Transmittal

Date: September 26, 2025

To: TCEQ Reviewer

From: Stacy Mulholland

Reference: Double L Ranch RWPF CZP Application

Item No.	Number of Copies	Description
1	1	Cover Sheet
2	1	Edwards Aquifer Application Cover Page
3	1	Contributing Zone Plan Application
4	1	Temporary Stormwater Section
5	1	Agent Authorization Form
6	1	Application Fee Form
7	1	TCEQ Core Data Form
8	1	Development Agreement
9	1	Geological Assessment
10	1	Phase 1 TCEQ Approval Letter

Comments:

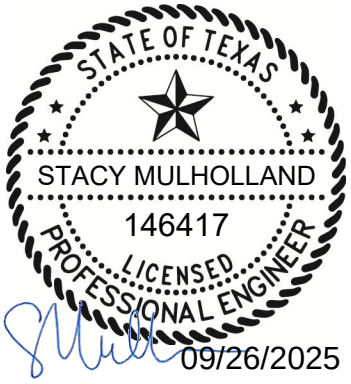
Contributing Zone Plan

Double L Ranch Reclaimed Water Production Facility

Prepared for: Double L Ranch Reclaimed Water Production Facility

Prepared by: BGE, Inc.

TBPE Registered Firm #: 1046



Please note that this site is subject to comply with RG-348A, Optional Enhanced Measures, for West Travis County PUA water quality review.

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: Double L Ranch Reclaimed Water Production Facility					**2. Regulated Entity No.:**				
3. Customer Name: Double L Development, LLC					**4. Customer No.:** CN606051399				
5. Project Type: **(Please circle/check one)**	New		Modification		Extension		Exception		
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			7.406
9. Application Fee:	$ 5,000		**10. Permanent BMP(s):**					Vegetative Filter Strips	
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Hays		**14. Watershed:**					Little Barton Creek	

Application Distribution

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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Stacy Mulholland, P.E.
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 9/26/2025

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: Stacy Mulholland, P.E.

Date: 9/26/2025

Signature of Customer/Agent:

Regulated Entity Name: Double L Ranch Reclaimed Water Production Facility

Project Information

1. County: Hays
2. Stream Basin: Little Barton Creek
3. Groundwater Conservation District (if applicable): Hays Trinity
4. Customer (Applicant):

   Contact Person: Robert E. Fondren
   Entity: Double L Development, LLC
   Mailing Address: 1600 West Loop South, Suite 2600
   City, State: Houston, TX Zip: 77027
   Telephone: (713) 623-2466 Fax: N/A
   Email Address: N/A

5. Agent/Representative (If any):

Contact Person: Stacy Mulholland, P.E.
Entity: BGE, Inc.
Mailing Address: 7330 San Pedro Ave Suite 301
City, State: San Antonio, TX Zip: 78216
Telephone: (210) 581-3637 Fax: N/A
Email Address: smulholland@bgeinc.com

6. Project Location:

☐ The project site is located inside the city limits of _____.
☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of City of Dripping Springs.
☐ 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.

2.0 miles due North from the intersection of US 290 and Ranch Rd 12

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: _____
☐ Residential: # of Living Unit Equivalents: _____
☐ Commercial
☐ Industrial
☒ Other: Reclaimed Water Production Facility

13. Total project area (size of site): 7.406 Acres

Total disturbed area: 10.192 Acres

14. Estimated projected population: _____

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	0	÷ 43,560 =	0
Parking	0	÷ 43,560 =	0
Other paved surfaces	63,162	÷ 43,560 =	1.450
Total Impervious Cover	63,162	÷ 43,560 =	1.450

Total Impervious Cover 1.450 **÷ Total Acreage** 7.406 **X 100 =** 19.58**% 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 City of Dripping Springs (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" = 100'.

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): 48209C0105F, Dated September 2, 2005.

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.

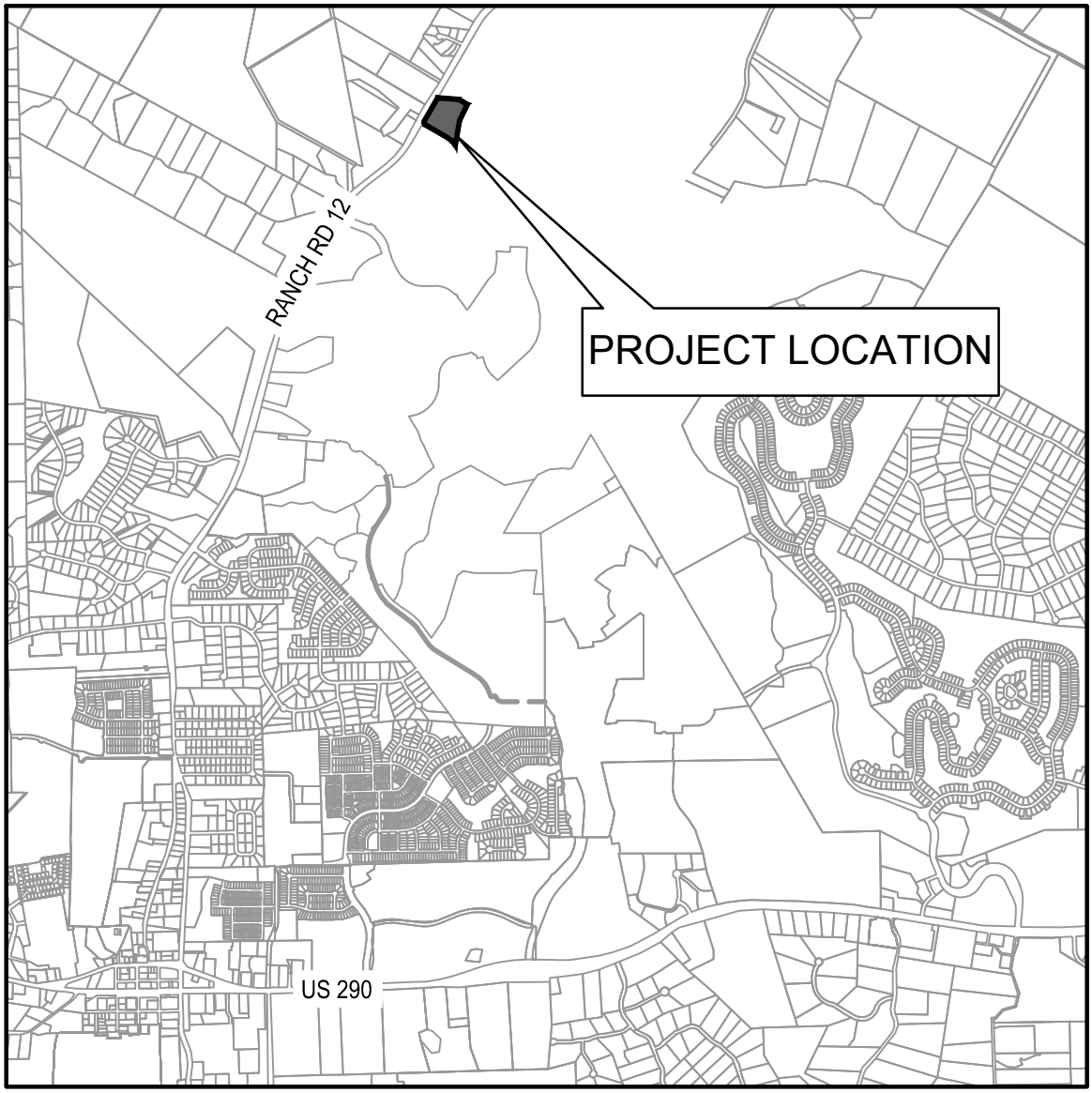
Administrative Information

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.

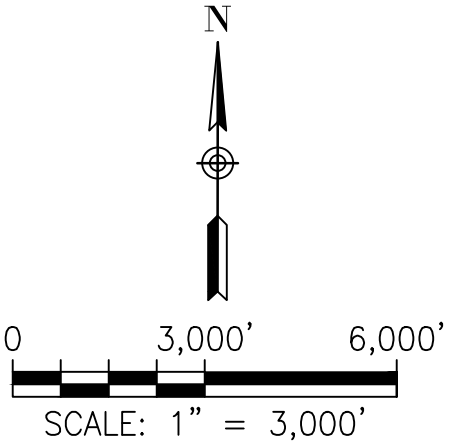
☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.



LOCATION MAP

DOUBLE L RANCH RECLAIMED
WATER PRODUCTION FACILITY

BGE, Inc.
7330 San Pedro Ave Suite 301
San Antonio, TX 78216
Tel: 210-581-3600 ● www.bgeinc.com
TBPE Registration No. F-1046



USGS
science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
OnDemand Topo

DRIPPING SPRINGS QUADRANGLE
TEXAS
7.5-MINUTE TOPO

DOUBLE L RANCH
RWPF SITE

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: UNIVERSAL TRANSVERSE MERCATOR, ZONE 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

MN
GN
3°20'
59 MILS
0°28'
8 MILS
UTM GRID AND 2025 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NU
Grid Zone Designation
14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

TEXAS
QUADRANGLE LOCATION

Hammetts Crossing	Shingle Hills	Bee Cave
Henly	Dripping Springs	Signal Hill
Rough Hollow	Driftwood	Mountain City

ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

DRIPPING SPRINGS, TX
2025

Attachment C – Project Narrative

The Double L Ranch Reclaimed Water Production Facility (RWPF) is proposed on a 7.406-acre undeveloped site located within the City of Dripping Springs (CoDS) Extra Territorial Jurisdiction (ETJ) approximately 2.0 miles north of the intersection of US Highway 290 and Ranch Road 12. The facility is designed to treat wastewater generated by the Double L Ranch development, which will include a mix of residential and commercial tracts. The project site lies within the Little Barton Creek Watershed and does not contain any FEMA 100-yr floodplains (48209C0105F, Dated September 2, 2005). Optional enhanced measures are provided in accordance with the CoDS Development Agreement.

The project proposed with this application will contain the RWPF and associated temporary roadway. A pond will be graded on the RWPF site for future water storage purposes. This pond is not a Best Management Practice (BMP) and therefore is not included in this application. The temporary access road will consist of an aggregate base and will be located within an easement, providing interim access to the site until the surrounding Double L Ranch tracts are fully developed.

This project's scope includes clearing, grubbing, and grading of the overall site, as well as construction of the temporary access roadway. It also includes the installation of water, wastewater, and storm sewer lines along the temporary roadway. The proposed utilities will be located offsite within an easement and will connect the Double L Ranch Phase 1 project, as well as future phases of the development, to the RWPF site. Sewage will be conveyed to the Double L Ranch Reclaimed Water Production Facility (RWPF), where it will be treated and reused. The RWPF is permitted under TPDES Permit No. WQ0014488001 and 210 Reuse Authorization No. EP0000009. This application is for the impervious cover associated with the RWPF site and temporary roadway. The impervious cover will increase from natural conditions to 19.58%, or 1.450 acres of the 7.406 acre site.

The project includes two permanent and two temporary BMPs in the form of vegetative filter strips (VFS) to meet the Total Suspended Solids (TSS) removal requirements. The temporary VFS will be installed offsite along the temporary access road and will be removed as future phases of the Double L Ranch are developed.

- Permanent VFS 1 (PERM VFS 1) is a 50-foot-wide natural vegetative filter strip located along the southeastern corner of the site. It will treat 0.695 acres of impervious cover and provide 693 lbs of TSS removal.
- Permanent VFS 2 (PERM VFS 2) is a 15-foot-wide engineered vegetative filter strip located along the southwestern boundary of the site. It will treat 0.105 acres of impervious cover and remove 109 lbs of TSS.
- Temporary VFS 1 (TEMP VFS 1) is a 7-foot-wide interim vegetative filter strip located along the temporary access road near the first Double L Ranch phase. It will treat 0.162 acres of impervious cover and provide 196 lbs of TSS removal.
- Temporary VFS 2 (TEMP VFS 2) is another 7-foot-wide interim vegetative filter strip located along the temporary access road, closer to the RWPF site. It will treat 0.353 acres of impervious cover and remove 461 lbs of TSS.
- There is 4.868 total acres and 0.007 acres of impervious cover uncaptured from the RWPF site.

The total TSS removal for the RWPF site is 1,459 lbs.

The construction plans submitted with this application include no plans for demolition. The runoff will sheet flow to the permanent and temporary VFS. Any uncaptured flow will be accounted for by the overtreatment by the proposed BMPs. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005). The tables below summarize the TSS removal calculations to show the overall project satisfies TSS removal.

RWPF onsite and offsite acreage

RWPF ACREAGE SUMMARY TABLE				
	ONSITE		OFFSITE	
	BASIN (AC)	IC (AC)	BASIN (AC)	IC (AC)
TEMP VFS 1	0.000	0.000	2.750	0.162
TEMP VFS 2	0.000	0.000	8.172	0.353
PERM VFS 1	1.934	0.695	0.000	0.000
PERM VFS 2	0.604	0.105	0.000	0.000
UNCAP 1	4.868	0.007	1.792	0.056
UNCAP 2			1.938	0.072
TOTAL	**7.406**	**0.807**	**14.652**	**0.643**

Table 1 – Double L Ranch RWPF Onsite/ Offsite Acreage Summary: The table above summarizes the acreage onsite and offsite the RWPF site.

RWPF BMP Summary

RWPF BMP SUMMARY TABLE				
	BASIN (AC)	TOTAL IC (AC)	TSS Removal (LM) lbs. Required	TSS Removal (LM) lbs. Provided
TEMP VFS 1	2.750	0.162	148	196
TEMP VFS 2	8.172	0.353	323	461
PERM VFS 1	1.934	0.695	635	693
PERM VFS 2	0.604	0.105	96	109
UNCAP	8.598	0.135	123	---
TOTAL	**22.058**	**1.450**	**1,325**	**1,459**

Table 2 – Double L Ranch RWPF VFS Summary: The table above summarizes the RWPF VFS TSS removal calculations by BMP to meet the project treatment requirements. Please note that the total basin acreage above includes area onsite and offsite for each BMP TSS removal calculation sheet. However, the project site is only 7.406 acres.

Phase 1 and RWPF with temporary treatment

Total BMP Summary Per RG-348A						
Phase	**BMP Name**	**Proposed BMP**	**Existing IC (AC)**	**Proposed IC (AC)**	**TSS Removal (LM) lbs. Required**	**TSS Removal (LM) lbs. Provided**
1	1-A	Batch Detention	0	6.412	5,861	6,435
	1-B	Batch Detention	0	8.578	7,841	8,630
	1-C	Batch Detention	0	11.163	10,204	10,400
	1-D	Batch Detention	0	9.766	8,927	9,315
	1-E	Batch Detention	0	21.071	19,261	21,400
	Uncaptured	Uncaptured	0	4.260	3,895	---
RWPF	TEMP VFS 1	TEMP VFS	0	0.162	148	196
	TEMP VFS 2	TEMP VFS	0	0.353	323	461
	PERM VFS 1	PERM VFS 1	0	0.695	635	693
	PERM VFS 2	PERM VFS 2	0	0.105	96	109
	RWPF UNCAP	RWPF UNCAP	0	0.135	123	---
TOTAL			**0**	**62.70**	**57,314**	**57,639**

Table 3 – Total Double L Ranch BMP Summary (Including Temporary Treatment): This table summarizes the TSS removal calculations by BMP following the full build-out of Phase 1 and the proposed RWPF (including temporary BMPs to meet project treatment requirements).

Phase 1 and RWPF without temporary treatment

Total BMP Summary Per RG-348A						
Phase	**BMP Name**	**Proposed BMP**	**Existing IC (AC)**	**Proposed IC (AC)**	**TSS Removal (LM) lbs. Required**	**TSS Removal (LM) lbs. Provided**
1	1-A	Batch Detention	0	6.412	5,861	6,435
	1-B	Batch Detention	0	8.578	7,841	8,630
	1-C	Batch Detention	0	11.163	10,204	10,400
	1-D	Batch Detention	0	9.766	8,927	9,315
	1-E	Batch Detention	0	21.071	19,261	21,400
	Uncaptured	Uncaptured	0	4.260	3,895	---
RWPF	PERM VFS 1	PERM VFS 1	0	0.695	635	693
	PERM VFS 2	PERM VFS 2	0	0.105	96	109
	RWPF UNCAP	RWPF UNCAP	0	0.135	123	---
TOTAL			**0**	**62.19**	**56,843**	**56,982**

Table 4 – Total Double L Ranch BMP Summary (Excluding Temporary Treatment): This table summarizes the TSS removal calculations by BMP following the full build-out of Phase 1 and the proposed RWPF. The temporary BMPs will be removed once the surrounding tracts are developed. This table shows that the overall project meets TSS removal requirements without the temporary BMPs.

Attachment D – Factors Affecting Surface Water Quality

Multiple factors have the potential of affecting surface water quality during construction. These include: oil, grease, gas, transmission fluids, and/or other vehicular fluids, as well as shifts in sediment that will occur during excavation and fill operations. Upon completion of construction, normal traffic on the site could be responsible for many of these same pollutants, as well as everyday activities such as car washing and lawn watering.

Attachment E – Volume and Character of Stormwater

The total drainage area accounted for is 22.058 acres, 7.406 acres of which originate on-site. Impervious cover accounts for 1.450 acres of the total drainage area, resulting in an increase in impervious cover from natural conditions to 19.58%. As shown on the BMP Map Exhibit (Attachment K), there are no areas greater than 10 acres with a common drainage area that will be disturbed at one time. Therefore, no temporary sediment ponds are required for this project. Stormwater runoff will be managed through a combination of permanent and temporary vegetative filter strips (VFS). Runoff will sheet flow to these BMPs, which are located both on-site and off-site within a dedicated easement.

- Permanent VFS 1 (PERM VFS 1) is located along the southeastern corner of the RWPF site and will treat 0.695 acres of impervious cover, providing 693 lbs of TSS removal.
- Permanent VFS 2 (PERM VFS 2) is located along the southwestern boundary of the site and will treat 0.105 acres of impervious cover, providing 109 lbs of TSS removal.

Both permanent VFS are within the project site boundary.

- Temporary VFS 1 (TEMP VFS 1) is located along the temporary access road near the first phase of the Double L Ranch development. It will treat 0.162 acres of impervious cover and provide 196 lbs of TSS removal.
- Temporary VFS 2 (TEMP VFS 2) is also located along the temporary access road, closer to the RWPF site. It will treat 0.353 acres of impervious cover and remove 461 lbs of TSS.

The remaining 4.868 acres of the RWPF site will drain without treatment, including 0.007 acres of uncaptured impervious cover.

Attachment F – Suitability Letter from Authorized Agent

Not applicable to this project.

Attachment G – Alternative Secondary Containment Methods

Not applicable to this project.

Attachment H – AST Containment Structure Drawings

Not applicable to this project.

Attachment I – 20% or Less Impervious Cover Waiver

Not applicable to this project.

Attachment J – BMPs for Upgradient Stormwater

There are no permanent BMPs proposed specifically for upgradient stormwater. The area upgradient of the site is undeveloped and flows through this project via Little Barton Creek, which is a natural stream. Any runoff originating in this area, after running flowing through natural vegetation, will not require further treatment by engineering measures.

Attachment K – BMPs for On-Site Stormwater

Silt control fences are to be installed to prevent stormwater from carrying sediment offsite during construction. Construction entrances are to be placed to facilitate the arrival and departure of construction vehicles without the addition of undue erosion. Vegetative filter strips are to be installed in accordance with construction plans to treat pollutant areas of the RWPF site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to provide the required TSS removal. Optional enhanced measures are provided in accordance with the City of Dripping Springs Development Agreement.

LEGEND

- OVERALL DOUBLE L PROPERTY LINE
- WWTP BOUNDARY
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- XX / TOTAL AC: XX / IMPERVIOUS AC: XX — BMP ID; TOTAL DRAINAGE AREA ACREAGE & IMPERVIOUS COVER ACREAGE
- FLOW ARROWS
- FLOW TO PERMANENT VFS 1
- FLOW TO PERMANENT VFS 2
- FLOW TO TEMPORARY VFS 1
- FLOW TO TEMPORARY VFS 2
- UNCAPTURED FLOW

N

0 50' 100' 200'

SCALE: 1" = 100'

FUTURE DOUBLE L PHASE

FUTURE DOUBLE L PHASE

OFFSITE UNCAP 1
TOTAL AC: 1.792
IMPERVIOUS AC: 0.056

14' TEMPORARY ACCESS ROAD

7' TEMPORARY VFS

OFFSITE UNCAP 2
TOTAL AC: 1.938
IMPERVIOUS AC: 0.072

TEMP VFS 1
TOTAL AC: 2.750
IMPERVIOUS AC: 0.162

TEMP VFS 2
TOTAL AC: 8.172
IMPERVIOUS AC: 0.353

14' TEMPORARY ACCESS ROAD

7' TEMPORARY VFS

ONSITE UNCAP
TOTAL AC: 4.868
IMPERVIOUS AC: 0.007

PERM VFS 1
TOTAL AC: 1.934
IMPERVIOUS AC: 0.695

PERM VFS 2
TOTAL AC: 0.604
IMPERVIOUS AC: 0.105

50' NATURAL VFS

15' ENGINEERED VFS

WWTP SITE
7.406 AC

PHASE 1

REV	DESCRIPTION	DATE	APR
		05/27/24	
		09/06/24	
		12/18/24	

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, INC.
1701 Directors Blvd, Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

DOUBLE L RANCH
WWTP

PERMANENT BMP FLOW MAP

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED
PROFESSIONAL ENGINEER
09/26/2025

SHEET
FIG 1.0

Texas Commission on Environmental Quality

TSS Removal Calculations

Project Name: Double L - Ph. 1
Date Prepared: 9/15/2025

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-348A

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: $L_M = 27.7(A_N \times P)$

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 =	Hays	
Total project area included in plan * =	7.406	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.450	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **1325** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = RWPF - TEMP VFS 1

Total drainage basin/outfall area =	2.750	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.162	acres
Post-development impervious fraction within drainage basin/outfall area =	0.06	
$L_{M\ THIS\ BASIN}$ =	148	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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 =	2.750	acres
A_I =	0.162	acres
A_P =	2.59	acres
L_R =	196	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 196 lbs.

F = **1.00**

09/26/2025

Texas Commission on Environmental Quality

TSS Removal Calculations

Project Name: Double L - Ph. 1
Date Prepared: 9/15/2025

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Page 3-29 Equation 3.3: $L_M = 27.7(A_N \times P)$

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 =	Hays	
Total project area included in plan * =	7.406	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.450	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **1325** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = RWPF - TEMP VFS 2

Total drainage basin/outfall area =	8.172	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.353	acres
Post-development impervious fraction within drainage basin/outfall area =	0.04	
$L_{M\ THIS\ BASIN}$ =	323	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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 =	8.172	acres
A_I =	0.353	acres
A_P =	7.82	acres
L_R =	461	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 461 lbs.

F = **1.00**

09/26/2025

Texas Commission on Environmental Quality

TSS Removal Calculations

Project Name: Double L - Ph. 1
Date Prepared: 9/15/2025

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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: $L_M = 27.7(A_N \times P)$

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 =	Hays	
Total project area included in plan * =	7.406	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.450	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	1325	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = RWPF - PERM VFS 1

Total drainage basin/outfall area =	1.934	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.695	acres
Post-development impervious fraction within drainage basin/outfall area =	0.36	
$L_{M\ THIS\ BASIN}$ =	635	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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 =	1.934	acres
A_I =	0.695	acres
A_P =	1.24	acres
L_R =	693	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 693 lbs.

