if issued):CN 606426450

Regulated Entity Reference Number (if issued):RN 112280268

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde

☐ Comal ☐ Kinney

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

☒ Austin Regional Office

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

☐ San Antonio Regional Office

☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	16.37 Acres	$ 6,500
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Swamy Devuni Date: 05/17/25

Application Fee Schedule

Texas Commission on Environmental Quality

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	***Fee***
Extension of Time Request	$150

Core Data Form (TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 606426450		RN 112280268

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	9/8/2025

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*	*If new Customer, enter previous Customer below:*
BM 22 LLC	

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
805337771	32092836777		

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

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

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☒ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:							
	BM 22 LLC						
	2508 Dapple Gray Lane						
	City	Leander	**State**	TX	**ZIP**	78641	**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	swamy@latitude-investment.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(703) 220-7265		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

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

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

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

Gabriels Horn

23. Street Address of the Regulated Entity: *(No PO Boxes)*	Ronald Reagan Boulevard						
	City	Leander	**State**	TX	**ZIP**	78628	**ZIP + 4**
24. County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	North of the intersection of Ronald Reagan Blvd Southbound Lane and Gabriels Horn Rd

26. Nearest City	**State**	**Nearest ZIP Code**

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	36	58	97	49	19

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)

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

Commercial Center with Retail, Restaurants, Offices, and other related land uses.

34. Mailing Address:	**TBD Ronald Reagan Boulevard**						
	City	**Leander**	**State**	**TX**	**ZIP**	**78628**	**ZIP + 4**

35. E-Mail Address:	**swamy@latitude-investment.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(703) 220-7265		**( ) -**

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

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

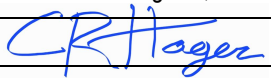
SECTION IV: Preparer Information

40. Name:	Charles R. Hager V, P.E.	**41. Title:**	Senior Director

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(303) 564-2715		( ) -	chager@lja.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:	LJA Engineering, Inc.	**Job Title:**	Sr. Director
Name *(In Print):*	Charles R. Hager V, P.E.	**Phone:**	(303) 564- **2715**
Signature:		**Date:**	9/29/2025