F = 1.00

09/26/2025

Texas Commission on Environmental Quality

TSS Removal Calculations

Project Name: Double L - Ph. 1
Date Prepared: 9/15/2025

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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: $L_M = 27.7(A_N \times P)$

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 =	Hays	
Total project area included in plan * =	7.406	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.450	acres
Total post-development impervious cover fraction * =	0.20	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = **1325** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. = RWPF - PERM VFS 2

Total drainage basin/outfall area =	0.604	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.105	acres
Post-development impervious fraction within drainage basin/outfall area =	0.17	
$L_{M\ THIS\ BASIN}$ =	96	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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 =	0.604	acres
A_I =	0.105	acres
A_P =	0.50	acres
L_R =	109	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 109 lbs.

F = **1.00**

09/26/2025

Attachment L – BMPs for Surface Streams

No BMPs are proposed specifically for surface streams. Proposed on-site BMPs and drainage systems are designed to maintain existing flow patterns.

Attachment M – Construction Plans

Construction plans for both temporary and permanent BMPs are attached.

OFFSITE PLANS FOR
DOUBLE L RANCH, PHASE 1
DRIPPING SPRINGS, TEXAS
"OFF-SITE" FORCE MAIN IMPROVEMENTS

SUBMITTAL DATE : APRIL 2025

SUMMARY NOTES

OWNER: DOUBLE L DEVELOPMENT, LLC
1600 WEST LOOP SOUTH, STE 2600
HOUSTON, TEXAS, 77027

ENGINEER: BGE, INC., TBPE F-1046
1701 DIRECTORS BLVD., SUITE 1000
AUSTIN, TEXAS 78744
(512) 879-0400

LEGAL DESCRIPTION:

FIELD NOTES FOR A 219.758 ACRE TRACT OF LAND OUT OF THE MARCUS D. RAPER SURVEY NO. 37, ABSTRACT NO .394 AND THE EDWARD W. BROWN SURVEY NO. 136 ABSTRACT NO. 44, ALL OF HAYS COUNTY, TEXAS; BEING A PORTION OF A CALLED 1,240.674 ACRE TRACT OF LAND AS CONVEYED TO LL RANCH INVESTMENTS, LP BY SPECIAL WARRANTY DEE RECORDED IN DOCUMENT NUMBER 19035342 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS.

APPROVED BY

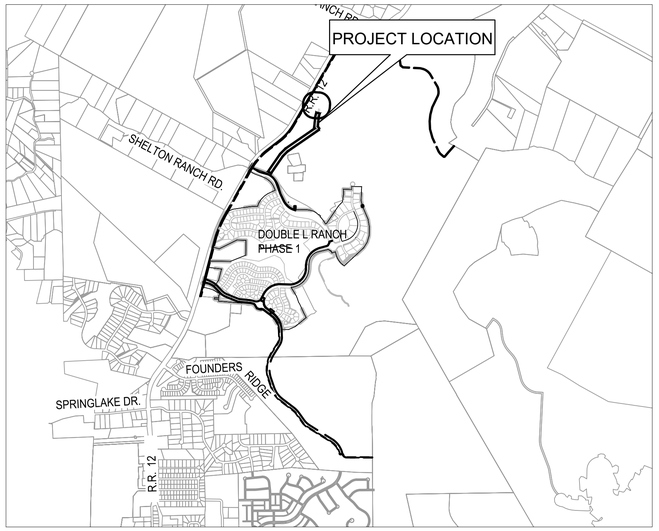
MICHELLE FISCHER - CITY ADMINISTRATOR DATE

CHAD GILPIN, P.E. - CITY ENGINEER DATE

CITY OF DRIPPING SPRINGS - SITE DEVELOPMENT PERMIT # SD2022-0019

ROBBY CALLEGARI, P.E - CITY WATER & WASTEWATER CONSULTANT DATE

VICINITY MAP



PARCEL ID: R168172

TAX PARCEL NUMBER: 10-0044-0005-00003-4

Sheet List Table

Sheet Number	Sheet Title
1	OFFSITE COVER
2	GENERAL NOTES (1 OF 2)
3	GENERAL NOTES (2 OF 2)
4	EXISTING CONDITIONS
5	OVERALL AND EROSION CONTROL PAN
6	FM-A STA 64+00 TO 73+00.00
7	FM-A STA 73+00 TO 80+00
8	FM-A STA 80+00 TO END
9	FORCE MAIN DETAILS (1 OF 2)
10	FORCE MAIN DETAILS (2 OF 2)

GENERAL NOTES

1. A PORTION OF THIS TRACT IS WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) #48209C0105F, HAYS COUNTY, TEXAS DATED SEPTEMBER 2, 2005. THE 100-YEAR FLOODPLAIN IS CONTAINED WITHIN THE DRAINAGE EASEMENT AS SHOWN HEREON.
2. THE PROJECT LIMITS ARE IN THE EDWARDS AQUIFER CONTRIBUTING ZONE.
3. THE PROJECT LIMITS IS LOCATED WITHIN THE LITTLE BARTON CREEK WATERSHED.
4. THE PROJECT IS LOCATED WITHIN THE CITY OF DRIPPING SPRINGS ETJ, AND IS THEREFORE NOT SUBJECT TO THE CITY OF DRIPPING SPRINGS ZONING ORDINANCE.
5. THIS PROPERTY IS SUBJECT TO THE AMENDED AND RESTATED DEVELOPMENT AGREEMENT FOR ANARENE INVESTMENTS TRACT AFFECTIVE AS OF OCTOBER 17, 2012, RECORDED IN VOLUME 4466, PAGE 327 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS AND AMENDED EFFECTIVE AUGUST 13, 2015. ON SEPTEMBER 21, 2021 THE CITY COUNCIL APPROVED THE NEW AMENDED AGREEMENT.
6. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY MUST RELY UPON THE ADEQUACY OF WORK OF THE DESIGN ENGINEER.
7. WASTEWATER SHALL BE PROVIDED BY THE CITY OF DRIPPING SPRINGS.
8. A WATER QUALITY BMP MAINTENANCE PLAN HAS BEEN PREPARED FOR THIS DEVELOPMENT AND IS ON FILE AT CITY HALL IN SITE DEVELOPMENT CASE # _____.
9. A STORMWATER CONTROL MEASURES MAINTENANCE PLAN HAS BEEN PREPARED FOR THIS DEVELOPMENT AND IS RECORDED AS DOCUMENT NO. _____, IN THE PUBLIC RECORDS OF HAYS COUNTY, TEXAS.

BENCHMARKS

DOUBLE L BENCHMARK NOTES:

TBM 80
1/2" IRON ROD WITH CAP STAMPED "BGE INC" SET IN CONCRETE, APPROXIMATELY 2,805 FEET EAST SOUTHEAST OF THE INTERSECTION OF RM 12 AND SHELTON RANCH ROAD.
ELEV 1154.54 NAVD 88 (GEOID 12B)
GRID NORTHING: 13993699.408
GRID EASTING: 2261673.616

TBM 81
1/2" IRON ROD WITH CAP STAMPED "BGE INC" SET IN CONCRETE, APPROXIMATELY 2,105 FEET EAST NORTHEAST OF THE NORTHEAST CORNER OF DRIPPING SPRINGS ELEMENTARY.
ELEV 1098.87 NAVD 88 (GEOID 12B)
GRID NORTHING: 13991478.726
GRID EASTING: 2260655.428

TBM 82
1/2" IRON ROD WITH CAP STAMPED "BGE INC" SET IN CONCRETE, APPROXIMATELY 1,275 FEET NORTHEAST OF THE NORTHWEST CORNER OF DRIPPING SPRINGS ELEMENTARY.
ELEV 1164.83 NAVD 88 (GEOID 12B)
GRID NORTHING: 13991560.896
GRID EASTING: 2258442.301

TBM 83
1/2" IRON ROD WITH CAP STAMPED "BGE INC" SET IN CONCRETE, APPROXIMATELY 1,280 FEET SOUTHEAST OF THE INTERSECTION OF RM 12 AND SHELTON RANCH ROAD.
ELEV 1176.71 NAVD 88 (GEOID 12B)
GRID NORTHING: 13994566.500
GRID EASTING: 2259803.980

TBM 84
1/2" IRON ROD WITH CAP STAMPED "BGE INC" SET IN CONCRETE, APPROXIMATELY 2,050 FEET NORTH NORTHEAST OF THE NORTHEAST CORNER OF DRIPPING SPRINGS ELEMENTARY.
ELEV 1108.92 NAVD 88 (GEOID 12B)
GRID NORTHING: 13992607.731
GRID EASTING: 2259723.299

SUBMITTED BY

I, STACY MULHOLLAND, P.E. NO. 122170, AM AUTHORIZED TO PRACTICE THE PROFESSION OF ENGINEERING, AND HEREBY STATE THAT THIS PLAN CONFORMS WITH APPLICABLE ORDINANCES OF THE CITY OF DRIPPING SPRINGS AND COMPLIES WITH HAYS COUNTY CHAPTER 705 SUBDIVISION REQUIREMENTS.

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED
PROFESSIONAL ENGINEER
09/26/2025

09/26/2025

STACY MULHOLLAND, P.E. DATE
BGE, INC. TBPE NO. 146417
1701 DIRECTORS BOULEVARD, SUITE 1000
AUSTIN, TEXAS 78744
(512) 879-0400 (MAIN)

BGE, INC.
1701 Directors Blvd., Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

CITY OF DRIPPING SPRINGS
ADOPTED FROM CITY OF AUSTIN
ENVIRONMENTAL CRITERIA MANUAL APPENDIX P-1
EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTIVE FENCING, AND CONDUCT "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).

2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE CITY OF AUSTIN EROSION CONTROL (ESC) PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY PLAN REVIEWERS AS WELL AS INSPECTORS.

3. PLAN SHEETS SUBMITTED TO THE CITY OF DRIPPING SPRINGS MUST SHOW THE FOLLOWING:

- 3.1 DIRECTION OF FLOW DURING GRADING OPERATIONS.
- 3.2 LOCATION, DESCRIPTION, AND CALCULATIONS FOR OFF-SITE FLOW DIVERSION STRUCTURES.
- 3.3 AREAS THAT WILL NOT BE DISTURBED; NATURAL FEATURES TO BE PRESERVED.
- 3.4 DELINEATION OF CONTRIBUTING DRAINAGE AREA TO EACH PROPOSED BMP (E.G., SILT FENCE, SEDIMENT BASIN, ETC.).
- 3.5 LOCATION AND TYPE OF E&S BMPS FOR EACH PHASE OF DISTURBANCE.
- 3.6 CALCULATIONS FOR BMPS AS REQUIRED.
- 3.7 LOCATION AND DESCRIPTION OF TEMPORARY STABILIZATION MEASURES.
- 3.8 LOCATION OF ON-SITE SPOILS, DESCRIPTION OF HANDLING AND DISPOSAL OF BORROW MATERIALS, AND DESCRIPTION OF ON-SITE PERMANENT SPOILS DISPOSAL AREAS, INCLUDING SIZE, DEPTH OF FILL AND REVEGETATION PROCEDURES.

4. DESCRIBE SEQUENCE OF CONSTRUCTION AS IT PERTAINS TO ESC INCLUDING THE FOLLOWING ELEMENTS:

- 4.1 INSTALLATION SEQUENCE OF CONTROLS (E.G. PERIMETER CONTROLS, THEN SEDIMENT BASINS, THEN TEMPORARY STABILIZATION, THEN PERMANENT, ETC.)
- 4.2 PROJECT PHASING IF REQUIRED (LOC GREATER THAN 25 ACRES)
- 4.3 SEQUENCE OF GRADING OPERATIONS AND NOTATION OF TEMPORARY STABILIZATION MEASURES TO BE USED
- 4.4 SCHEDULE FOR CONVERTING TEMPORARY BASINS TO PERMANENT WQ CONTROLS
- 4.5 SCHEDULE FOR REMOVAL OF TEMPORARY CONTROLS 6. ANTICIPATED MAINTENANCE SCHEDULE FOR TEMPORARY CONTROLS

5. CATEGORIZE EACH BMP UNDER ONE OF THE FOLLOWING AREAS OF BMP ACTIVITY AS DESCRIBED BELOW:

- 5.1 MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL
- 5.2 CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT
- 5.3 STABILIZE SOILS
- 5.4 PROTECT SLOPES
- 5.5 PROTECT STORM DRAIN INLETS
- 5.6 ESTABLISH PERIMETER CONTROLS AND SEDIMENT BARRIERS
- 5.7 RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES
- 5.8 ESTABLISH STABILIZED CONSTRUCTION EXITS
- 5.9 ANY ADDITIONAL BMPS

6. THE LOCATION AND DETAILS OF THE BMPS ARE ILLUSTRATED ON THE EROSION AND SEDIMENTATION CONTROL CONSTRUCTION PLAN AND DETAIL SHEETS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING ADDITIONAL BMPS AS REQUIRED FOR CONSTRUCTION. FOR MORE INFORMATION, PLEASE SEE THE CITY OF AUSTIN ECM 1.4.

7. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.

8. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTION MEASURES AND "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE CITY OF DRIPPING SPRINGS, (512) 858-4725 OR BY EMAIL AT SCHEDULE@BB-INSPECTIONS.COM OR JESQUIVEL@CITYOFDRIPPINGSPRINGS.COM, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY INSPECTOR AT THIS TIME.

9. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY AUTHORIZED STAFF. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.

10. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR THAT IS EITHER A LICENSED ENGINEER (OR PERSON DIRECTLY SUPERVISED BY THE LICENSED ENGINEER) OR CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC OR CPESC - IT), CERTIFIED EROSION, SEDIMENT AND STORMWATER - INSPECTOR (CESSWI OR CESSWI - IT) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC OR CISEC - IT) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY OR BI-WEEKLY INTERVALS AND AFTER ONE-HALF (½) INCH OR GREATER RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES OR ONE-THIRD (⅓) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.

11. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.

12. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF DRIPPING SPRINGS ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.

13. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW: A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE CITY OF AUSTIN STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES.

TOPSOIL SALVAGED FROM THE EXISTING SITE IS ENCOURAGED FOR USE, BUT IT SHOULD MEET THE STANDARDS SET FORTH IN 601S.

AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE CRITERIA OF STANDARD SPECIFICATION 601S BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.

SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL.

THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

13.1 TEMPORARY VEGETATIVE STABILIZATION:

13.1.1 FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH OR INCLUDE A COOL SEASON COVER CROP: (WESTERN WHEATGRASS (PASCOPYRUM SMITHII) AT 5.6 POUNDS PER ACRE, OATS (AVENA SATIVA) AT 4.0 POUNDS PER ACRE, CEREAL RYE GRAIN (SECALE CEREALE) AT 45 POUNDS PER ACRE. CONTRACTOR MUST ENSURE THAT ANY SEED APPLICATION REQUIRING A COOL SEASON COVER CROP DOES NOT UTILIZE ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) OR PERENNIAL RYEGRASS (LOLIUM PERENNE). COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.

13.1.2 FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE OR A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.

A. FERTILIZER SHALL BE APPLIED ONLY IF WARRANTED BY A SOIL TEST AND SHALL CONFORM TO ITEM NO. 606S, FERTILIZER. FERTILIZATION SHOULD NOT OCCUR WHEN RAINFALL IS EXPECTED OR DURING SLOW PLANT GROWTH OR DORMANCY. CHEMICAL FERTILIZER MAY NOT BE APPLIED IN THE CRITICAL WATER QUALITY ZONE.

B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.

C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95% TOTAL COVERAGE SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR TEMPORARY STABILIZATION ARE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.

D. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, AND STANDARD SPECIFICATION 604S OR 609S.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION 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

13.2 PERMANENT VEGETATIVE STABILIZATION:

13.2.1 FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE-HALF (½) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH TABLE 2 BELOW. ALTERNATIVELY, THE COOL SEASON COVER CROP CAN BE MIXED WITH BERMUDA GRASS OR NATIVE SEED AND INSTALLED TOGETHER, UNDERSTANDING THAT GERMINATION OF WARM-SEASON SEED TYPICALLY REQUIRES SOIL TEMPERATURES OF 60 TO 70 DEGREES.

13.2.2 FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE WITH A PURITY OF 95% AND A MINIMUM PURE LIVE SEED (PLS) OF 0.83. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL. PERMANENT VEGETATIVE STABILIZATION CAN ALSO BE ACCOMPLISHED WITH A NATIVE PLANT SEED MIX CONFORMING TO ITEMS 604S OR 609S.

A. FERTILIZER USE SHALL FOLLOW THE RECOMMENDATION OF A SOIL TEST. SEE ITEM 606S, FERTILIZER. APPLICATIONS OF FERTILIZER (AND PESTICIDE) ON CITY-OWNED AND MANAGED PROPERTY REQUIRES THE YEARLY SUBMITTAL OF A PESTICIDE AND FERTILIZER APPLICATION RECORD, ALONG WITH A CURRENT COPY OF THE APPLICATOR'S LICENSE. FOR CURRENT COPY OF THE RECORD TEMPLATE CONTACT THE CITY OF AUSTIN'S IPM COORDINATOR.

B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.

C. WATER TO THE PLANTED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS OR SOIL. MAINTAIN THE SEEDBED IN A MOIST CONDITION FAVORABLE FOR PLANT GROWTH. ALL WATERING SHALL COMPLY WITH CITY CODE CHAPTER 6-4 (WATER CONSERVATION), AT RATES AND FREQUENCIES DETERMINED BY A LICENSED IRRIGATOR OR OTHER QUALIFIED PROFESSIONAL, AND AS ALLOWED BY THE AUSTIN WATER UTILITY AND CURRENT WATER RESTRICTIONS AND WATER CONSERVATION INITIATIVES.

D PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH 95% COVERAGE FOR THE NATIVE MIX SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR STABILITY MUST BE UNIFORMLY VEGETATED, AND PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET.

E. WHEN REQUIRED, NATIVE PLANTING SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, ITEMS 604S AND 609S.

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDER FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS			
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 MANUFACTURER RECOMMENDATIONS)
10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)	

14. DEVELOPER INFORMATION

OWNER: _____ PHONE#:----------
ADDRESS: _____
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
BGE INC PHONE#:512-879-0400
PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE: _____#:----------
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE:_____ PHONE#:--------

15. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE DEVELOPMENT SERVICES DEPARTMENT AT 512-974-2278 AT LEAST 48 HOURS PRIOR WITH THE LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.

TCEQ GENERAL CZP 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
   - 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 PAN (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 CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S 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 EROSION AND SEDIMENT 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

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES
(REVISED FEBRUARY 2019 OR LATEST VERSION)

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS."
2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL 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 [§290.44(A)(2)].
4. 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 [§290.44(A)(3)].
5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL 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 WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].
7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].
8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].
11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
    11.1. O THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE; $Q = \frac{LD\sqrt{P}}{148{,}000}$

    WHERE:
    - Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR
    - L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
    - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
    - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

    11.1. THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE; $Q = \frac{LD\sqrt{P}}{148{,}000}$

    WHERE:
    - L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
    - S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
    - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
    - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §290.44(E)(1)-(4).
13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT [§290.44(E)(5)].
14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].
15. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§290.44(E)(7)].
16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].
17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C-651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].
18. DE-CHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

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DESIGNED BY:

REVIEWED BY:

DRAWN BY:

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DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

GENERAL NOTES (1 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
2 OF 10

CONTACT INFORMATION

FACILITIES OWNER: CITY OF HOUSTON PUBLIC WORKS DEPARTMENT
7072 ARDMORE ST.
HOUSTON, TX, 77054
PHONE: 713-371-1400

LAND OWNER: DOUBLE L DEVELOPMENT, LLC
1800 WEST LOOP SOUTH, STE 2600
HOUSTON, TEXAS 77027

OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
BGE, INC.
1701 DIRECTORS BLVD. SUITE 1000
AUSTIN TX, 78744
PHONE: 512-879-0400

PERSON OR FIRM RESPONSIBLE FOR EROSION SEDIMENTATION CONTROL:

CONTRACTOR:

PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION.

CONTRACTOR:

SPOILS MANAGEMENT AND DISPOSAL NOTES

1. TEMPORARY HOLDING SITES AS NECESSARY TO STOCKPILE EXCAVATED SOILS, EMBEDMENT MATERIAL, AND/OR PIPING AND APPURTENANCES MAY BE LOCATED WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE PLANS.
2. NO PERMANENT SPOILS DISPOSAL SHALL BE ALLOWED ON-SITE, UNLESS APPROVED BY THE OWNER AND GOVERNING AUTHORITY.
3. ALL SPOILS MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED SPOIL DISPOSAL SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SECURING A PERMIT FOR THE SITE; CONTRACTOR SHALL NOTIFY THE OWNER AND/OR ENGINEER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO DISPOSAL OF ANY SPOILS MATERIAL.

WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY (WTCPUA) NOTES

HOURS OF CONSTRUCTION

1. NO WORK SHALL BE DONE BETWEEN THE HOURS OF 8:00 P.M. AND 6:00 A.M. OR ON SUNDAYS OR LEGAL HOLIDAYS WITHOUT THE WRITTEN PERMISSION OF THE WTCPUA IN EACH CASE, EXCEPT SUCH WORK AS MAY BE NECESSARY FOR THE PROPER CARE, MAINTENANCE AND PROTECTION OF THE WORK ALREADY DONE OR IN THE CASE OF RIM EMERGENCY.

LIMITS OF CONSTRUCTION

1. THE LIMITS OF CONSTRICTION SHALL BE BOUNDED BY THE RIGHT OF WAY LINE OR PERMANENT/ TEMPORARY EASEMENT LIMITS SHOWN ON THE PLANS. LIMITS OF CONSTRUCTION MAY BE FURTHER RESTRICTED BY PLACEMENT OR SILT FENCE, TREE PROTECTION FENCING, OR OTHER APPURTENANCES
AS SHOWN ON THE PLANS.
2. LIMITS OF CONSTRUCTION SHALL BE CLEARLY DELINEATED BY THE CONTRACTOR BY INSTALLING SILT FENCE, ORANGE TENSAR FENCING (4 FOOT ROLL TIED TO 6-FOOT POSTS SET AT 10 FOOT INTERVALS) OR OTHER BARRIERS AS APPROVED BY THE ENGINEER. ALL TEMPORAL BARRIERS SHALL BE REMOVED AT THE END OF THE PROJECT.
3. ANY AREAS OUTSIDE THE LIMITS OF CONSTRUCTION DISTURBED BY THE CONTRACTOR SHALL IMMEDIATELY BE RESTORED TO PRECONSTRUCTION CONDITION.

SANITARY FACILITIES

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

PROTECTION OF BORE PITS

1. INSTALL BARRIER FENCING (TENSAR ORANGE FENCING OR CHAIN LINK FENCING) TO SURROUND BORE PITS. BARRIER FENCING SHALL REMAIN IN PLACE AT ALL TIMES THE BORE PIT IS OPEN. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY AND SAFETY AT BORE PITS AT ALL TIMES.

HORIZONTAL CONTROLS

1. ALL LINEWORK HALL BE STAKED PRIOR TO CONSTRUCTION WITH SEALED CUT SHEETS PROVIDED TO THE WTCPUA INSPECTOR PRIOR TO CONSTRUCTION.

CONSTRUCTION SEQUENCING

1. 48 HOURS PRIOR TO BEGINNING AND WORK, CALL THE TEXAS ONE CALL SYSTEM AT 1 800-344-8377 FOR UTILITY LOCATIONS AND OBTAIN STREET CUT PERMIT DESIGNATED BY TxDOT FOR ANY WORK WITHIN COUNTY RIGHT-OF-WAY.
2. INSTALL TEMPORARY EROSION CONTROLS AND TREE/NATURAL AREA PROTECTION FENCING PRIOR TO PRE-CONSTRUCTION MEETING AND PRIOR TO ANY SITE CLEARING, GRUBBING, EXCAVATION, MATERIAL STOCKPILING, OR OTHER CONSTRUCTION OPERATIONS.
3. SCHEDULE AND CONVENE A PRECONSTRUCTION MEETING INCLUDING BUT NOT LIMITED TO THE OWNERS REPRESENTATIVE AND TXDOT REPRESENTATIVE.
4. INSTALL TRAFFIC CONTROL MEASURES
5. REMOVE AND STOCKPILE TOPSOIL IN AREAS SO REQUIRED
6. COMPLETE ALL UNDERGROUND INSTALLATIONS
7. COMPLETE ABOVE GROUND CIVIL IMPROVEMENTS
8. COMPLETE PERMANENT EROSION CONTROL AND SITE RESTORATION.
9. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.
10. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY CONSTRUCTION OPERATIONS.
11. ROUGH GRADE PONDS TO 100% CAPACITY. EITHER THE PERMIT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO CLEARING, EXCAVATION AND EMBANKMENT ACTIVITIES. THE PONDS AND OUTLETS SHALL BE MAINTAINED AS FUNCTIONAL AS TEMPORARY DETENTION AND SEDIMENTATION BASINS THROUGHOUT CONSTRUCTION UNTIL INSTALLATION OF THE PERMANENT PONDS IS COMPLETE.

TCEQ WATER 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 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 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 WATER LINE 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 WATER LINES SHALL BE HYDROSTATIC LEAK TESTED IN CONFORMANCE WITH AWWA C600 FOR DUCTILE IRON PIPE AND AWWA C605 FOR PVC PIPE.
7. ALL WATER LINES SHALL BE DISINFECTED IN CONFORMANCE WITH AWWA C651.

TCEQ WATER/WASTEWATER LINE SEPERATION NOTES:

1. NEW WATERLINE INSTALLATION -- PARALLEL LINES:
WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.
2. NEW WATER LINE INSTALLATION -- CROSSING LINES
WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, NON--PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OF LATERAL IS DISTURBED OR SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OF LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FORM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.

TRAFFIC CONTROL NOTES

1. PLANS SHALL INDICATE RESPONSIBLE AGENT FOR TRAFFIC CONTROL (ENGINEER OR CONTRACTOR).
2. CONTRACTOR SHALL MAINTAIN REASONABLE LOCAL VEHICULAR TRAFFIC THROUGHOUT CONSTRUCTION OPERATIONS.
3. CONTRACTOR SHALL PROVIDE SIGNS, BARRICADES, FLAGGERS, AND OTHER MEASURES AS REQUIRED TO ALLOW FOR VEHICULAR AND PEDESTRIAN TRAFFIC TO PROCEED SAFELY WITH MINIMUM INCONVENIENCE
4. SIGNS, BARRICADES, FLAGGERS, AND RELATED WORK SHALL BE IN ACCORDANCE NORTH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND WITH THE REQUIREMENTS OF THE GOVERNING CITY/COUNTY.
5. FOR ANY ACTIVITY WITHIN TXDOT RIGHT-OF-WAY, PROJECT MUST HAVE A TXDOT PERMIT. A COPY OF THE TXDOT PERMIT SHALL BE PROVIDED TO THE WTCPUA PRIOR TO CONSTRUCTION.

SWPPP NOTES

THIS PROJECT IS SUBJECT TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM (TTDES) GENERAL PERMIT TXR150000 FOR CONSTRUCTION ACTIVITIES. THE GENERAL PERMIT REQUIRES THE PREPARATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH HAS BEEN PROVIDED BY THE OWNER FOR USE BY THE CONTRACTOR. THE OWNER SHALL PROVIDE THE OWNER'S NOTICE OF INTENT (NOI) AND NOTICE OF TERMINATION (NOT) TO THE TCEQ. THE CONTRACTOR'S RESPONSIBILITIES ARE AS FOLLOWS:

1. MAINTAIN A COPY OF THE SWPPP AND A SET OF CONSTRUCTION PLANS WITH THE TEMPORAL EROSION AND SEDIMENT CONTROL PLAN AT THE WORK SITE AT ALL TIMES.
2. FILE A NOTICE OF INTENT (NOI) AND APPLICABLE PAYMENT TO THE TCEQ AT LEAST 2 DAYS PRIOR TO SITE DISTURBANCE.
3. POST A COPY OF THE OWNER'S AND CONTRACTOR'S NOI FORMS AT THE WORK SITE.
4. SIGN THE CERTIFICATION AND OBTAIN A SIGNED CERTIFICATION STATEMENT FROM ALL SUBCONTRACTORS RESPONSIBLE FOR IMPLEMENTING THE EROSION AND SEDIMENT CONTROL MEASURES WHICH INDICATES THAT THE CONTRACTOR AND SUBCONTRACTOR UNDERSTANDS THE PERMIT REQUIREMENTS (FORMS ARE IN THE SWPPP)
5. FOLLOW AND COMPLY WITH ALL ASPECTS OF THE TPDES GENERAL PERMIT NO. TXR150000. THIS INCLUDES BUT IS NOT LIMITED TO FIELD INSPECTIONS AND REPORT, MAINTAINING AND REPAIRING EROSION CONTROLS AND UPDATING EROSION CONTROLS AND UPDATING EROSION CONTROL PLAN SHEETS BASED ON FIELD CHANGES AND MODIFICATIONS.
6. FILE A COPY OF THE CONTRACTOR'S NOT WITH THE TCEQ ONCE THE WORK IS COMPLETED IN ACCORDANCE WITH THE TPDES GENERAL PERMIT NO TXR150000 AND HAS BEEN ACCEPTED BY THE OWNER.

CITY OF DRIPPING SPRINGS STANDARD WASTEWATER UTILITY CONSTRUCTION NOTES

1. ALL WASTEWATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN AND TCEQ 30 TAC, CHAPTER 217 REQUIREMENTS.
2. CONTRACTOR SHALL GUARANTEE THE WORK AGAINST DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE CITY OF DRIPPING SPRINGS.
3. ALL GAS, ELECTRIC, AND TELECOMMUNICATION LINES MUST CROSS BELOW WASTEWATER MAINS AND SERVICE LINES THAT ARE LESS THAN 5 FEET DEEP, ANY LINE THAT CANNOT CROSS UNDER WILL REQUIRE APPROVAL FROM THE CITY OF DRIPPING SPRINGS
4. BEDDING FOR GRAVITY WASTEWATER LINES, FORCE MAINS, LOW PRESSURE SEWER LINES, AND TREATED EFFLUENT LINES SHALL CONTAIN GREATER THAN 70% OF TOTAL ANALYSIS OF ¾" TO 1 ½" ROCK WITH A 6 OUNCE NONWOVEN GEOTEXTILE FABRIC, MEETING EITHER TXDOT DMS 6200 OR TYPE 1 COA 620S, PLACED OVER THE BEDDING. CONTRACTOR SHALL PROVIDE A MINIMUM 5 GALLON BUCKET SAMPLE OF THE PROPOSED BEDDING MATERIAL FOR CITY OF DRIPPING SPRINGS APPROVAL.
5. WHEN GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, RECOMMENDATIONS ON BEDDING AND BACKFILL SHALL BE PROVIDED BY A GEOTECHNICAL ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ALL RECOMMENDATIONS SHALL BE APPROVED BY THE CITY OF DRIPPING SPRINGS.
6. CONTRACTOR SHALL ADHERE TO CITY OF AUSTIN STANDARD 1100S-1 FOR WASTEWATER MANHOLE RING ADJUSTMENTS IN PAVED AREAS.
7. GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 ASTM D3034 IF LOCATED GREATER THAN 9 FEET FROM A WATERLINE. IF LESS THAN 9 FEET (OUTSIDE OF PIPE OR MANHOLE TO OUTSIDE OF PIPE) FROM ANY WATER LINE, PIPE SHALL BE PVC SDR 26 ASTM D2241 PRESSURE RATED PIPE.
8. FORCE MAINS SHALL BE MINIMUM PVC SDR 26 ASTM D2241 PRESSURE RATED PIPE IN LABELED BROWN POLY BAG.
9. TREATED EFFLUENT LINES SHALL BE MINIMUM PVC SDR 21 ASTM D2241 USING ONLY FACTORY MOLDED PURPLE PRESSURE RATED PIPE.
10. ALL WASTEWATER MANHOLES OR LARGE DIAMETER CLEANOUTS ARE TO BE COATED WITH CEMENTITIOUS LINING (SEWPERCOAT® OR APPROVED EQUAL) PER CITY OF AUSTIN REQUIREMENTS. EXISTING MANHOLES WHERE CONNECTIONS ARE MADE TO THE CITY SEWER SYSTEM SHALL BE COATED OR RECOATED AFTER CONNECTIONS ARE MADE OR AFTER MANHOLE ADJUSTMENTS ARE MADE.
11. ENGINEER AND CONTRACTOR SHALL COORDINATE WITH THE DRIPPING SPRINGS WSC REGARDING WATER LINE AND WATER SERVICE LINE CROSSINGS.
12. CONTRACTOR SHALL INSTALL BOLTED MANHOLE LIDS (EAST JORDAN V2432 OR APPROVED EQUAL) WITH MINIMUM TOP OF LID 10"-12" ABOVE FINISHED GRADE ON ALL MANHOLES OUTSIDE PAVEMENT USING CITY OF DRIPPING SPRINGS WASTEWATER DETAIL.
13. WASTEWATER MANHOLE LIDS SHALL HAVE "SANITARY SEWER" CAST IN THE LID.
14. CITY OF DRIPPING SPRINGS' INSPECTOR SHALL OBSERVE INSTALLATION OF ALL TAPS ONTO WASTEWATER LINES.
15. CITY OF DRIPPING SPRINGS' INSPECTOR SHALL BE NOTIFIED 48 HOURS PRIOR TO ALL UTILITY LINE TESTING BY CALLING THE CITY 512-858-4725 OR THE DESIGNATED INSPECTOR IDENTIFIED AT THE PRECONSTRUCTION MEETING.
16. CONTRACTOR SHALL PERFORM THE FOLLOWING TESTING ON ALL TYPES OF WASTEWATER IMPROVEMENTS AT HIS EXPENSE:
    a. GRAVITY WASTEWATER LINES AND SERVICES - LOW PRESSURE AIR TEST PER TCEQ CHAPTER 217.57.
    b. GRAVITY WASTEWATER LINES - MANDREL DEFLECTION TESTING AFTER 30 DAYS OF FINAL BACKFILL PER TCEQ CHAPTER 217.57.
    c. GRAVITY WASTEWATER LINES - TELEVISED UPON COMPLETION OF ALL CONSTRUCTION INCLUDING DRY UTILITIES AND PRIOR TO PAVING. CONTRACTOR SHALL PROVIDE THE VIDEOS OF THE PIPES TO THE CITY OF DRIPPING SPRINGS PRIOR TO ACCEPTANCE.
    d. WASTEWATER MANHOLES - VACUUM TEST @ 10 INCHES OF MERCURY FOR 3 MINUTES. THE MANHOLE SHALL HAVE PASSED THE TEST IF THE VACUUM DOES NOT DROP BELOW 9 INCHES OF MERCURY (-4.5 PSIG) WITHIN 3 MINUTES OF THE TIME THE INSPECTOR STARTED THE TEST. NO VACUUM TESTING WILL BE ACCEPTED BY THE CITY OF DRIPPING SPRINGS UNTIL COMPLETION OF MINIMUM FIRST COURSE OF BASE IS INSTALLED.
    e. FORCE MAINS AND TREATED EFFLUENT LINES - HYDROSTATICALLY TEST TO A MINIMUM OF 50 PSI ABOVE NORMAL WORKING PRESSURE AS DETERMINED BY THE CITY OF DRIPPING SPRINGS WASTEWATER ENGINEER AND/OR DESIGN ENGINEER FOR A MINIMUM PERIOD OF 4 HOURS PER TCEQ 217.68.
    f. PRESSURE SEWER MAINS - HYDROSTATICALLY TEST TO A MINIMUM 25 PSI ABOVE NORMAL WORKING PRESSURE OR 1.5 TIMES WORKING PRESSURE, WHICH EVER IS LARGER AS DETERMINED BY THE CITY OF DRIPPING SPRINGS WASTEWATER ENGINEER AND/OR DESIGN ENGINEER FOR A MINIMUM PERIOD OF 4 HOURS PER TCEQ 217.99.
    g. EXISTING WASTEWATER FACILITIES - PRETEST AND POSTTEST EXISTING LINES AND MANHOLES WHEN CONNECTING TO EXISTING FACILITIES AT CONTRACTOR'S SOLE EXPENSE.
17. NO TREES SHALL BE LOCATED CLOSER THAN 10 FEET FROM PUBLIC WASTEWATER MAINS OR SERVICE LINES TO BE MAINTAINED BY THE CITY.
18. WASTEWATER LINES SHALL BE CONSTRUCTED SO THE DRIPPING SPRINGS CITY CAN PERFORM MAINTENANCE ON THEM WHEN NECESSARY THIS INCLUDES:
    a. NO WALLS CONSTRUCTED OVER OR WITHIN SIX FEET OF A WASTEWATER LINE WITHOUT PRIOR APPROVAL FROM THE DRIPPING SPRINGS CITY STAFF OR ITS ENGINEERS.
    b. NO SIGNS CONSTRUCTED OVER OR WITHIN SIX FEET OF A WASTEWATER LINE WITHOUT PRIOR APPROVAL FROM DRIPPING SPRINGS CITY STAFF OR ITS ENGINEERS.
    c. NOTHING CAN BE BUILT OR PLACED WITHIN THE DRIPPING SPRINGS CITY EASEMENTS THAT CANNOT BE EASILY MOVED BY CITY STAFF TO PERFORM MAINTENANCE
    d. ALL WASTEWATER LINES MUST BE CONSTRUCTED OUT OF THE FLOW LINE OF OTHER UTILITY TRENCHES, UNLESS CROSSING AT LEAST A 45 DEGREES ANGLE.
    e. NO WASTEWATER LINE WILL BE CONSTRUCTED IN THE FLOWLINE OF A DRAINAGE DITCH.
19. ALL TESTING EQUIPMENT AND METHODS SHALL BE INSPECTED AND APPROVED BY THE CITY OF DRIPPING SPRINGS PRIOR TO START OF TESTING. ALL OIL FILLED GAUGES SHALL BE PROPERLY SECURED WITH FACES POINTING UPWARDS. NO LOOSE GAUGES WILL BE ACCEPTED.
20. ALL CORING OF MANHOLES AND WET WELLS SHALL HAVE WRITTEN APPROVAL BY THE CITY OF DRIPPING SPRINGS PRIOR TO INSTALLATION. CONTRACTOR SHALL ALSO PROVIDE AN INVERT MODIFICATION SKETCH FOR APPROVAL BY CITY OF DRIPPING SPRINGS WASTEWATER ENGINEER OF THE PROPOSED INVERT CHANGE FOR APPROVAL PRIOR TO INSTALLATION.
21. CITY OF AUSTIN DETAIL 506S-7 SHALL BE USED FOR DROP MANHOLE DETAILS AND PRECAST MANHOLES ON CAST IN PLACE BASES.
22. CITY OF DRIPPING SPRINGS WASTEWATER SERVICE DETAIL SHALL BE USED ON ALL WASTEWATER SERVICE INSTALLATIONS.

REV	DESCRIPTION	DATE	APR

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

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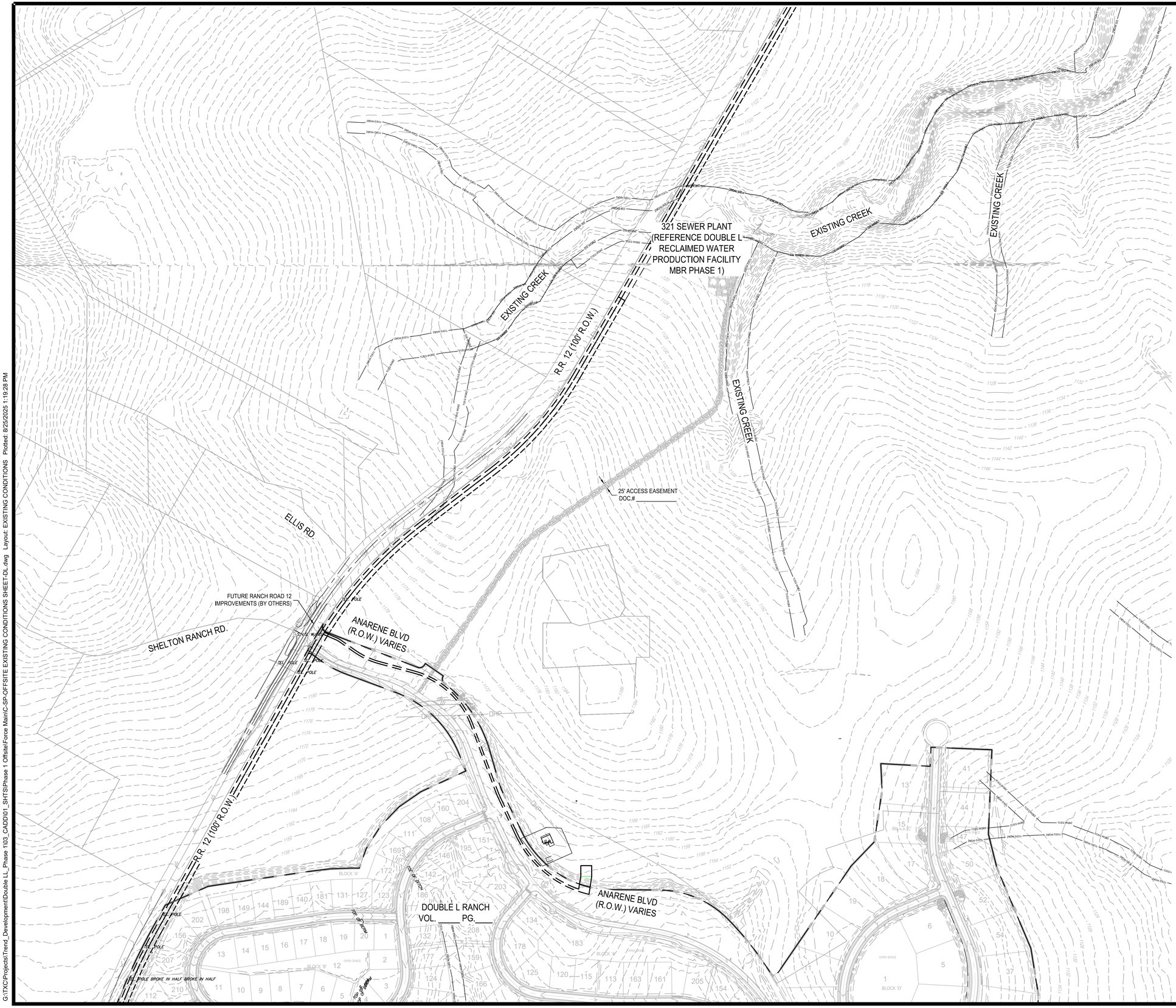
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

GENERAL NOTES (2 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED
PROFESSIONAL ENGINEER
09/26/2025

SHEET
3 OF 10



N

0 100' 200' 400'

SCALE: 1" = 200'

LEGEND

- PROPOSED BOUNDARY
- XXX EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- TCEQ WQBZ TCEQ WQBZ TCEQ WATER QUALITY BUFFER ZONE
- DS WQBZ DS WQBZ DRIPPING SPRINGS WATER QUALITY BUFFER ZONE
- EXISTING PROPERTY LINE
- OHT OHT EXISTING OVERHEAD TELEPHONE LINE
- OHP OHP EXISTING OVERHEAD POWER LINE
- EXISTING EDGE OF PAVEMENT

REV	DESCRIPTION	DATE	APR

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, INC.
1701 Directors Blvd, Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

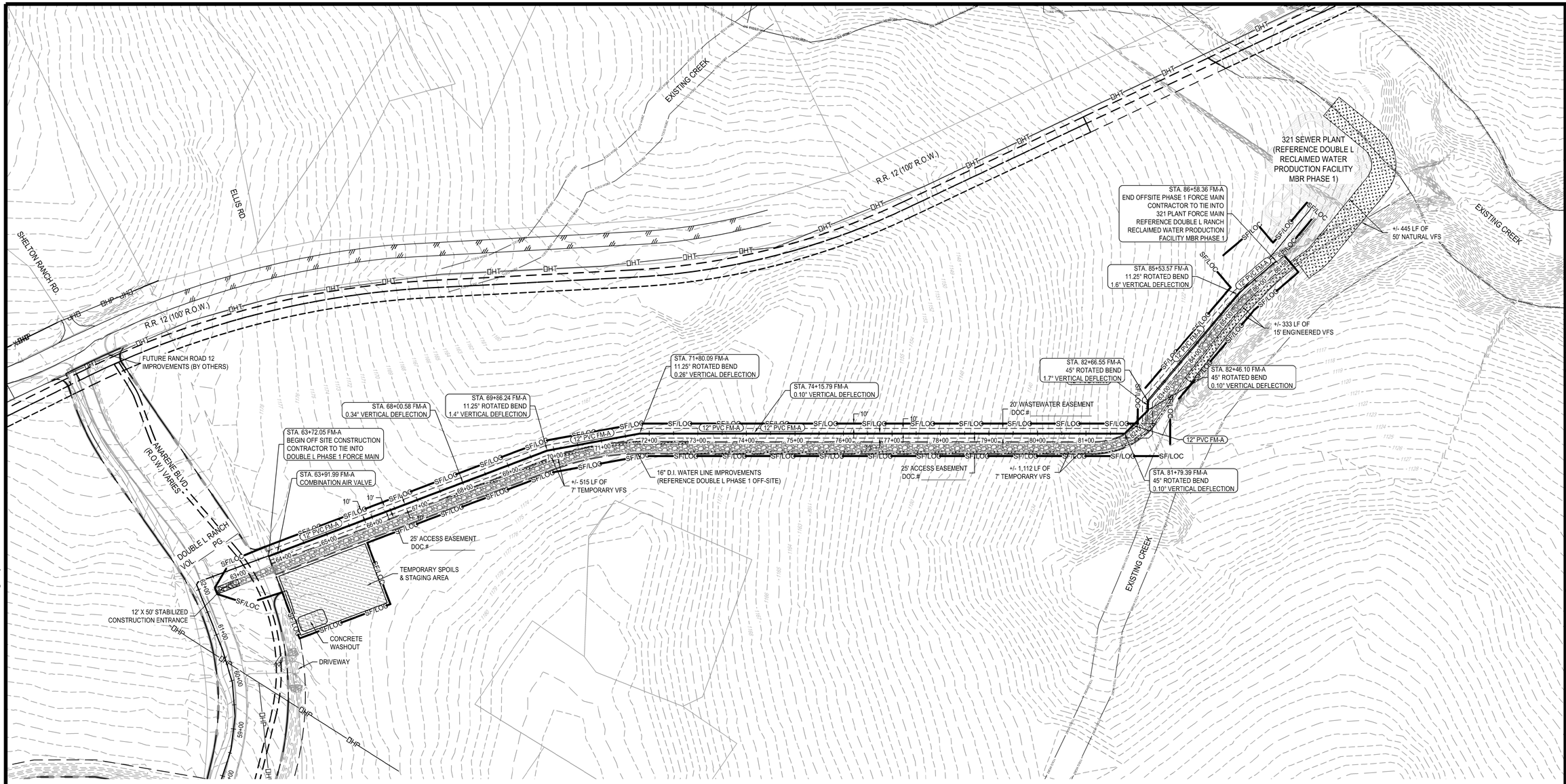
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

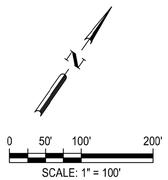
EXISTING CONDITIONS

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED
PROFESSIONAL ENGINEER
09/26/2025

SHEET
4 OF 10

G:\TXC\Projects\Trend_Development\Double LL_Phase 1\03_CADD\01_SHTS\Phase 1 Offsite\Force Main\C-SP-OFFSITE EXISTING CONDITIONS SHEET-DL.dwg Layout: EXISTING CONDITIONS Plotted: 8/25/2025 1:19:28 PM





LEGEND

- PROPERTY BOUNDARY
- XXX — PROPOSED CONTOUR
- XXX — EXISTING CONTOUR
- PROPOSED STORM DRAIN LINE
- LOC — LOC — LIMITS OF CONSTRUCTION
- SF — SF — TEMPORARY SILT FENCE
- SF/LOC — SF/LOC — TEMPORARY SILT FENCE/ LIMITS OF CONSTRUCTION
- STABILIZED ENTRANCE
- 100YR — 100 YEAR FEMA FLOOD PLAIN
- TCEQ WQBZ — TCEQ WATER QUALITY BUFFER ZONE
- DS WQBZ — DRIPPING SPRINGS WATER QUALITY BUFFER ZONE
- FM — FORCEMAIN
- UGE — UGE — UGE — UGE — UNDERGROUND ELECTRIC LINE
- W — W — W — W — WATER LINE

EROSION AND SEDIMENTATION CONTROL NOTES:

1. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS STABILIZE BY REVEGETATION, MULCH, TARP, OR REVEGETATION MATTING.
2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN-COMPLIANCE WITH RULES AND REGULATIONS.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. NO SPOILS ARE PERMITTED TO BE STOCKPILED OVERNIGHT UNLESS STORED ON THE UPGRADIENT SIDE OF THE TRENCH. IF SPOILS ARE STORED ON THE DOWNGRADIENT SIDE OF THE TRENCH, TRENCHES MUST BE BACKFILLED WITH SPOIL MATERIAL DAILY.
6. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.

REV	DESCRIPTION	DATE	APR

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

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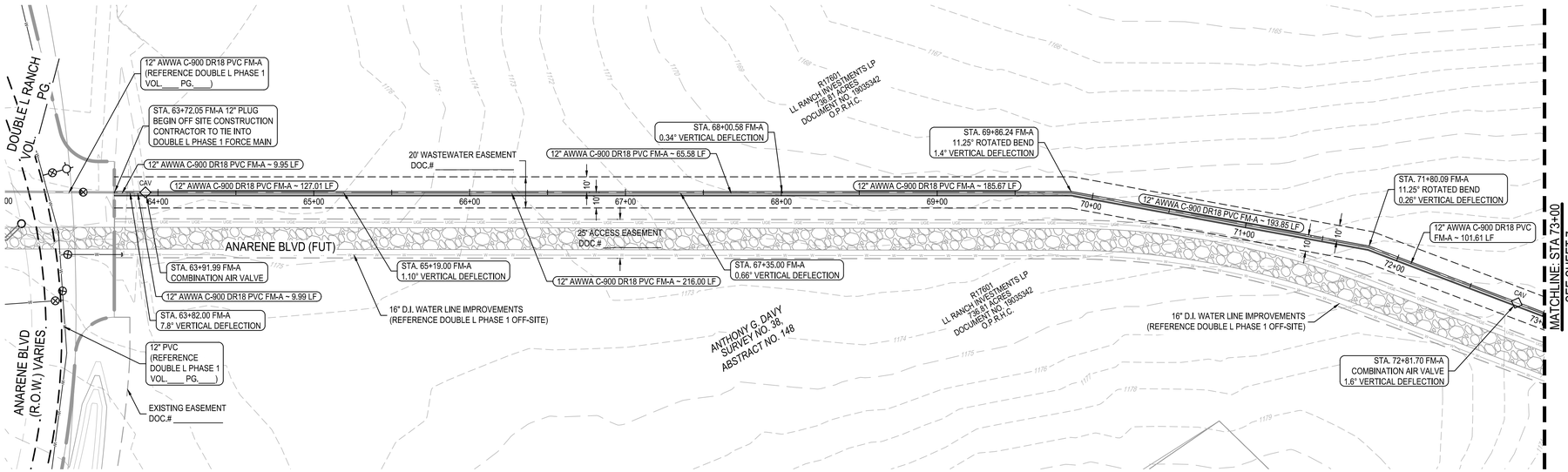
TEL: 512-879-0400 www.bgeinc.com

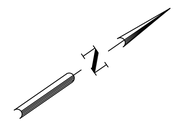
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

OVERALL AND EROSION CONTROL PAN

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
5 OF 10





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

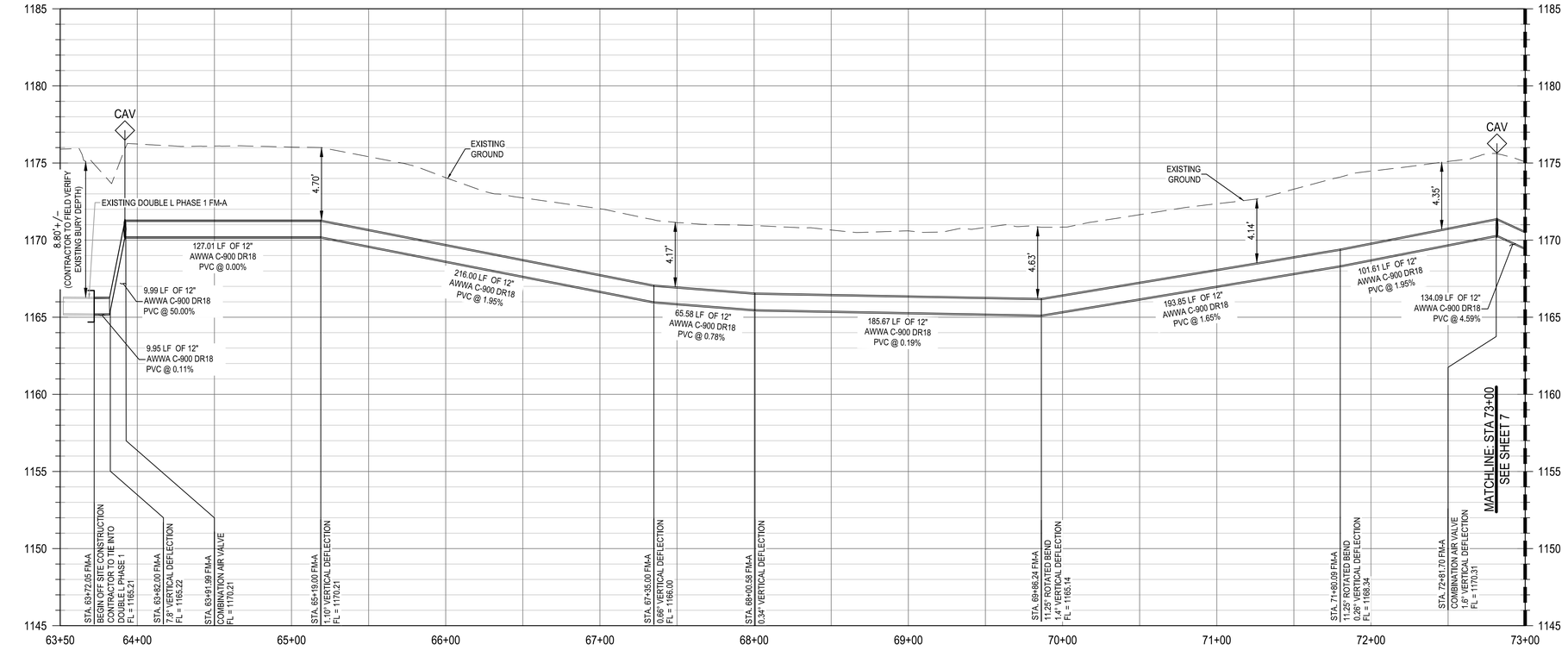
0 20' 40' 80'

SCALE: 1" = 40'

LEGEND

- PROPOSED BOUNDARY
- EXISTING PROPERTY LINE
- EASEMENT LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- WATER LINE
- WASTEWATER LINE
- FORCE MAIN LINE
- UNDERGROUND ELECTRIC LINE
- WATER LINE
- 100 YEAR FEMA FLOOD PLAIN
- TCEQ WATER QUALITY BUFFER ZONE
- DRIPPING SPRINGS WATER QUALITY BUFFER ZONE
- GATE VALVE
- FIRE HYDRANT ASSEMBLY
- CAP
- COMBINATION AIR VALVE (CAV)
- WASTEWATER - WATER LINE CROSSING (SEE DETAIL SHEET10)
- GRAVEL ROAD

FM-A



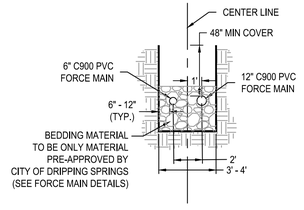
0 20' 40' 80'

HOR. SCALE: 1" = 40'

VER. SCALE: 1" = 4'

FORCE MAIN NOTES:

1. THE FORCE MAIN SHALL BE LAID WITH 48-INCHES MINIMUM COVER.
2. THE FORCE MAIN SHALL BE AWWA C-900 DR18 PVC PIPE, GREEN WITH STRIPES, OR BAGGED WITH A BAG LABELED FORCE MAIN.
3. THE FORCE MAIN SHALL HAVE JOINT RESTRAINT INSTALLED PER THE TABLE AND NOTES ON SHEET 10.
4. ALL AIR RELEASE VALVES SHALL BE COMBINATION AIR RELEASE VALVES, ARI D-025 OR EQUAL PER THE DETAIL ON SHEET 10.



TYPICAL FORCE MAIN TRENCH DETAIL
(FOR PARALLEL INSTALLATION WHERE APPLICABLE)
N.T.S.

APR	DATE	DESCRIPTION	REV

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

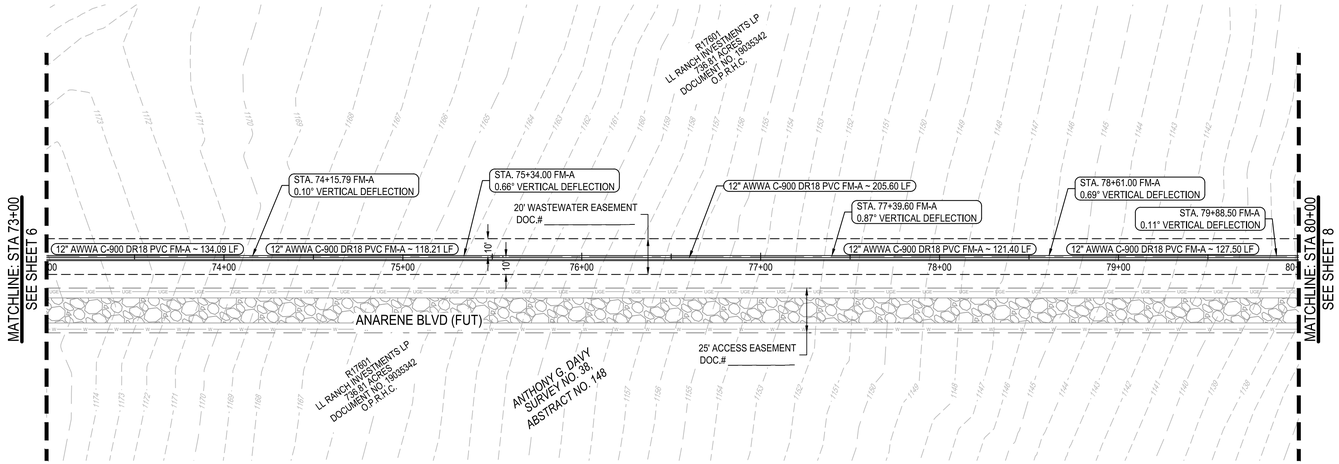
BGE, INC.
1701 Directors Blvd, Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

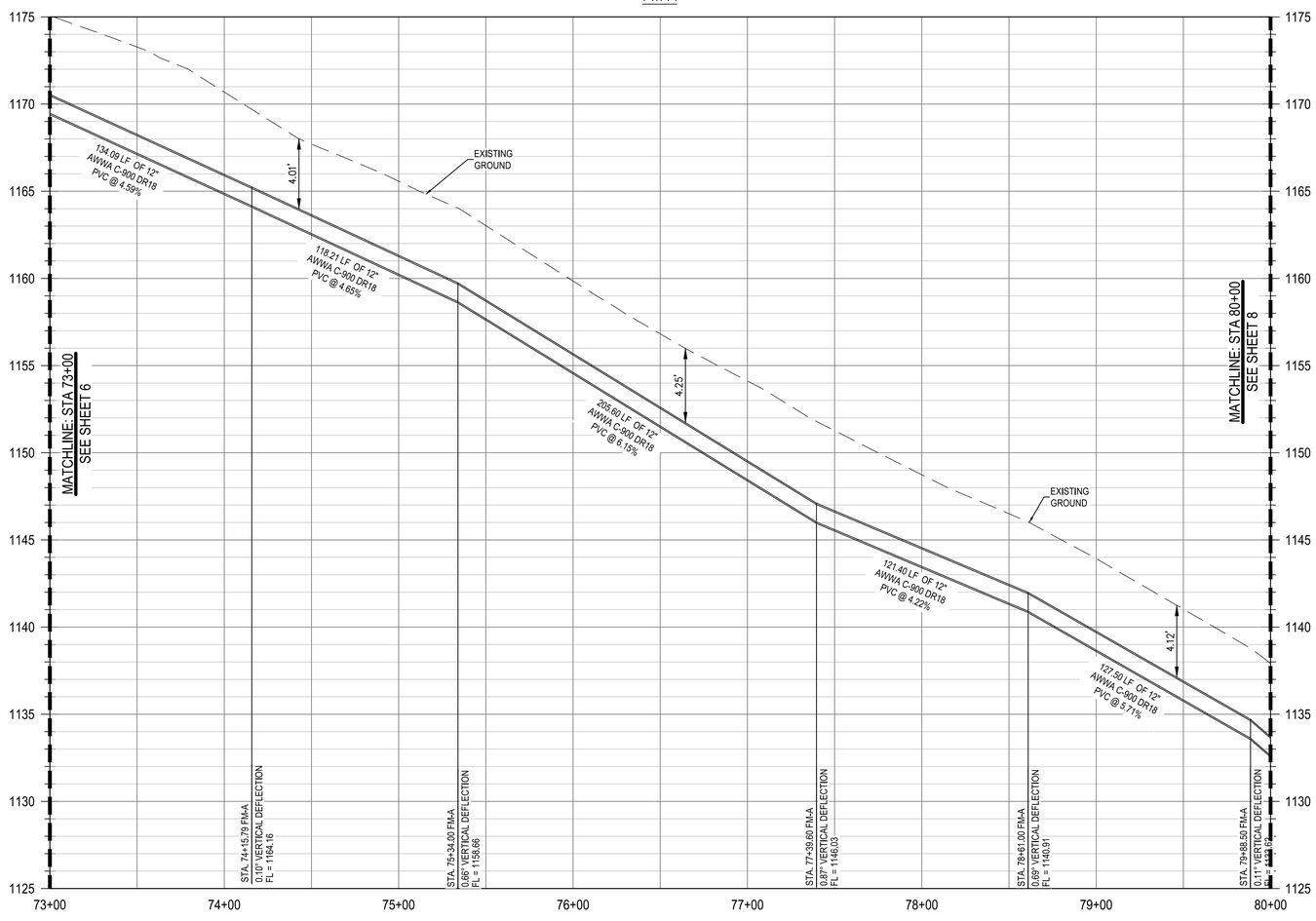
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

FM-A STA 64+00 TO 73+00.00

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
6 OF 10





0 20' 40' 80'
HOR. SCALE: 1" = 40'
VER. SCALE: 1" = 4'

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

0 20' 40' 80'
SCALE: 1" = 40'

LEGEND

- PROPOSED BOUNDARY
- EXISTING PROPERTY LINE
- EASEMENT LINE
- EXISTING MAJOR CONTOUR (XXX)
- EXISTING MINOR CONTOUR
- W — W — WATER LINE
- WW — WW — WASTEWATER LINE
- FORCE MAIN LINE
- UGE — UGE — UGE — UGE — UNDERGROUND ELECTRIC LINE
- W — W — W — W — W — WATER LINE
- 100YR — 100 YEAR FEMA FLOOD PLAIN
- TCEQ WQBZ — TCEQ WQBZ — TCEQ WATER QUALITY BUFFER ZONE
- DS WQBZ — DS WQBZ — DRIPPING SPRINGS WATER QUALITY BUFFER ZONE
- GATE VALVE
- FIRE HYDRANT ASSEMBLY
- CAP
- CAV — COMBINATION AIR VALVE (CAV)
- WASTEWATER - WATER LINE CROSSING (SEE DETAIL SHEET10)
- GRAVEL ROAD

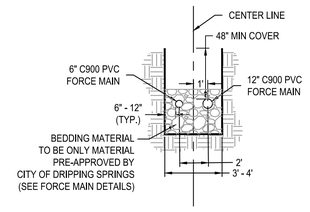
FORCE MAIN NOTES:

1. THE FORCE MAIN SHALL BE LAID WITH 48-INCHES MINIMUM COVER.

2. THE FORCE MAIN SHALL BE AWWA C-900 DR18 PVC PIPE, GREEN WITH STRIPES, OR BAGGED WITH A BAG LABELED FORCE MAIN.

3. THE FORCE MAIN SHALL HAVE JOINT RESTRAINT INSTALLED PER THE TABLE AND NOTES ON SHEET 10.

4. ALL AIR RELEASE VALVES SHALL BE COMBINATION AIR RELEASE VALVES, ARI D-025 OR EQUAL PER THE DETAIL ON SHEET 10.



TYPICAL FORCE MAIN TRENCH DETAIL
(FOR PARALLEL INSTALLATION WHERE APPLICABLE)
N.T.S.

REV	DESCRIPTION	DATE	APR

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

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TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

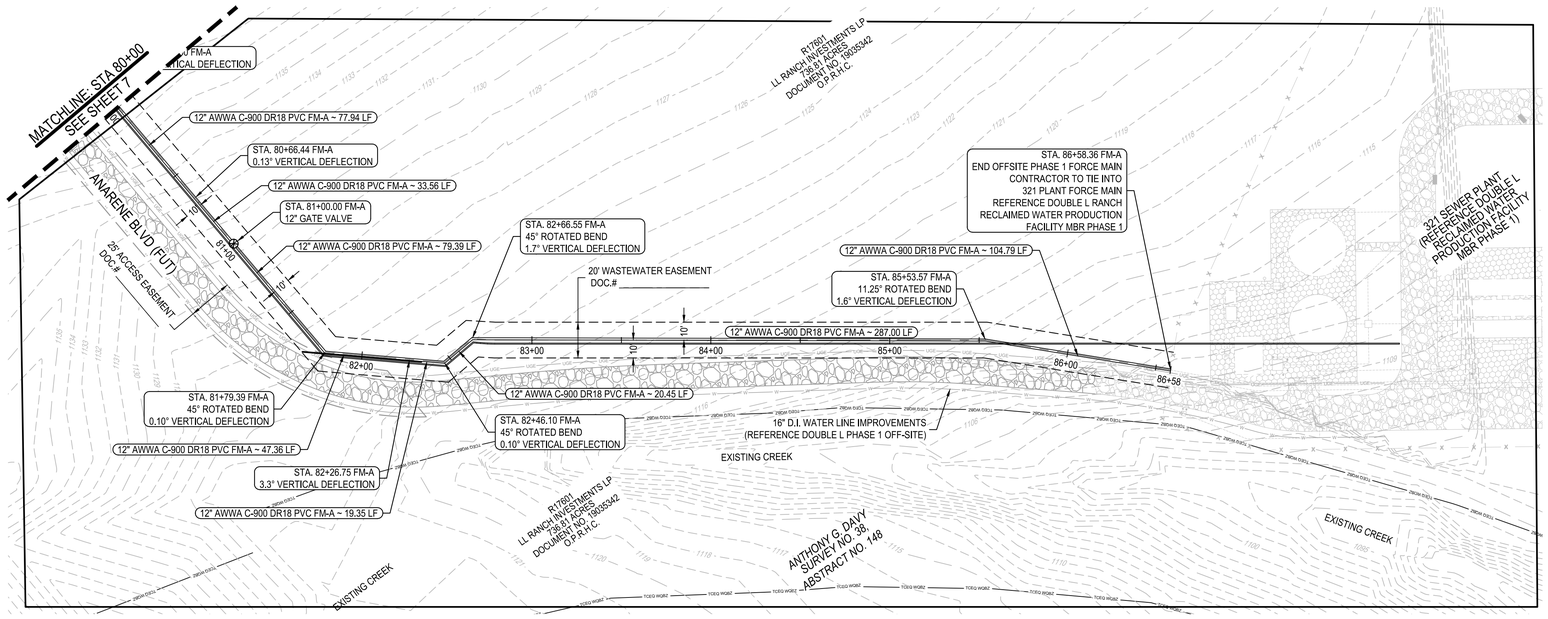
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

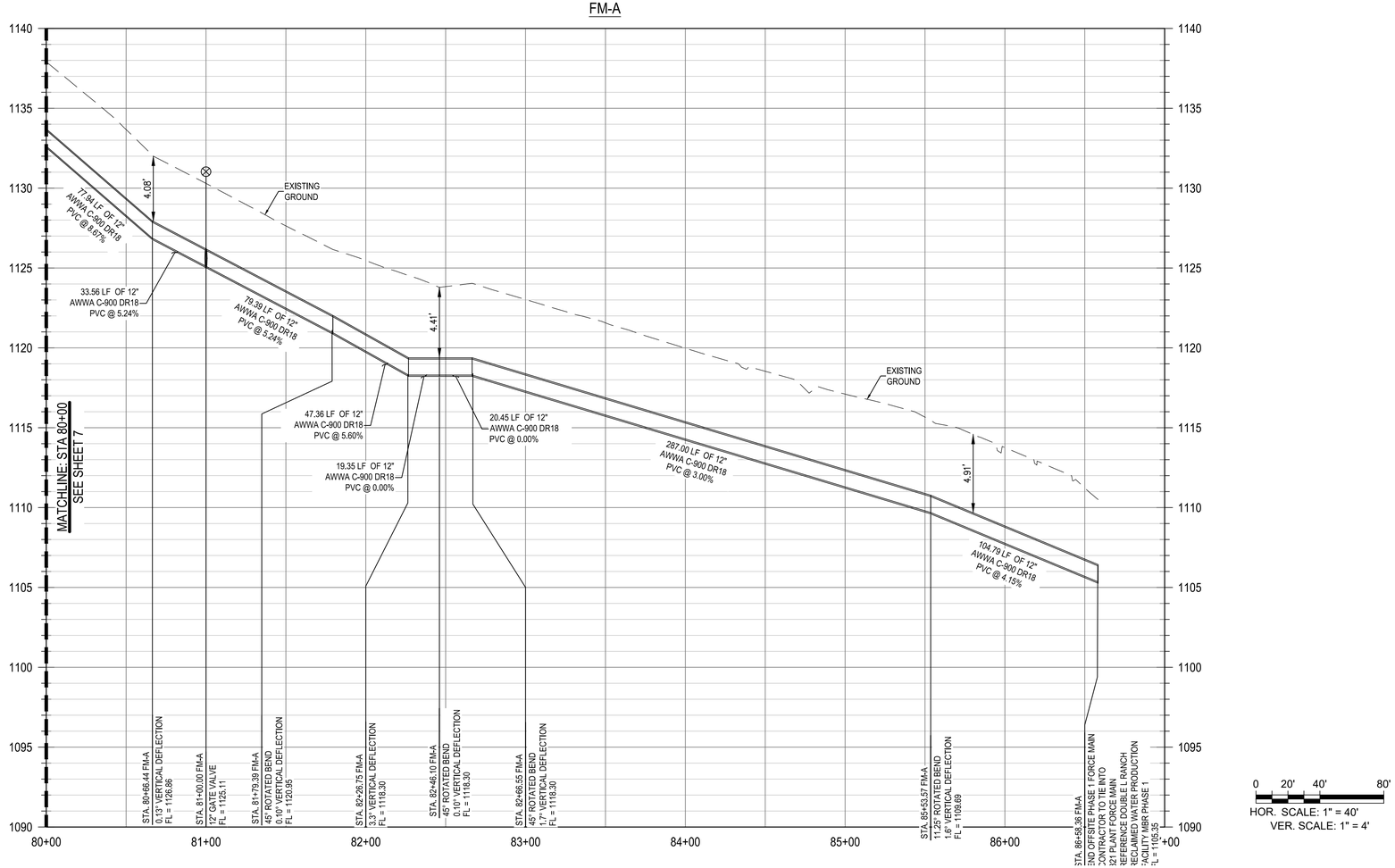
FM-A STA 73+00 TO 80+00

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

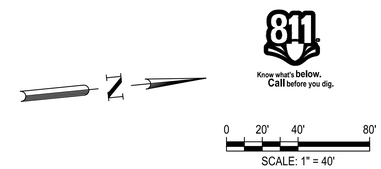
SHEET
7 OF 10

G:\TX\C\Projects\Trend_Development\Double LL_ Phase 1\03_CADD\01_SHTS\Phase 1 Offsite\Force Main\C-SP-WW P&P FM-A DL-PH1.dwg Layout: FM-A STA 73+00 TO 80+00 Plotted: 8/25/2025 1:23:01 PM





HOR. SCALE: 1" = 40'
VER. SCALE: 1" = 4'



LEGEND

- PROPOSED BOUNDARY
- EXISTING PROPERTY LINE
- EASEMENT LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- WATER LINE
- WASTEWATER LINE
- FORCE MAIN LINE
- UNDERGROUND ELECTRIC LINE
- WATER LINE
- 100 YEAR FEMA FLOOD PLAIN
- TCEQ WATER QUALITY BUFFER ZONE
- DRIPPING SPRINGS WATER QUALITY BUFFER ZONE
- GATE VALVE
- FIRE HYDRANT ASSEMBLY
- CAP
- COMBINATION AIR VALVE (CAV)
- WASTEWATER - WATER LINE CROSSING (SEE DETAIL SHEET10)
- GRAVEL ROAD
- FENCE LINE

FORCE MAIN NOTES:

1. THE FORCE MAIN SHALL BE LAID WITH 48-INCHES MINIMUM COVER.

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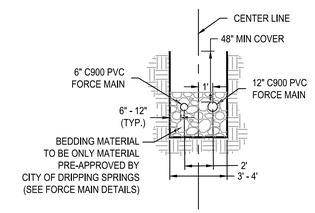

TYPICAL FORCE MAIN TRENCH DETAIL
(FOR PARALLEL INSTALLATION WHERE APPLICABLE)
N.T.S.

REV	DESCRIPTION	DATE	APR

DESIGNED BY:
REVIEWED BY:
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TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

FM-A STA 80+00 TO END

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
8 OF 10

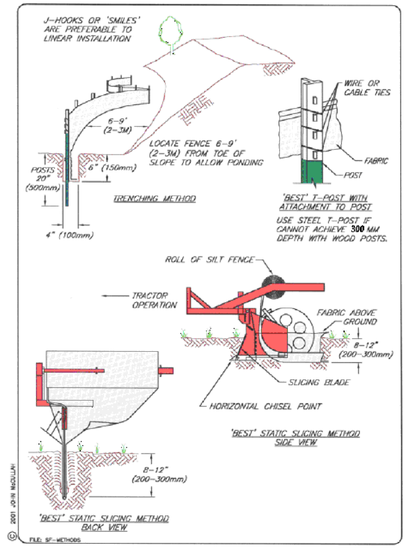


Figure 1.4-D Silt Fence Installation

Figure 1.4-F Silt Fence Typical Placement – Two Slopes

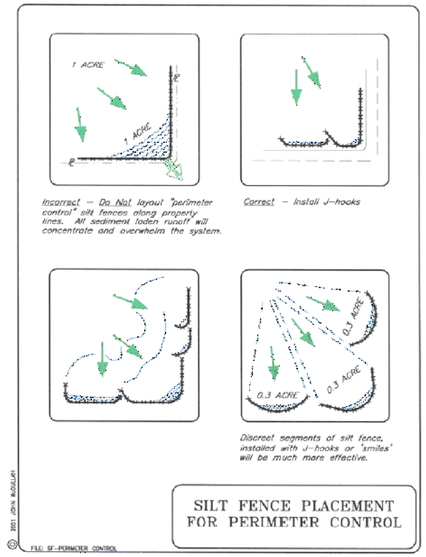
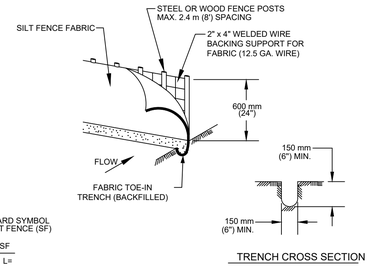


Figure 1.4-G Silt Fence Placement for Perimeter Control



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

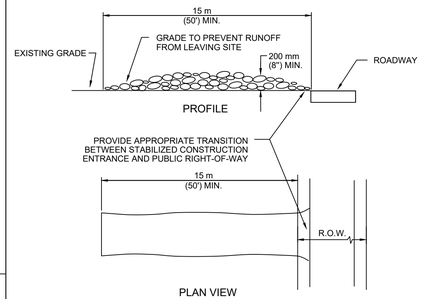
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

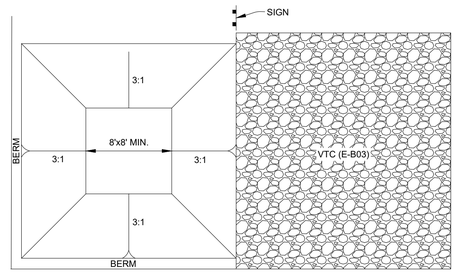
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1	

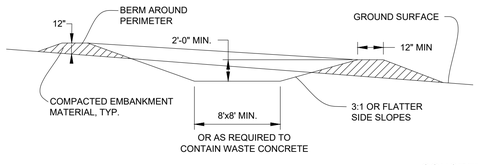


NOTES:
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1	



SECTION A
N.T.S



N.T.S.
SECTION B

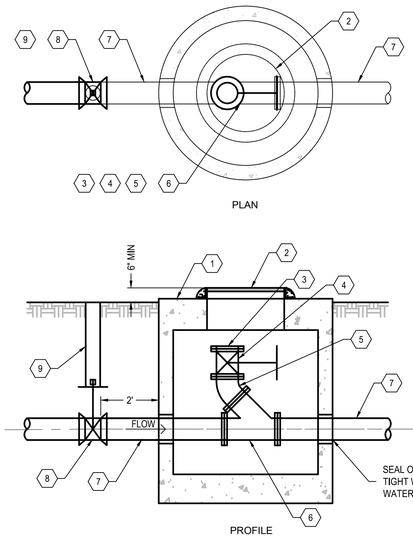
CONCRETE WASHOUT AREA

CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SELECT A SUITABLE LOCATION FOR CONCRETE WASHOUT AREA(S). (TO BE PLACED A MINIMUM OF 100' FROM DRINAGEWAYS, BODIES OF WATER, AND INLETS.)
2. LOCATION FOR CONCRETE WASHOUT SHALL BE ADDED TO APPROVED SWP3 KEPT ON SITE.
3. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
4. VEHICLE TRACKING CONTROL (VTC E-B03) IS REQUIRED AT THE ACCESS POINT.
5. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
6. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EQUIPMENT LIST

1. Ø5' FLAT TOP MANHOLE
2. 32" RING & COVER
3. 12" DIP BLIND FLANGE
4. 12" GATE VALVE (FLANGED)
5. 12" DIP 45° BEND (FLANGED)
6. 12" DIP WYE (FLANGED)
7. 12" DIP FLANGE & PLAIN END
8. 12" GATE VALVE MJ
9. VALVE CASTING

NOTES:
1. THE MJ GATE VALVE GOES ON THE UPSTREAM SIDE OF THE CLEANOUT.
2. INSTALL THE MJ GATE VALVE PER THE STANDARD GATE VALVE DETAIL.
3. INSTALL CLEANOUT IN A STANDARD 5' DIAMETER FLAT TOP WASTEWATER MANHOLE.
4. ALL PIPE AND FITTINGS USED IN THE CLEANOUT ARE FLANGED DUCTILE IRON (AWWA C150 CL 350 AND AWWA C110 OR C153) AND MATCH THE LINE SIZE.
5. INSTALL THE CLEANOUT SO THAT IT IS FULLY ACCESSIBLE THROUGH THE MANHOLE COVER.

FORCE MAIN CLEAN OUT DETAIL
(NTS)

FORCE MAIN MECHANICAL JOINT RESTRAINT

THE MECHANICAL JOINT RESTRAINT REQUIRED WAS CALCULATED USING THE EBAA IRON RESTRAINT LENGTH CALCULATOR, VERSION 7.1.3 WITH PVC PIPE, CH WITH GRANULAR FILL SOILS, A 1.5 FACTOR OF SAFETY, TRENCH TYPE 5, THE COVER PER THE TABLE AND A TEST PRESSURE OF 200 PSI. IF THE CONDITIONS IN THE FIELD VARY FROM THIS OR AREN'T FOUND IN THE TABLE BELOW, CONTACT THE ENGINEER FOR THE REQUIRED RESTRAINT.

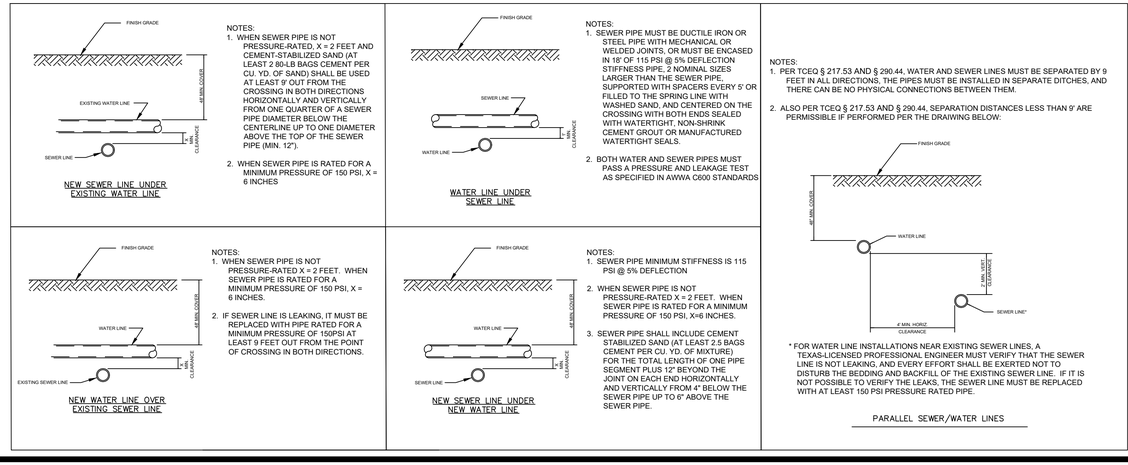
MECHANICAL JOINT RESTRAINT SHALL BE PROVIDED FOR THE DISTANCES GIVEN ON EITHER SIDE OF THE FITTING. VERTICAL OFFSETS SHALL HAVE ALL JOINTS RESTRAINED BETWEEN THE PAIR OF FITTINGS. TEES SHALL HAVE RESTRAINT ON THE RUN SIDES OF THE FITTING AND FOR THE LENGTH GIVEN ON THE BRANCH. VERTICAL 90 DEGREE BENDS SHALL HAVE ALL BELOW GRADE JOINTS RESTRAINED ON THE VERTICAL LINE AND THE LENGTH GIVEN ON THE HORIZONTAL LINE. ALL PIPE ABOVE GRADE OR IN THE VAULT OR WET WELL SHALL BE FLANGED.

HORIZONTAL BEND

SIZE	12" PVC	12" PVC		
COVER	4 FT	4 FT		
90°	29 LF	22 LF	51 LF	40 LF
45°	12 LF	9 LF	22 LF	17 LF
22½°	6 LF	5 LF	11 LF	8 LF
11¼°	3 LF	3 LF	6 LF	4 LF

VERTICAL BENDS/OFFSETS

SIZE	12" PVC	12" PVC		
COVER	4 FT	4 FT		
90°	78 LF	59 LF	143 LF	110 LF
45°	32 LF	25 LF	60 LF	46 LF
22½°	16 LF	12 LF	29 LF	22 LF
11¼°	8 LF	6 LF	15 LF	11 LF
SIZE	12" PVC	12" PVC		
COVER	4 FT	4 FT		
GV/CO/END	78 LF	59 LF	143 LF	110 LF



REV	DESCRIPTION	DATE	APR

DESIGNED BY:
REVIEWED BY:
DRAWN BY:

BGE, INC.
1701 Directors Blvd, Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL: 512-879-0400 www.bgeinc.com

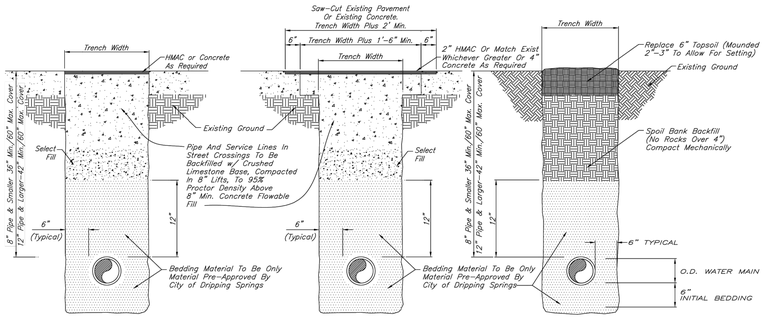
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

FORCE MAIN DETAILS (1 OF 2)

STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
9 OF 10

G:\TXC\Projects\Trend_Development\Double LL_Phase 1\03_CADD\01_SHTS\Phase 1 Offsite\Force Main\C-SP-WW DETAILS.dwg Layout: FORCE MAIN DETAILS (1 OF 2) Plotted: 8/25/2025 1:24:29 PM

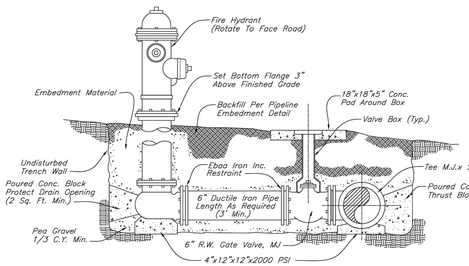


TRENCH BACKFILL CROSSING A PROPOSED PAVED DRIVE, STREET OR WITHIN 4 FEET OF EDGE OF STREET PAVEMENT

TRENCH BACKFILL CROSSING A PAVED DRIVE, STREET OR WITHIN 4 FEET OF EDGE OF STREET PAVEMENT

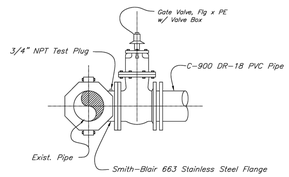
TRENCH BACKFILL IN AREAS GREATER THAN 4 FEET FROM EDGE OF STREET PAVEMENT

PIPELINE EMBEDMENT

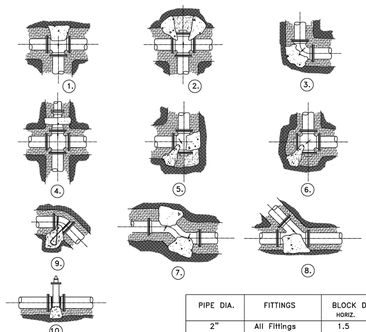


NOTES
1. Face of Fire Hydrant to be 3' from back of curb on streets with 6" curb and gutter, unless otherwise noted.
2. Face of Fire Hydrant to be 10' from back of ribbon/rolled curb on streets with ribbon/rolled curb, unless noted otherwise.
3. Fire hydrant should not be in conflict with sidewalks, curb ramps, or any other improvements.
4. Hydrants require 5 1/4 Storz connection.

FIRE HYDRANT ASSEMBLY



TAPPING SLEEVE AND VALVE

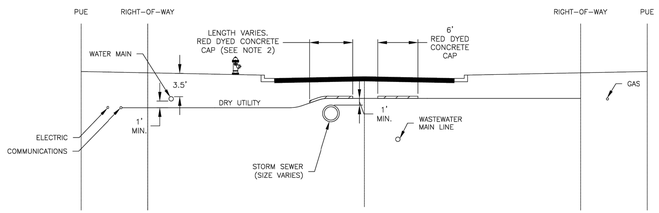


NOTES:
1. Thru Line Connection,Tee
2. Thru Line connection, Cross Used As Tee
3. Directional Change, Elbow
4. Change Line Size, Reducer
5. Direction Change, Tee Used As Elbow
6. Direction Change, Cross Used AS Elbow
7. Direction Change
8. Thru Line Connection
9. Valve Anchor
10. Direction Change Vertical, Bend Anchor

PIPE DIA.	FITTINGS	BLOCK DIMENSION HORIZ.	VERT.
2"	All Fittings	1.5	2.0
4"	All Fittings	1.5	2.0
6"	Tee,Cross,Valve	1.5	1.5
6"	90° Bend	1.5	2.0
8"	Tee,Cross,Valve	2.0	2.0
8"	90° Bend	2.0	2.5
12"	Tee,Valve	3.0	3.0
12"	90° Bend	4.5	2.5
12"	45° Bend	2.5	2.5

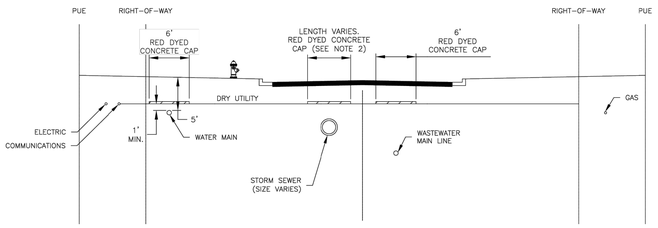
NOTE: Each Mechanical Joint Fitting And Gate Valves Shall Have Ebaa Iron Inc. Restraint.

TYPICAL THRUST BLOCKING



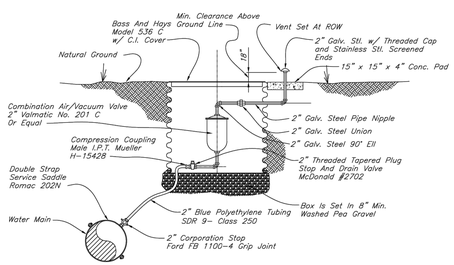
DRY UTILITY LOCATION – WATER LINE DEPTH LESS THAN 5'

NOTES:
1. DETECTABLE WARNING TAPE SHOULD BE PLACED ON ALL DRY UTILITY MAIN LINES AND SERVICES.
2. CONCRETE CAP SHOULD BE EXTENDED 2' OUTSIDE THE STORM SEWER.
3. ANY TIME A DRY UTILITY CROSSES OVER A CITY UTILITY A RED DYED CONCRETE CAP IS REQUIRED, THE LENGTH OF THE CAP SHOULD BE AS REFERENCED IN THIS DETAIL.
4. PROPOSED GAS AND ELECTRIC UTILITY CONSTRUCTION PLANS SHOULD BE SUBMITTED TO THE CITY AND APPROVED PRIOR TO CONSTRUCTION OF THOSE UTILITIES.



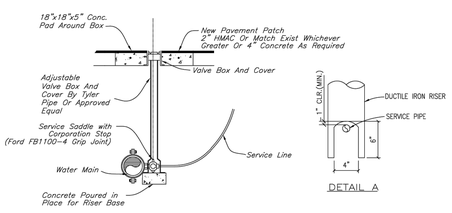
DRY UTILITY LOCATION – WATER LINE DEPTH OF 5' OR LARGER

NOTES:
1. DETECTABLE WARNING TAPE SHOULD BE PLACED ON ALL DRY UTILITY MAIN LINES AND SERVICES.
2. CONCRETE CAP SHOULD BE EXTENDED 2' OUTSIDE THE STORM SEWER.
3. ANY TIME A DRY UTILITY CROSSES OVER A CITY UTILITY A RED DYED CONCRETE CAP IS REQUIRED, THE LENGTH OF THE CAP SHOULD BE AS REFERENCED IN THIS DETAIL.
4. PROPOSED GAS AND ELECTRIC UTILITY CONSTRUCTION PLANS SHOULD BE SUBMITTED TO THE CITY AND APPROVED PRIOR TO CONSTRUCTION OF THOSE UTILITIES.



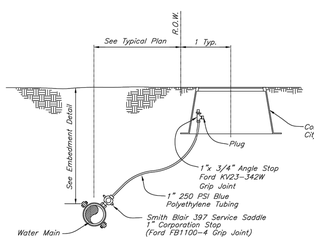
COMBINATION AIR/VACUUM VALVE

COMBINATION AIR/VACUUM VALVE NOTES:
1. Combination Air/Vacuum Valves shall be located as per plans at the highest point of the line.
2. Air Release Vault shall be 32" corrugated metal with steel lid.



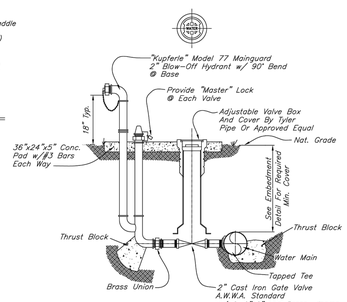
CORPORATION STOP UNDER PAVEMENT

NOTES
1. THIS RISER SHOULD BE INSTALLED ANYTIME THE CORPORATION STOP IS LOCATED UNDER PAVEMENT.
2. RISER PIPE SHALL HAVE A PASS THROUGH FOR THE SERVICE LINE. THIS CAN BE FIELD CUT OR MANUFACTURED TO FIT.
3. CONTRACTOR TO SIZE PASS THROUGH TO KEEP BACKFILL FROM MIGRATING INTO RISER PIPE. SEE DETAIL A FOR DIMENSIONS. CONTRACTOR SHALL USE 8 MIL POLY SHEETING TO WRAP SADDLE AND CORPORATION STOP (MAKE INSPECTION CHECK TO APPROPRIATE INSPECTOR).
4. CORPORATION STOP OPERATION NUT SHOULD BE POINTED STRAIGHT UP.
5. RISER SHALL BE PLACED TO PROVIDE ACCESS TO OPERATING NUT.



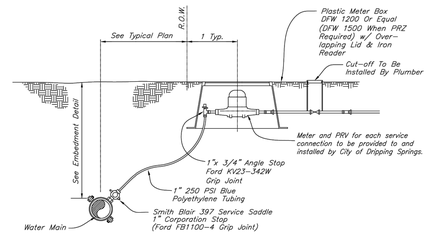
Note: Install one sampling site per subdivision phase. Sampling site should be located in a common area or corner lot.

SAMPLING PORT



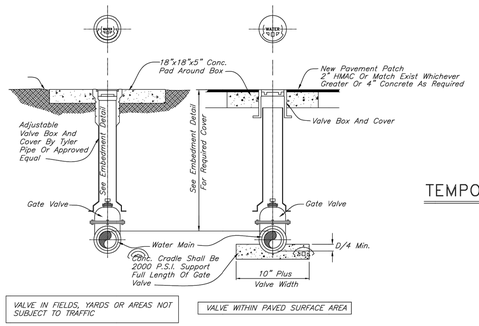
NOTE: Thrust Blocking Shall Be Placed In A Manner Not To Plug Integral Weep Hole

FLUSH VALVE



NOTE: All water services should be flat to rising.

RESIDENTIAL WATER SERVICE CONNECTION



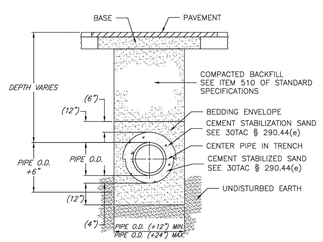
VALVE IN FIELDS, YARDS OR AREAS NOT SUBJECT TO TRAFFIC

VALVE WITHIN PAVED SURFACE AREA

NOTE: Gate valves should not be located in curbs or sidewalks.

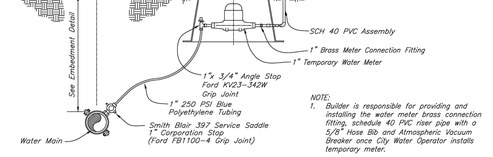
GATE VALVE & BOX

N.T.S



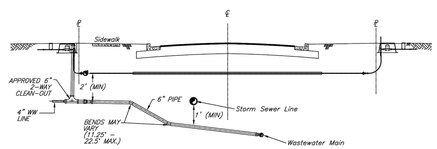
WATER AND WASTEWATER CROSSING OVER EXCAVATION TRENCH DETAIL

NOTES:
1. WHEN CEMENT STABILIZED SAND IS USED, THE TRENCH SHALL BE OVER EXCAVATED BY 12 INCHES TO PROVIDE A MINIMUM OF 12 INCHES OF GRAVEL BELOW THE CEMENT STABILIZED SAND TO ALLOW FOR GROUND WATER FLOW THROUGH TRENCHES.
2. OVER EXCAVATION SHALL EXTEND 5 FEET BEYOND THE CEMENT STABILIZED SAND ON BOTH SIDES OF THE PIPE.
3. THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30TAC § 290.44(e).



NOTE:
1. Builder is responsible for providing and installing the water meter brass connection fitting, schedule 40 PVC riser pipe with a 5/8" Hose Bib and Atmospheric Vacuum Breaker once City Water Operator installs temporary meter.

TEMPORARY RESIDENTIAL CONSTRUCTION METER CONNECTION



ALTERNATE DEEP SERVICE CONNECTION

NOTES:
1. This detail to be used when the depth of the wastewater service cleanout is greater than 6'.
2. See utility assignment cross-sections for actual utility assignments.

CITY OF DRIPPING SPRINGS
WATER/WASTEWATER DETAILS
JUNE 2024

							APR
							DATE
							DESCRIPTION
◁	◁	◁	◁	◁	◁		REV

DESIGNED BY:

REVIEWED BY:

DRAWN BY:

BGE, INC.
1701 Directors Blvd, Suite 1000
AUSTIN, TX 78744
TBPE Registration No. F-1046
TEL 512-879-0400 www.bgeinc.com

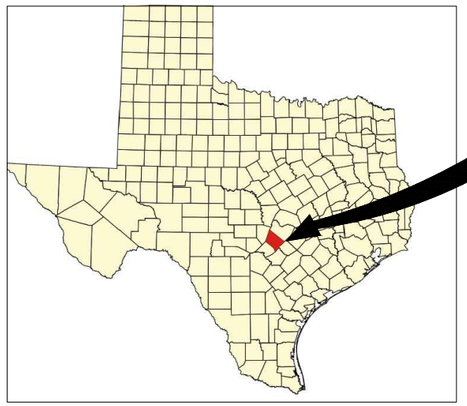
DOUBLE L RANCH, PHASE 1
"OFF-SITE" FORCE MAIN IMPROVEMENTS

FORCE MAIN DETAILS (2 OF 2)

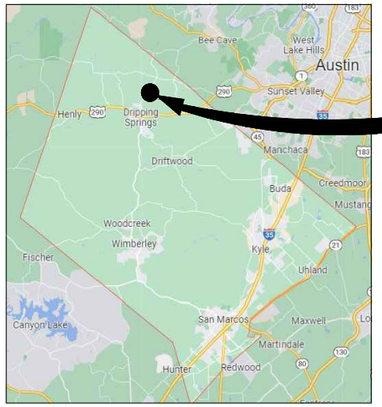
STATE OF TEXAS
STACY MULHOLLAND
146417
LICENSED PROFESSIONAL ENGINEER
09/26/2025

SHEET
10 OF 10

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
MBR PHASE 1 - 72,000 GPD

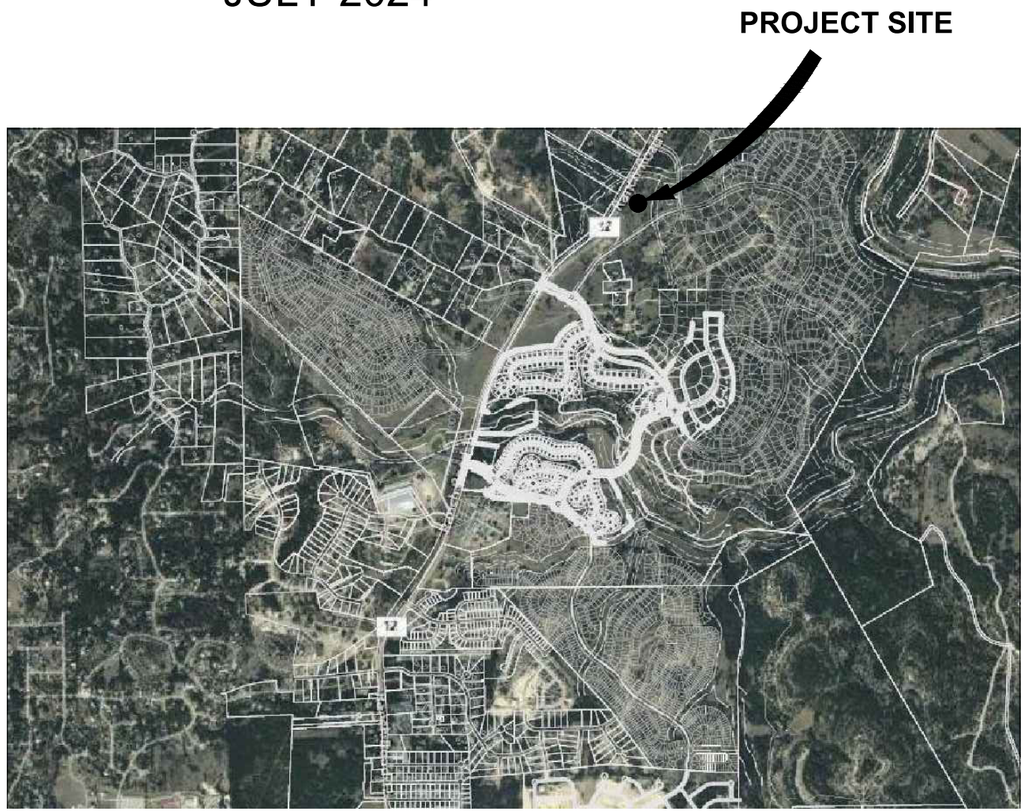


LOCATION MAP
(TEXAS STATES)
NTS



LOCATION MAP
(HAYS COUNTY)
NTS

PROJECT # 539
HAYS COUNTY,TX
TCEQ PERMIT # WQ0014488001
JULY 2024



VICINITY & PROJECT MAP
NTS

OWNER:
Hays County MUD No.7A
101 West Louis Henna Blvd Suite 400
Austin, Texas 78728

ENGINEER OF RECORD
Jeffrey M. Snyder
Integrated Water services
4001 N Valley Dr, Longmont, CO 80504
(833)-758-3338

DEVELOPMENT CIVIL ENGINEER:
Javier Castello, PE, MSCE
BGE,inc.
1701 Directors Blvd Ste 1000, Austin,TX 78744
(210)-581-7825

N

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
LICENSED
PROFESSIONAL ENGINEER
9/06/24

G-000

ABBREVIATIONS

AX	ANOXIC
AWWA	AMERICAN WATER WORKS ASSOCIATION
CBC	CONCRETE BOX CULVERT
℄ OR CL	CENTERLINE
CCC	CHLORINE CONTACT CHAMBER
CCN	CERTIFICATE OF CONVENIENCE AND NECESSITY
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CIP	CLEAN-IN-PLACE
CO	CLEANOUT
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DIMENSION RATIO
I.E.	FOR EXAMPLE
EQ	EQUALIZATION
FFE	FINISH FLOOR ELEVATION
FGL	FINISH GROUND LEVEL
FIG	FIGURE
FL	FLANGE
FM	FLOW METER
FNPT	FEMALE NATIONAL PIPE THREAD
GAL	GALLON
GALV	GALVANIZED
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
I.D.	INNER DIAMETER
KW	KILOWATT
LF	LINEAR FEET
LS	LIFT STATION
MAX	MAXIMUM
MA	MILLIAMP (ONE THOUSANDTH OF AN AMP)
MBR	MEMBRANE BIOREACTOR
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
NGS	NATIONAL GEODETIC SURVEY
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM - EPA
NTS	NOT TO SCALE
O.D.	OUTER DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PA	PRE-AERATION
PE	POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RE	ROAD EDGE
ROW	RIGHT OF WAY
RPZ	REDUCED PRESSURE ZONE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SHT	SLUDGE HOLDING TANK
SPECS	SPECIFICATIONS
ST	SLUDGE TRANSFER
STD	STANDARD
SPU	SUPPLEMENTAL PROCESS UNIT
TBD	TO BE DETERMINED
TOC	TOP OF CONCRETE
USBOR	UNITED STATES BUREAU OF RECLAMATION
WAS	WASTE ACTIVATED SLUDGE
W.S.E.	WATER SURFACE ELEVATION
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT
XFER	TRANSFER

LEGEND

- WASTEWATER TREATMENT EASEMENT
- EXISTING FLOODPLAIN
- EXISTING WATER (W)
- EXISTING SANITARY SEWER (S)
- EXISTING FORCE MAIN (FM)
- EXISTING MAJOR CONTOUR (1400)
- EXISTING MINOR CONTOUR
- MAJOR CONTOUR (1500)
- MINOR CONTOUR
- CHAIN LINK FENCE (X)
- WATER LINE (W)
- SANITARY SEWER (S)
- FORCE MAIN (FM)
- PLANT DRAIN (PD)
- EFFLUENT LINE (EF)
- ODOR CONTROL AIR PIPING (OD)
- EQUALISATION LINE (EQ)
- WASTE ACTIVATED SLUDGE (WAS) LINE (WAS)
- AERATION LINE (AIR)
- POTABLE WATER (PW)
- NPW LINE (NPW)
- EXISTING UNDERGROUND FIBER OPTIC (FO)
- UNDER GROUND ELECTRICAL LINE (UGE)
- EXISTING OVERHEAD ELECTRIC (OHE)
- PROCESS PIPING
- PROCESS PIPING (UNDER GROUND)
- FUTURE PROCESS PIPING
- FUTURE PROCESS PIPING (UNDER GROUND)

- EXISTING POWER POLE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING VALVE
- EXISTING WATER METER
- SPRINKLER HEAD
- SPOT ELEVATION (×625.00)
- CAP
- BOLLARD
- VALVE
- HYDRANT
- WATER METER
- SANITARY MANHOLE
- CATCH BASIN
- FLOW METER (FM)
- FLOW DIRECTION
- PAD PENETRATION
- AC ASPHALTIC CONCRETE
- CONCRETE
- AGGREGATE BASE (FLEX BASE)
- SUB-BASE (SELECT FILL)
- COMPACTED SUB-GRADE
- FINISHED GRADE
- SAND FILL
- GRAVEL

GENERAL CONVENTIONS

SYMBOL	DESCRIPTION
1 TITLE A101|A201 SCALE: 1/8" = 1'-0"	TITLE DENOTES AN ELEVATION, SECTION, OR DETAIL VIEW LAYOUT A201 WHICH HAS A BACK REFERENCE ON SHEET A101)
1 TYP A101 | A301	CALLOUT DENOTES A CUT SECTION TYPICAL REFERENCE (THIS EXAMPLE OCCURS ON SHEET A101 REFERENCING SECTION No. 1 ON SHEET A301)
1 A101 | A401	CALLOUT DENOTES AN ELEVATION REFERENCE (THIS EXAMPLE OCCURS ON SHEET A101 REFERENCING ELEVATION No. 1 ON SHEET A201)
D05 2200-001	CALLOUT DENOTES A STANDARD DETAIL REFERENCE
1	CALLOUT DENOTES A KEYED NOTE REFERENCE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
LEGEND

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder — JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER — 9/06/24

G-001

SHEET LIST TABLE		
SEQ	SHEET NUMBERS	SHEET TITLE
1	G-000	COVER, LOCATION, TITLE SHEET
2	G-001	LEGEND
3	G-002	INDEX
4	G-003A	GENERAL NOTES
5	G-003B	GENERAL NOTES
6	G-003C	GENERAL NOTES
7	G-004	PROCESS FLOW DIAGRAM
8	G-005A	RECLAIMED WATER TREATMENT PLANT HYDRAULIC PROFILE
9	G-005B	RECLAIMED WATER PUMP STATION HYDRAULIC PROFILE
10	C-001	SITE PLAN - PROPOSED CONDITION
11	C-002	SITE LAYOUT - FINAL BUILDOUT
12	C-003	SITE PLAN - EARTHWORK
13	C-004A	PROPOSED GRADING
14	C-004B	PROPOSED GRADING
15	C-004C	PROPOSED GRADING
16	C-004D	PROPOSED GRADING
17	C-004E	PROPOSED GRADING
18	C-004F	PROPOSED GRADING
19	C-004G	PROPOSED GRADING
20	C-005A	DIMENSIONAL CONTROL PLAN
21	C-005B	DIMENSIONAL CONTROL PLAN
22	C-006	PIPE SCHEDULE
23	C-007A	YARD PIPING PLAN
24	C-007B	YARD PIPING PLAN
25	C-007C	YARD PIPING PLAN
26	C-007D	YARD PIPING PLAN
27	C-008A	SWPP DETAILS
28	C-008B	SWPP DETAILS
29	C-008C	SWPP DETAILS
30	C-901	MISCELLANEOUS DETAILS
31	C-902	MISCELLANEOUS DETAILS
32	C-903	MISCELLANEOUS DETAILS
33	M-001	BLUBOX BOX MBR
34	M-002	PLANT DRAIN LIFT STATION
35	M-003	PRIMARY SCREEN
36	M-004	EQUALIZATION TANK

SHEET LIST TABLE		
SEQ	SHEET NUMBERS	SHEET TITLE
37	M-005A	SLUDGE HOLDING TANK
38	M-005B	SLUDGE HOLDING TANK
39	M-005C	SLUDGE HOLDING TANK
40	M-005D	SLUDGE HOLDING TANK
41	M-005E	SLUDGE HOLDING TANK
42	M-005F	SLUDGE HOLDING TANK
43	M-006A	RECLAIMED WATER STORAGE TANK
44	M-006B	RECLAIMED WATER STORAGE TANK
45	M-007	EQUIPMENT SKID
46	M-008	SLUDGE TRANSFER PUMP SKID
47	M-009A	CHLORINE RESIDUAL ANALYZER
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INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
INDEX

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

G-002

GENERAL NOTES:

1. A COPY OF THE APPROVED PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES DURING WORKING HOURS.
2. THE CONTRACTOR SHALL ACQUIRE A WORK PERMIT AND/OR ANY REQUIRED PERMITS PRIOR TO COMMENCING WORK.
3. IN THE EVENT THAT THE CONTRACTOR ENCOUNTERS ITEMS OF HISTORICAL IMPORTANCE, THE CLIENT REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY AND WORK IN THE AREA SHALL IMMEDIATELY CEASE UNTIL THE SITE CAN BE PROPERLY CLEARED.
4. ALL WORK IN THE VICINITY OF LIVE STREAMS, WATER IMPOUNDMENTS, WETLANDS OR IRRIGATION SUPPLIES SHALL BE COMPLETED IN SUCH A MANNER AS TO MINIMIZE VEGETATION REMOVAL, SOIL DISTURBANCE AND EROSION. CROSSINGS OF LIVE STREAMS WITH HEAVY EQUIPMENT SHALL BE MINIMIZED, AS DETERMINED BY THE ENGINEER. EQUIPMENT REFUELING, MAINTENANCE AND CEMENT DUMPING IN THE VICINITY OF WATER COURSES IS STRICTLY PROHIBITED AND SHALL BE PERFORMED IN PROPER CONTAINMENT AREAS.
5. THE CONTRACTOR, DURING CONSTRUCTION, SHALL MAINTAIN THE PROPER TRAFFIC CONTROL DEVICES IN COMPLIANCE WITH COUNTY STANDARDS/REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGN, IMPLEMENTATION, MAINTENANCE AND COUNTY APPROVAL OF ANY NECESSARY TRAFFIC CONTROL.
6. THE CONTRACTOR SHALL COORDINATE WITH OWNER TO ESTABLISH AN AREA TO STORE CONSTRUCTION DEBRIS WHERE IT WILL NOT BE NUISANCE. ALL DEBRIS SHALL BE CONTAINED IN SUCH A MANNER THAT WILL PREVENT SCATTERING. ALL DEBRIS, INCLUDING TREES AND UNDERGROWTH, SHALL BE DISPOSED OF PROPERLY. ALL DEBRIS SHALL BE REMOVED FROM SITE PRIOR TO SUBSTANTIAL COMPLETION AT OWNERS REQUEST. SEE NOTE 3 ON SHEET G-003C.
7. THE CONTRACTOR WILL BE ALLOWED TO STORE EQUIPMENT IN THE CONSTRUCTION ZONE DURING NON-WORKING HOURS.
8. THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT HORIZONTAL AND VERTICAL CONTROL SURVEY MONUMENTS FROM DAMAGE DURING CONSTRUCTION.
9. ALL NEW STRUCTURES SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING AND CLEANUP OF SPILLS ASSOCIATED WITH PROJECT CONSTRUCTION AND SHALL REPORT AND RESPOND TO SPILLS OF HAZARDOUS MATERIALS SUCH AS GASOLINE, DIESEL, MOTOR OILS, SOLVENTS, CHEMICALS, TOXIC AND CORROSIVE SUBSTANCES, AND OTHER MATERIALS WHICH MAY BE A THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT.
11. THE CONTRACTOR SHALL PREPARE "AS-BUILT" DRAWINGS AT THE CONCLUSION OF THE PROJECT. PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TWO (2) SETS OF COMPLETE AS-BUILT DRAWINGS TO THE OWNERS REPRESENTATIVE AS PER NOTE 29.
12. COMPACTION TESTING SHALL BE DONE SUCH THAT THE OWNER AND DESIGN-BUILDER CAN BE REASONABLY ASSURED THAT THE BACKFILL HAS BEEN PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND GEOTECHNICAL REPORT.
13. ANY UTILITIES FOR THIS PROJECT SHALL BE INSTALLED TO THE MINIMUM COVER AS SHOWN ON THE CONSTRUCTION DRAWINGS. THIS INCLUDES ANY CROSSING SERVICES OR LATERALS INSTALLED. EXCEPTIONS MUST BE AUTHORIZED BY THE OWNERS REPRESENTATIVE.
14. ALL INSTALLED UTILITY MAINS, LATERALS, AND SERVICES SHALL BE MARKED WITH TRACER WIRE TAPED TO TOP OF PIPE AND DETECTABLE WARNING TAPE WHERE APPLICABLE AT LEAST EIGHTEEN (18) INCHES ABOVE BURIED PIPE, AS PER SPECIFICATIONS AND THESE DRAWINGS.
15. ALL INSTALLED OR OPENED WATERLINES & MATERIALS SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
16. ALL BEDDING MATERIAL SHALL BE GRANULAR AND FREE-DRAINING, HAVE A MAXIMUM GRAIN SIZE THAT DOES NOT EXCEED 3/8 INCH PER THE SPECIFICATIONS.
17. OVER-EXCAVATION OF TRENCHES SHALL NOT BE PERFORMED UNLESS IT IS DETERMINED, TO THE SATISFACTION OF THE ENGINEER THAT THE SUBSOIL IS NOT SUITABLE FOR PIPE BEDDING AND MUST BE REPLACED WITH IMPORTED FILL.
18. BACK FILL DENSITY TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT.
19. EXCESS MATERIAL, IF APPLICABLE, SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED. OBSTRUCTIONS REMOVED FROM THE WORK AREAS SHALL BE DISPOSED OF BY THE CONTRACTOR. DISPOSAL OF USABLE MATERIALS (E.G.. EXCESS DIRT, GRAVEL, ETC.) SHALL BE AT A SITE DESIGNATED BY THE OWNER DURING CONSTRUCTION. WASTE (E.G. TRASH, BRUSH, ETC.) SHALL BE DISPOSED OF AT AN APPROVED LANDFILL.
20. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, GUIDELINES & RECOMMENDATIONS.
21. MIN SLOPE FOR ALL GRAVITY FLOW PIPING SHALL BE 1%, EXCEPT FOR PIPE CARRYING SOLIDS WHICH SHALL HAVE 2% MIN SLOPE.
22. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE APPLICABLE CODES AND STANDARDS LISTED IN THE DESIGN DOCUMENTS.
23. LOCAL PLUMBING AND ELECTRICAL CODES AS WELL AS COUNTY GUIDELINES AND REGULATIONS SHALL BE CONFORMED TO DURING THE INSTALLATION OF THIS FACILITY, AS APPLICABLE TO THE PROJECT.
24. ALL DETAILS NOTES AS 'TYP' OR TYPICAL SHALL APPLY IN GENERAL TO THE DESIGN DOCUMENTS IN ALL CASES WHERE CONDITIONS SIMILAR TO THOSE INDICATED IN THE DETAIL EXIST, UNLESS OTHERWISE NOTED.
25. THE DESIGN ENGINEER'S APPROVAL, IN WRITING, MUST BE OBTAINED FOR ALL CHANGES TO THE PROJECT. ANY MODIFICATIONS OR CHANGES MADE TO THE PROJECT, FROM THE DESIGN DOCUMENTS, NOT APPROVED IN WRITING BY THE DESIGN ENGINEER, SHALL BE THE SOLE RESPONSIBILITY AND LIABILITY OF THE PERSON MAKING THE CHANGES.
26. IMMEDIATELY NOTIFY THE DESIGN ENGINEER, IF DURING INSTALLATION, A CONDITION WHICH IS NOT INDICATED IN THE DESIGN DOCUMENTS IS DISCOVERED.
27. FINISHED CONTOURS AND/OR SPOT ELEVATIONS ARE INDICATED ON THE DESIGN DRAWINGS. LOCATION ADJUSTMENTS FOR DESIGN ELEMENTS MAY BE REQUIRED TO ACHIEVE THE DESIGN INTENT, DEPENDING ON THE NATURE OF CONDITIONS UNCOVERED DURING EXCAVATION. CONSULT THE DESIGN ENGINEER PRIOR TO ADJUSTING THE DESIGN ELEMENTS.
28. THE CONTRACTOR SHALL CONTROL BOTH SURFACE AND GROUND WATER TO ENSURE THAT NEITHER INTERFERE WITH CONSTRUCTION OR NEGATIVELY AFFECT THE INSTALLATION OF THE IMPROVEMENTS, OR EXISTING IMPROVEMENTS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE PUMPS AND PIPING ON THE SITE, DURING CONSTRUCTION TO ADEQUATELY CONTROL SURFACE AND GROUND WATER.
29. THE CONTRACTOR SHALL HAVE A SEPARATE, DEDICATED SET OF PLANS AT THE SITE TO RECORD CHANGES IN THE DESIGN ELEMENTS, ELEVATIONS AND HORIZONTAL LOCATIONS FOR THE INSTALLATION. ALL HORIZONTAL & VERTICAL DEVIATIONS FROM THE DESIGN DOCUMENTS SHALL BE RECORDED, AS WELL AS CHANGES IN EQUIPMENT OR MATERIALS. THE CONTRACTOR SHALL SUBMIT THESE MARKED UP (REDLINED) PLANS WITH MEASURED DISTANCES & ELEVATIONS OF INSTALLED COMPONENTS TO THE DESIGN ENGINEER AT CONSTRUCTION COMPLETION TO ALLOW CREATION OF AS-BUILT DRAWINGS OF THE PROJECT.
30. THE CONTRACTOR SHALL CALL FOR LOCATES FOR ALL SUBSCRIBING AND NON-SUBSCRIBING UTILITIES HAVING SUBSURFACE INFRASTRUCTURE IN THE AREA OF IMPROVEMENTS ASSOCIATED WITH THE WWTF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE UTILITIES LOCATED, MARKED AND MAINTAINING THE MARKINGS THROUGH THE ENTIRE PERIOD OF CONSTRUCTION.
31. THE CONTRACTOR SHALL SUBMIT DIGITAL PHOTOGRAPHS OF THE INSTALLATION PROCESS FOR THE FULL DURATION OF THE CONSTRUCTION PROJECT.

CONSTRUCTION NOTES:

1. WHERE SURVEY WORK HAS BEEN INCLUDED, THE HORIZONTAL DATUM USED IS NAD 83 TEXAS STATE PLANE COORDINATES. THE BENCHMARK DATUM USED IS SOUTHCENTRAL ZONE NAVD 88 DATUM.
2. ALL PROPERTY CORNERS, MONUMENTS, AND BENCHMARKS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED BY THE CONTRACTOR. ANY SURVEY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR, THROUGH USE OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF OSHA, EPA, AND ANY OTHER FEDERAL, STATE, OR LOCAL REGULATORY AGENCIES THAT MAY APPLY.
4. CALL 811 SHALL BE NOTIFIED A MINIMUM OF TWO BUSINESS DAYS PRIOR TO ANY EXCAVATION.
5. IF ACCESS TO PRIVATE PROPERTY IS AFFECTED, SUCH ACCESS SHALL BE RESTORED AT THE END OF EACH WORKDAY.
6. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN PLACE PRIOR TO CONSTRUCTION AND THAT COPIES OF ALL PERMITS ARE RETAINED ON SITE AT ALL TIMES.
7. THE LOCATIONS OF EXISTING UTILITIES, PAVEMENT, TREES/SHRUBS, AND OTHER FEATURES ARE APPROXIMATE ONLY. EXISTING CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER AND ENGINEER AS PART OF MOBILIZATION AND PRIOR TO SUBSURFACE CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. NO ADDITIONAL PAYMENT WILL BE MADE UNLESS SPECIFICALLY IDENTIFIED FOR PAYMENT IN THE CONTRACT DOCUMENTS AND PRIOR APPROVAL IS GIVEN BY OWNER AND ENGINEER. THE CONTRACTOR, SHALL AT THEIR EXPENSE AND COST, CONSTRUCT ALL IMPROVEMENTS IN SUCH A MANNER THAT WILL PROTECT ALL EXISTING UNDERGROUND UTILITIES.
8. EXISTING FEATURES IMPACTED DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO IMPROVED DRIVES, CURBING, LANDSCAPING, GROUND COVER, MAILBOXES, FENCING, SIGNAGE, AND EXISTING UTILITIES AND SERVICES SHALL BE REPLACED IN KIND. DRIVEWAYS NOT NOTED OTHERWISE AND IMPACTED SHALL BE RECONSTRUCTED TO MATCH PRECONSTRUCTION GRADING. CONTRACTOR SHALL COORDINATE ALL IMPACTS WITH PROPERTY OWNERS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY AND ALL DAMAGES TO EXISTING FACILITIES.
9. CONTRACTORS SHALL DOCUMENT EXISTING CONDITIONS PRIOR TO CONSTRUCTION BY MEANS OF PHOTOGRAPHS AND/OR VIDEO AND SUBMIT TO THE OWNER AND ENGINEER AS PART OF MOBILIZATION.
10. ALL DRAINAGE FEATURES IMPACTED DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SWALES, CULVERTS, AND STRUCTURES, SHALL BE RESTORED/REPLACED IN-KIND AND TO THEIR ORIGINAL GRADE AND LOCATION.
11. IN LOCATIONS WHERE CONSTRUCTION IS IN CLOSE PROXIMITY TO EXITING UTILITY POLES, COORDINATE THE BRACING OF POLES WITH THE APPROPRIATE UTILITY OWNERS IN ADVANCE OF WORK IN A GIVEN AREA TO AVOID PROJECT DELAYS. BRACING POLES DURING CONSTRUCTION AND RELATION OF ANY EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL WORK, AND NO ADDITIONAL COMPENSATION SHALL BE AUTHORIZED.
12. BEAR ALL COSTS FOR MATERIAL TESTING (CONCRETE/ASPHALT REPLACEMENT) AND COMPACTION TESTING OF SUBGRADES AND BASE AS PART OF THE OVERALL PROJECT COSTS. TESTING RESULTS SHALL BE SUBMITTED TO THE ENGINEER AND OWNER.
13. SUBMIT AS-BUILT DRAWINGS OF ALL NEWLY INSTALLED MAINS. AS-BUILT INFORMATION SHALL BE SUBMITTED FOR ALL VALVES, FITTINGS, AND OTHER MAJOR APPURTENANCES AS WELL AS AT LOCATIONS FOR INSTALLED PIPELINE A MINIMUM OF EVERY 150 FEET. INFORMATION SHOULD INCLUDE DEPTH OF BURY.
14. CONTRACTOR SHALL NOTIFY OWNER 72 HOURS IN ADVANCE OF ANY WATER SERVICE INTERRUPTIONS. INTERRUPTIONS TO WATER SERVICE SHALL NOT EXCEED TWO (2) HOURS.
15. FIRE HYDRANT LOCATIONS MAY BE FIELD ADJUSTED, IF NECESSARY, TO AVOID CONFLICTS WITH FUTURE DRIVEWAYS, POWER POLES, AND TELEPHONE MANHOLES.
16. IF NECESSARY, TRANSFER OF WATER SERVICE LINES SHALL BE PERFORMED AT NIGHT TO ACCOMMODATE BUSINESSES AND RESIDENCES IN THE AREA. THE COST SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.
17. WHERE REMOVAL OF BASE AND PAVEMENT IS NECESSARY FOR THIS PROJECT, ALL BASE AND PAVEMENT SHALL REPLACED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. ALL PAVEMENT UTILITY CUTS SHALL BE SAW CUT OR REMOVED TO THE NEAREST JOINT.
18. NO UTILITY TRENCHES OR PITS ARE TO BE LEFT OPEN OVERNIGHT. BACKFILLING WILL OCCUR DAILY AND AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION OPERATIONS.
19. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO PROTECT ROADWAY FACILITIES AT ALL TIMES.

EROSION / SEDIMENTATION CONTROL:

1. AT A MINIMUM, THESE CONTROLS SHALL CONSIST OF ROCK BERMS AND/OR SILT FENCES CONSTRUCTED PARALLEL TO AND DOWN GRADIENT FROM ALL TRENCHES, STOCKPILES AND AREAS DISTURBED BY CONSTRUCTION. THE ROCK BERM OR SILT FENCES SHALL BE INSTALLED IN A MANNER SUCH THAT ANY RAINFALL RUNOFF SHALL BE FILTERED.
2. MAINTAIN APPROPRIATE STRUCTURAL AND NONSTRUCTURAL BMPS TO REDUCE POLLUTANT DISCHARGES FROM THE CONSTRUCTION SITE.; INCLUDES PLAN PREPARATION; NOI/NOT FILING; SILT FENCE, ROCK CHECKS, CONSTRUCTION ENTRANCES; ONGOING INSPECTION AND MAINTENANCE OF ALL CONTROLS AND ALL OTHER ITEMS THAT ARE REQUIRED TO MAINTAIN COMPLIANCE WITH THE CGP.
3. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED DURING CONSTRUCTION BY THE CONTRACTOR.
4. ADDITIONAL PROTECTION MAY BE REQUIRED IF EXCESSIVE SOLIDS ARE BEING DISCHARGED FROM THE SITE.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER/ENGINEER.
6. THE CONTRACTOR SHALL REMOVE THE CONTROLS WHEN VEGETATION IS ESTABLISHED AND THE CONSTRUCTION AREA IS STABILIZED {31 TAC 313.5 (C)(12)}.
7. HAY BALES SHALL NOT BE USED FOR TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
8. PLACEMENT OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED SWPPP. ACTUAL LOCATIONS MAY VARY FROM THE PLAN, BUT WILL BE VERIFIED BY THE ENGINEER/INSPECTOR IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY SIGNIFICANT RAINFALL TO ENSURE DISTURBANCE OF THE STRUCTURES HAS NOT OCCURRED.
9. SEDIMENT DEPOSITED AFTER A RAINFALL SHALL BE REMOVED FROM THE SITE OR PLACED IN AN ENGINEER APPROVED DESIGNATED DISPOSAL AREA.

ROADWAY SUBGRADE:

1. PAVEMENT SUBGRADE PREPARATION AND PAVEMENT SECTION SHALL CONFORM WITH THE GEOTECHICAL REPORT.
2. IF DISCREPANCIES EXIST BETWEEN THE REPORT AND THE CONSTRUCTION DRAWINGS, THE MORE STRINGENT WILL APPLY, BUT MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL ROADWAY SUBGRADE COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S GEOTECHNICAL ENGINEER.
4. FLEXIBLE BASE OR FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED SIX INCHES COMPACTED. EACH LAYER OF MATERIAL, INCLUSIVE OF SUB GRADE, SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, AND TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY OWNER'S INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100 LF FOR EACH UPLIFT.
5. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER WILL PROVIDE OWNER'S INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FLEXIBLE BASE, AND FILL MATERIAL, AND SUB GRADE, HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
GENERAL NOTES I

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ENGINEER OF RECORD:	JMS

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REV	DESCRIPTION	BY	DATE	APPROV.
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Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

G-003A

TEMPORARY OR PERMANENT VEGETATIVE SOIL STABILIZATION:

1. INTERIM OR FINAL GRADING MUST BE COMPLETED PRIOR TO SEEDING, MINIMIZING ALL STEEP SLOPES.
2. FERTILIZER SHOULD BE APPLIED AT THE RATE OF 40 POUNDS OF NITROGEN AND 40 POUNDS OF PHOSPHORUS PER ACRE. COMPOST CAN BE USED INSTEAD OF FERTILIZER AND APPLIED AT THE SAME TIME AS THE SEED.
3. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED OR OTHERWISE STABILIZED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE TEMPORARY CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 21 DAYS.
4. A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE PREPARED/AMENDED BY A TX PE, CPESC, OR QPSWPPP, IMPLEMENTED, AND UPDATED TO MATCH SITE CONDITIONS DURING THE PROJECT. THE ASSOCIATED TPDES CONSTRUCTION SITE NOTICE MUST BE POSTED IN PUBLIC VIEW. TXR150000 PART III.D.2.
5. A CISEC, CESSWI, OR QCIS SHALL CONDUCT WEEKLY SWPPP INSPECTIONS AND DOCUMENT PER CGP. MAINTAIN ALL ESC MEASURES AND ADDRESS ALL IDENTIFIED CORRECTIVE ACTIONS APPROVED SWPPP.
6. THE LIMITS OF CONSTRUCTION (LOC) SHALL BE ADJUSTED AS NEEDED DURING THE PROJECT TO COVER ALL AREAS DISTURBED DURING DEMOLITION, GRADING, CONSTRUCTION, STORAGE, STOCKPILING, PARKING, ETC., PER TXR150000 PARTS I AND III.G.4.(C) AND (D). ADDITIONAL EROSION AND SEDIMENT CONTROLS MAY BE REQUIRED.
7. PER TXR150000 PART III.F.1.(M)., LOCATIONS OF THE FOLLOWING, AS APPLICABLE, MUST BE MARKED ON THIS ESCP IN THE FIELD: THE TPDES CONSTRUCTION SITE NOTICE POSTING IN PUBLIC VIEW, STAGING, SPOILS STORAGE, CONCRETE WASHOUT, DUMPSTERS, PORTABLE TOILET(S), FUELING POINT(S), AND/OR OTHER POTENTIAL CONTAMINANT SOURCES. THIS ESCP MUST ALSO BE UPDATED AS THESE POTENTIAL CONTAMINANT SOURCES MOVE OR OTHER CHANGES OCCUR ONSITE. PEN AND INK CHANGES ARE EXPECTED AND DON'T REQUIRE RESUBMITTAL; JUST DATE AND INITIAL.
8. IF THERE IS A BREAK OF MORE THAN 14 DAYS DURING THE PROJECT WHERE NO DIRT WORK IS DONE ON A SITE PORTION(S) WITHIN THE LIMITS OF CONSTRUCTION, TEMPORARY (OR PERMANENT) STABILIZATION IS REQUIRED PER TXR150000 PART III.F.2.(B).III. DIRT WORK STOPPAGE INCLUDES TIME PERIODS BETWEEN ROUGH GRADING COMPLETION AND CONSTRUCTION START, DURING CONSTRUCTION, BETWEEN CONSTRUCTION AND FINAL STABILIZATION, ETC. USE TEMPORARY (OR PERMANENT) SEEDING, ROCK, GRAVEL (1" MINIMUM), CONCRETE RIP-RAP, DEGRADABLE STRAW MATTING, SHREDDED HARDWOOD MULCH, DEGRADABLE SOIL RETENTION BLANKETS, OR SIMILAR. NOTE THAT MATTING, MULCH, OR BLANKETS REQUIRE ONGOING MAINTENANCE.
9. ANY EXISTING STORM WATER INLETS WITHIN 200' OF THE LOC MUST HAVE INLET PROTECTION. STORM WATER INLET PROTECTION IS ALSO REQUIRED AS NEW STORM WATER INLETS ARE ADDED TO THE SITE, IF APPLICABLE.
10. POND OR OTHER DISTURBED SLOPES 3:1 OR FLATTER MUST BE STABILIZED WITH BIODEGRADABLE SOIL RETENTION BLANKETS WITH NO PLASTIC NETTING. DISTURBED SLOPES EXCEEDING 3:1 REQUIRE BLANKETS OR EQUIVALENT UNTIL RE-VEGETATION IS ESTABLISHED OR SODDED.

EXCAVATION AND TRENCH SAFETY PLAN:

1. SUBMIT A SAFETY PROGRAM SPECIFICALLY FOR THE CONSTRUCTION OF TRENCH EXCAVATION. DESIGN THE TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). A. FEDERAL REGULATIONS, 29 CFR, PART 1926, STANDARDS - SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION - SUBPART P EXCAVATION STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.
2. CONSTRUCTION AND SHOP DRAWINGS CONTAINING DEVIATIONS FROM OSHA STANDARDS OR SPECIAL DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS RETAINED AND PAID BY CONTRACTOR.

TCEQ PIPELINE NOTES:

1. ALL WATER LINES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS."
2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL 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 [§290.44(A)(2)].
4. 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 [§290.44(A)(3)].
5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL 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 WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].
7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].
8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
9. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].
10. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.

THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

$$Q = \frac{LD\sqrt{P}}{148{,}000}$$

WHERE:

Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,

L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,

D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND

P = THE AVG TEST PRESSURE DURING THE HYDRO TEST IN POUNDS PER SQUARE INCH (PSI).

THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

WHERE:

L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,

S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,

D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND

P = THE AVG TEST PRESSURE DURING THE HYDRO TEST IN POUNDS PER SQUARE INCH (PSI).

12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §290.44(E)(1)-(4).
13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT [§290.44(E)(5)].
14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].
15. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§290.44(E)(7)].
16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].
17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].
18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09.

WATER MAIN NOTES:

1. THE CONTRACTOR SHALL COORDINATE PRESSURE TESTING OF NEW WATER MAINS WITH OWNER AND ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR. PRESSURE TESTING REQUIREMENTS ARE INCLUDED IN THE SPECIFICATIONS AND IN TCEQ PIPELINE NOTES SECTION.
2. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.
3. THE CONNECTION LOCATIONS LISTED IN THE PLANS ARE BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD LOCATE EXISTING WATER MAIN LOCATIONS AT ALL TIE-IN LOCATIONS TO VERIFY SIZE, ELEVATION, AND MATERIAL PRIOR TO ORDERING MATERIALS FOR CONNECTION.
4. THE CONTRACTOR SHALL MAINTAIN MINIMUM SEPARATION BETWEEN UTILITIES PER TCEQ STANDARDS.
5. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS.
6. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900 DR 25, COLORED BLUE.
7. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C150 AND AWWA C151 AND CEMENT LINED.
8. LOCATIONS OF COMBINATION AIR VALVES SHOWN ARE APPROXIMATE. INSTALL AIR RELEASE VALVES AT THE HIGH POINT IN THE WATER MAIN FOR THE LOCATIONS GIVEN.
9. THRUST BLOCKING IS REQUIRED AT ALL FITTINGS AND BENDS IN ACCORDANCE WITH THE THRUST BLOCKING DETAIL PROVIDED AND SPECIFICATION SECTION 02680 - JOINT RESTRAINTS AND THRUST BLOCKING.
10. THE OWNER SHALL SUPPLY ALL WATER NEEDED FOR CONSTRUCTION, TESTING AND DISINFECTION. THE CONTRACTOR SHALL NOT BE REQUIRED TO PAY FOR THIS WATER.
11. UNLESS NOTED OTHERWISE, ALL WATER MAIN P.I.'S SHALL BE ACHIEVED USING THE WATER MAIN MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
12. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ESTABLISH AN AREA TO DISPOSE OF ANY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL REMOVED DURING CONSTRUCTION.

WASTEWATER PIPELINE AND FORCE MAIN NOTES

1. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION.
2. ALL RESIDENTIAL WASTEWATER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND A CLEANOUT SHALL BE INSTALLED AT THE PROPERTY LINE. SERVICES TO LOTS WILL EXTEND FOUR (4) FEET PAST THE UNDERGROUND ELECTRIC CONDUIT IF ELECTRIC IS INSTALLED IN THE FRONT EASEMENT. ALL SEWER CLEANOUTS THAT LEAD TO FORCE MAINS SHALL BE INSTALLED WITH A PROTECTIVE UTILITY SHROUD AND PIVOTING MARKER POLE DURING TIME OF CONSTRUCTION
3. PIPE BEDDING MATERIAL OF WASTEWATER MAINS SHALL BE COMPOSED OF WELL-GRADED, CRUSHED STONE, OR GRAVEL
4. SECONDARY AND GENERAL BACKFILL OF WASTEWATER MAINS SHALL BE APPROVED SOIL MATERIALS FOR BACKFILL AND FILL, FREE OF CLAY, ROCK, OR GRAVEL LARGER THAN 2-INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETABLE, AND OTHER ORGANIC MATTER AND DELETERIOUS MATERIALS. PREVIOUSLY EXCAVATED MATERIALS MEETING THESE REQUIREMENTS MAY BE USED FOR BACKFILL.
5. ALL WASTEWATER MAINS SHALL HAVE COMPRESSION OR MECHANICAL JOINTS AS PER 30 TAC §217.53 (C) (2).
6. FOR WASTEWATER LINES LESS THAN 24" IN DIAMETER, SELECT INITIAL BACKFILL MATERIAL SHALL BE PLACED IN TWO LIFTS.
   a. THE FIRST LIFT SHALL BE SPREAD UNIFORMLY AND SIMULTANEOUSLY ON EACH SIDE AND UNDER THE SHOULDERS OF THE PIPE TO THE MID POINT OR SPRING LINE OF THE PIPE.
   b. THE SECOND LIFT SHALL BE PLACED TO A DEPTH AS SHOWN ON THE PIPE BACKFILL DETAIL. MAINS LARGER THAN 24", 12" MAXIMUM LIFTS SHALL BE USED.
8. ALL MANHOLES MUST BE WATERTIGHT, EITHER MONOLITHIC, CAST-IN-PLACE CONCRETE STRUCTURES OR PREFABRICATED MANHOLES. THE MANHOLES SHALL HAVE WATER-TIGHT RINGS AND COVERS. WHEREVER THEY ARE WITHIN THE 100 YEAR FLOODPLAIN, THE MANHOLE COVERS SHALL BE BOLTED. EVERY THIRD MANHOLE IN SEQUENCE SHALL HAVE AN ALTERNATE MEANS OF VENTING. 30 TAC §213.5 (C) (3) (A) AND 30 TAC §217.55 (O).
9. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS TWO INCHES (2") ABOVE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREA. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
10. ALL NEW MANHOLES, ARE TO HAVE COVERS WITH 32" OPENINGS.
11. WASTEWATER MAIN CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS OR MECHANICAL "BOOT TYPE" JOINT.
12. WASTEWATER MAINS SHALL BE TESTED FROM MANHOLE TO MANHOLE.
13. IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TEST THE EXISTING MANHOLES BEFORE CONSTRUCTION. AFTER THE PROPOSED MANHOLE(S) HAS BEEN BUILT, THE CONTRACTOR SHALL RE-TEST THE EXISTING SYSTEM TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. (NO SEPARATE PAY ITEM).
14. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 160 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC § 217.53 (D) AND 30 TAC § 290.44 (E).
15. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE WASTEWATER LINES. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
   a. PULL MANDREL
   b. PERFORM AIR TEST
   c. REMOVAL OF DEBRIS
   d. FLUSHING OF SYSTEM
   e. TV INSPECTION (WITHIN 72 HOURS OF FLUSHING)
16. A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE WASTEWATER MAIN AND LATERALS AT SUBGRADE, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
17. TCEQ AND EPA REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF WASTEWATER COLLECTION SYSTEMS.DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTES ON THE PROJECT'S PLAN AND PROFILE SHEETS. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY OWNER.
18. ALL MANHOLES NOT WITHIN PAVED STREETS SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE CONE.

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
GENERAL NOTES II

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

G-003B

DESIGN BASIS - PHASE 1 - 72,000 GPD

DESIGN FLOW: 72,000 GPD
2-HR PEAK FLOW: 288,000 GPD

PARAMETER	INFLUENT (mg/l)	REUSE EFFLUENT
BOD	300	5 mg/l
TSS	250	5 mg/l
NH3	40	2 mg/l
TKN	60	
TP	10	1 mg/l
E. Coli	N/A	126 CFU/100ml
DO	N/A	>2 mg/l

SEQUENCE OF CONSTRUCTION:

1. INSTALL EROSION CONTROLS PER APPROVED PLAN.
2. TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED. CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
3. CUT AND REMOVE ALL TREES AND SHRUBS WITH TRUNKS GREATER THAN TWO INCHS IN DIAMETER AT BASE AND DISPOSE AS REQUIRED BY OWNER. STRIP TOP SOIL AND SURFACE VEGITATION TO NOMINAL DEPTH OF SIX INCHES. PLACE TOP SOIL IN AREA DESIGNATED BY OWNER. TOP SOIL TO BE USED FOR COVER FOR RE-VEGETATION OVER DISTRUBED AREA.
4. CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
5. PERFORM CUT AND FILL OPERATIONS PER PLANS AND SECTIONS. LOCATION OF BEDROCK SHOWN ON THESE PLANS IS APPROXIMATE. REFER TO GEOTECH REPORT FOR INFORMATION ON BEDROCK LOCATION. ROCKS LARGER THAN 2" ENCOUNTERED DURING EARTH WORK MAY BE INCORPORATED INTO FILL AREAS. ENSURING ROCK POCKETS ARE NOT DEVELOPED. INDIVIDUAL ROCKS SHALL BE COMPLETELY ENCAPSULATED BY SOIL MATERIAL.
6. ALL FILL PLACED DURING CUT AND FILL OPERATIONS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY STANDARD PROCTOR METHODS (ASTM D698) PER GEOTECHNICAL REPORT.
7. BASED ON INFORMATION AVAILABLE FROM GEOTECHNICAL REPORT, EXCAVATION SHOULD ONLY REQUIRE STANDARD EXCAVATION EQUIPMENT. IF UNWEATHERED LIMESTONE IS ENCOUNTERED THAT CANNOT BE EXCAVATED WITH STANDARD EQUIPMENT.CONTRACTOR SHOULD CONSULT WITH OWNER TO DETERMINE BEST SOLUTION.
8. CONSTRUCT DEVELOPMENT PER APPROVED PLANS.
9. INSTALL STREETSCAPE AND/OR LANDSCAPING IMPROVEMENTS.
10. CONTRACTOR TO VEGETATE ANY DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 70% VEGETATION PRIOR TO COMPLETION
11. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
12. TPDES REQUIREMENTS - DISTURBED AREAS ON WITCH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY WILL BEGIN AGAIN WITHIN 21 DAYS

RWPF DESIGN:

THE FOLLOWING COMPONENTS WILL BE INSTALLED FOR PHASE 1:

- (1) EQUALIZATION TANK - 21'- 6 ½" DIAMETER X 16.1' TALL 38,400 GALLON WORKING CAPACITY SUPERIOR TANK CO. INC. BOLTED STEEL TANK WITH ACCESS LADDER
  - SUBMERSIBLE LEVEL TRANSMITTER
  - HIGH LEVEL SWITCH
  - ONE (1) GMECH CARB-CAN-TROL™ MODEL CV-1020-08F-040 ODOR CONTROL CARBON VENT, 8" FLANGE
  - ONE (1) GMECH HEAD-AER™ MODEL BH-SC05-0H3-02B BALLASTED AIR SUBHEADER
  - FIVE (5) GMECH GRID-AER™MODEL BD-CB04-0H2-01B BALLASTED AERATION GRIDS, EACH INCLUDING:
    - FOUR (4) COARSE BUBBLE DIFFUSER UNITS
    - 2" PVC HEADER, 1" PVC HOSE BARB INLET
    - PLASTIC BALLAST MOLD AND SS HEADER ANCHOR HARDWARE
    - ONE (1) 20' LENGTH 1" AIR HOSE WITH SS HOSE CLAMPS
- (1) SAVECO MODEL VSA-1000 FINE SCREEN (1400 GPM RATED CAPACITY) - INTERNALLY FED, PERFORATED PLATE, ROTATING DRUM FINE SCREEN, SCREENINGS CHUTE WITH ACCESS PLATFORM, WALKWAY, STAIRS, HANDRAILS.
- (1) MMBR SYSTEMS INC. BLUBOX™ MBR 4-ZONE SYSTEM, MODEL 8000-V0-ACIP-UV, CONSISTING OF:
  - (1) FINE SCREEN (140 GPM RATED CAPACITY) - INTERNALLY FED, HORIZONTAL PERFORATED PLATE, ROTATING DRUM FINE SCREEN, WASHER/COMPACTOR.
  - (2) MBR ZONES
  - (1) ANOXIC ZONE
  - (1) PRE-AERATION ZONE
  - (1) MEMBRANE CIP UNIT
  - (3) MEMBRANE AIR SCOUR BLOWERS
  - (1) ALKALINITY FEED SYSTEM
  - (1) ALUM FEED SYSTEM
  - (2) INTERNAL RECYCLE PUMPS
  - (2) PERMEATE PUMPS
  - (1) MAGMETER EFFLUENT FLOW METER
  - (1) LOT OF ACCESS WALKWAYS, STAIRS, HANDRAILS
  - (1) UV DISINFECTION SYSTEM
- (1) SLUDGE HOLDING TANK - 15.5' DIAMETER X 16.1' TALL 19,500 GALLON WORKING CAPACITY SUPERIOR TANK CO. INC. BOLTED STEEL TANK WITH ACCESS LADDER
  - SUBMERSIBLE LEVEL TRANSMITTER
  - HIGH LEVEL SWITCH
  - ONE (1) HAMMER SCREENS AUTOMATIC SLUDGE THICKENER (SLUDGE DECANTER) MODEL ST-1017-22T-035-346-008
  - ONE (1) GMECH CARB-CAN-TROL™ MODEL CV-0816-06F-020 ODOR CONTROL CARBON VENT, 6" FLANGE
  - ONE (1) GMECH HEAD-AER™ MODEL BH-SC05-0H3-02B BALLASTED AIR SUBHEADER
  - FIVE (5) GMECH GRID-AER™MODEL BD-CB04-0H2-01B BALLASTED AERATION GRIDS, EACH INCLUDING:
    - FOUR (4) COARSE BUBBLE DIFFUSER UNITS
    - 2" PVC HEADER, 1" PVC HOSE BARB INLET
    - PLASTIC BALLAST MOLD AND SS HEADER ANCHOR HARDWARE
    - ONE (1) 20' LENGTH 1" AIR HOSE WITH SS HOSE CLAMPS
- (1) MMBR SYSTEMS INC. BLUBOX™ EQUIPMENT SKID, CONSISTING OF:
  - DUPLEX BLOWERS SERVICING BOTH THE EQ AND SLUDGE HOLDING TANK
  - (2) WAS PUMP
  - (2) EQ PUMP
- SYSTEM CONTROLS
- (1) 300 kW GENERATOR WITH ATS
- (1) LOT OF ELECTRICAL SWITCHGEAR AND CANOPY
- (1) PLANT DRAIN LIFT STATION, CONSISTING OF,
  - 5' DIA WET WELL
  - DUPLEX PUMPS WITH PUMP BASES AND GUIDERAILS
  - VALVING FOR ISOLATING PUMPS
  - INSTRUMENTATION AND CONTROLS
  - ONE (1) GMECH CARB-CAN-TROL™ MODEL CV-0612-04F-010 ODOR CONTROL CARBON VENT, 4" FLANGE

RECLAIMED WATER PUMP STATION DESIGN:

- (1) RECLAIMED WATER STORAGE TANK - 29' 8 ⅝" DIAMETER X 16.1' TALL 73,000 GALLON WORKING CAPACITY SUPERIOR TANK CO. INC. BOLTED STEEL TANK WITH ACCESS LADDER
  - SUBMERSIBLE LEVEL TRANSMITTER
  - HIGH LEVEL SWITCH
  - ONE (1) GMECH GMIX™ MODEL SMH-0610-348-050 BALLASTED SUBMERSIBLE HORIZONTAL AXIAL FLOW MIXER
- (2) CHEMICAL INJECTION VAULTS
- (1) FRP SHED FOR STORAGE AND DISTRIBUTION OF SODIUM HYPOCHLORITE
  - DUPLEX CHLORINE FEED PUMPS
  - CHLORINE ANALYZER
- (1) PUMP SKID, CONSISTING OF:
  - (2) BOOSTER PUMPS
  - (1) CANOPY
- (1) MANUAL GRAB SAMPLE STATION
- ONE (1) CLA-VAL MODEL 610-03 ALTITUDE VALVE, 4" FLANGED

INTEGRATED WATER SERVICES, INC. FIRM #15328

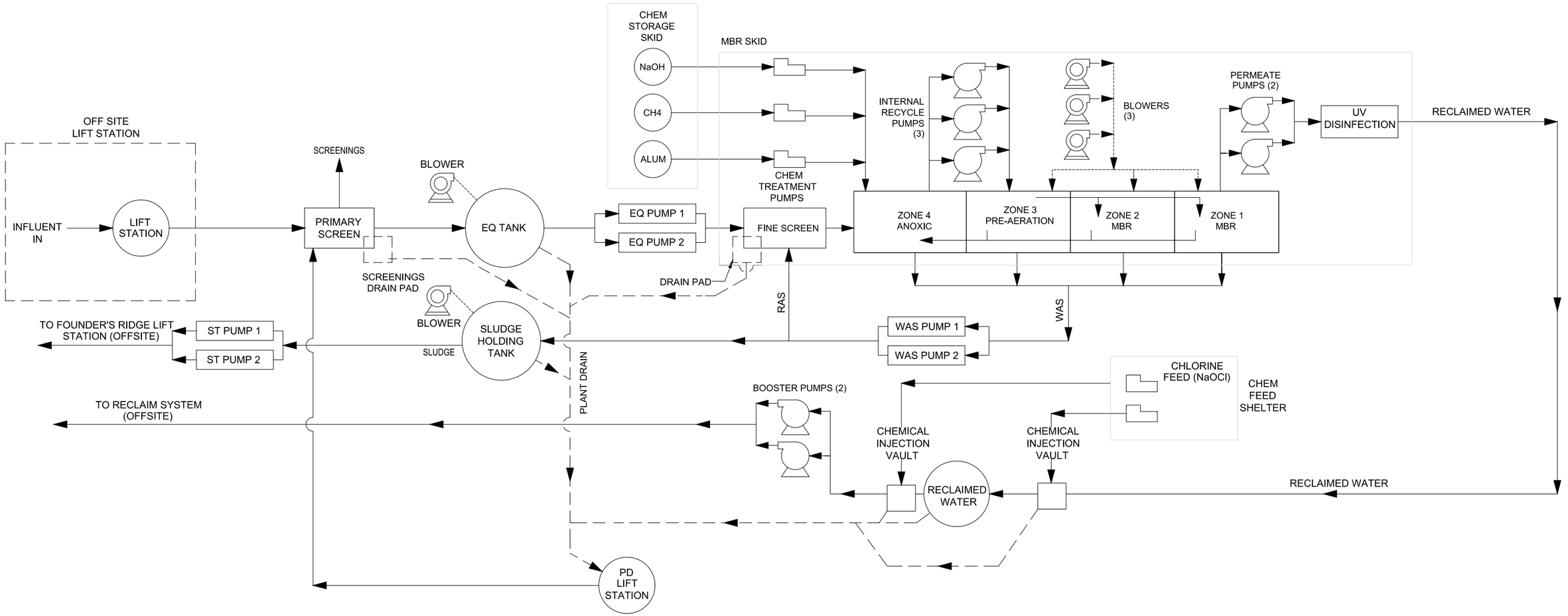
DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
GENERAL NOTES III

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

G-003C



INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROCESS FLOW DIAGRAM

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
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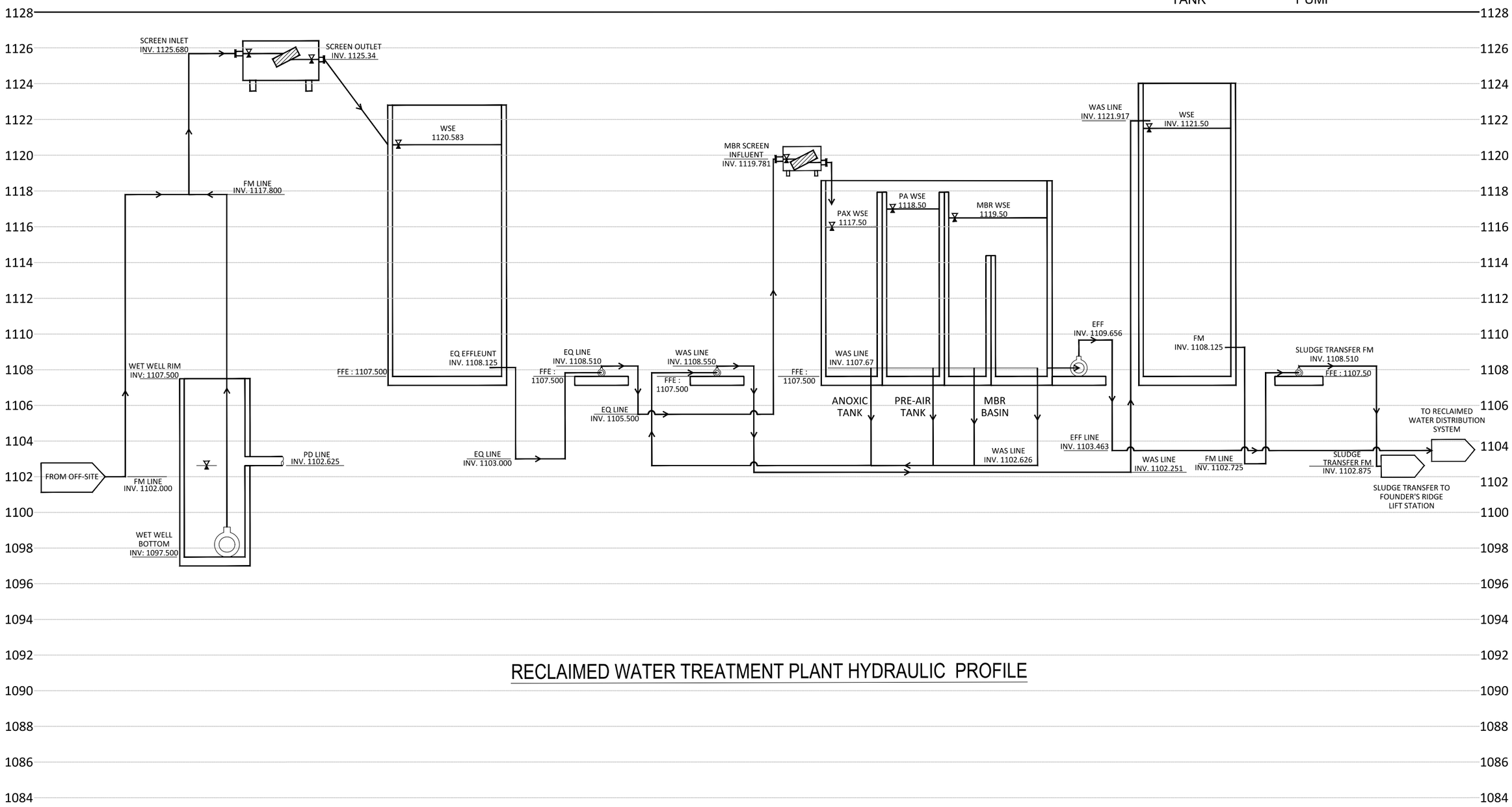
Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED
PROFESSIONAL ENGINEER
9/06/24

G-004



RECLAIMED WATER TREATMENT PLANT HYDRAULIC PROFILE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
RECLAIMED WATER TREATMENT PLANT HYDRAULIC PROFILE

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
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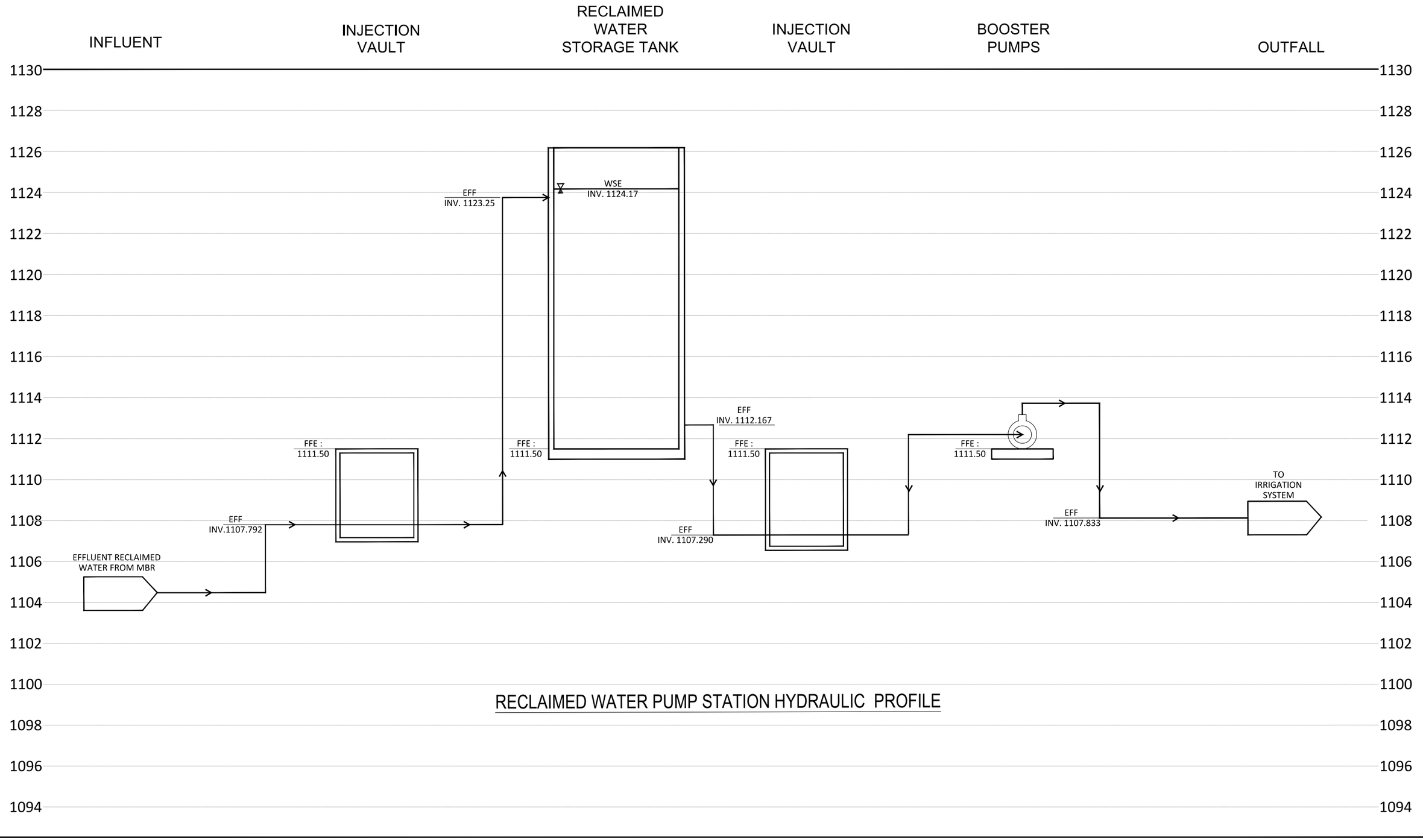
Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED
PROFESSIONAL ENGINEER
9/06/24

G-005A



RECLAIMED WATER PUMP STATION HYDRAULIC PROFILE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
RECLAIMED WATER PUMP STATION HYDRAULIC PROFILE

DATE:	7/25/24
DESIGNED BY:	MR
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PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

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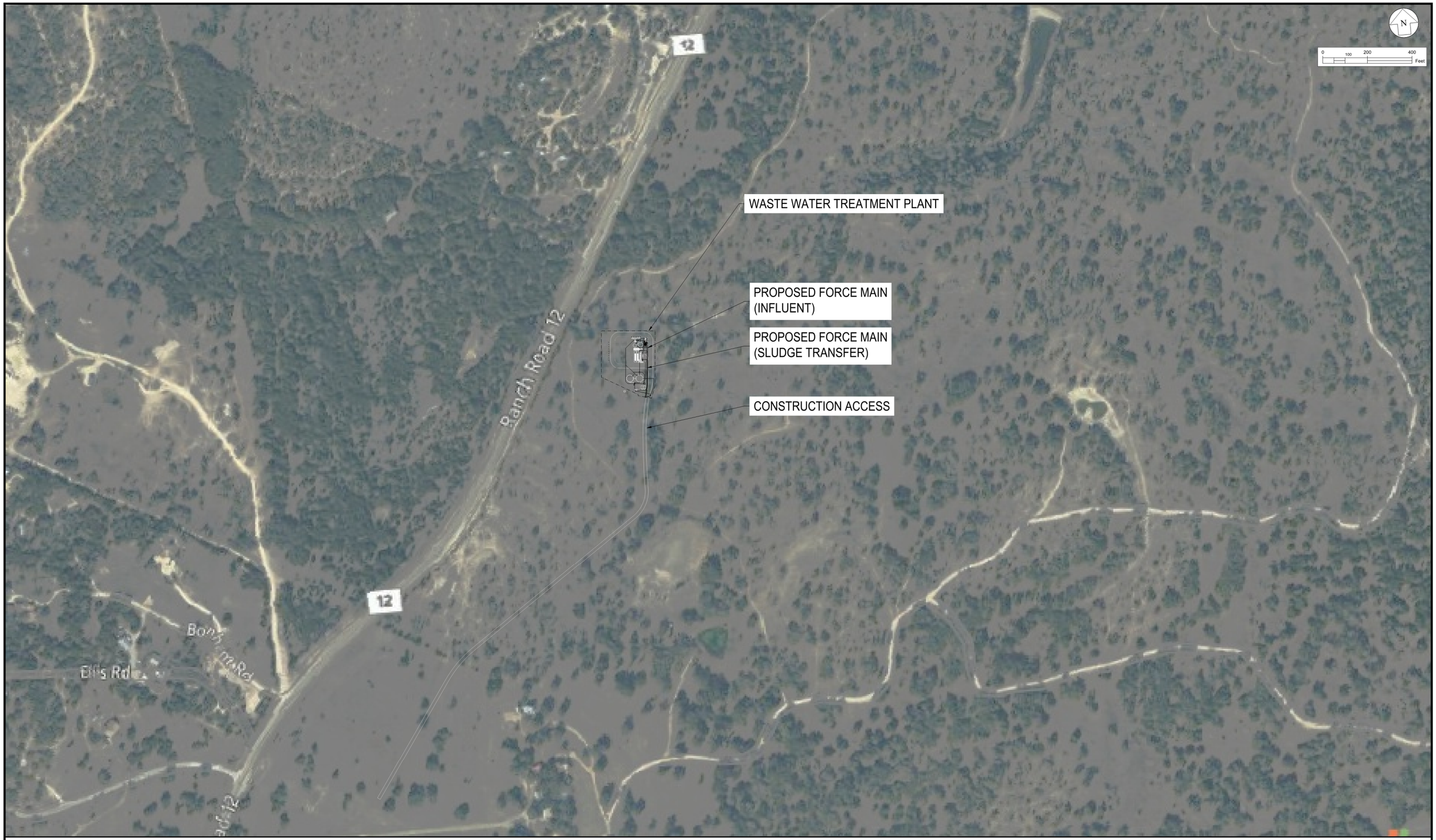
Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

G-005B



INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SITE PLAN - PROPOSED CONDITION

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

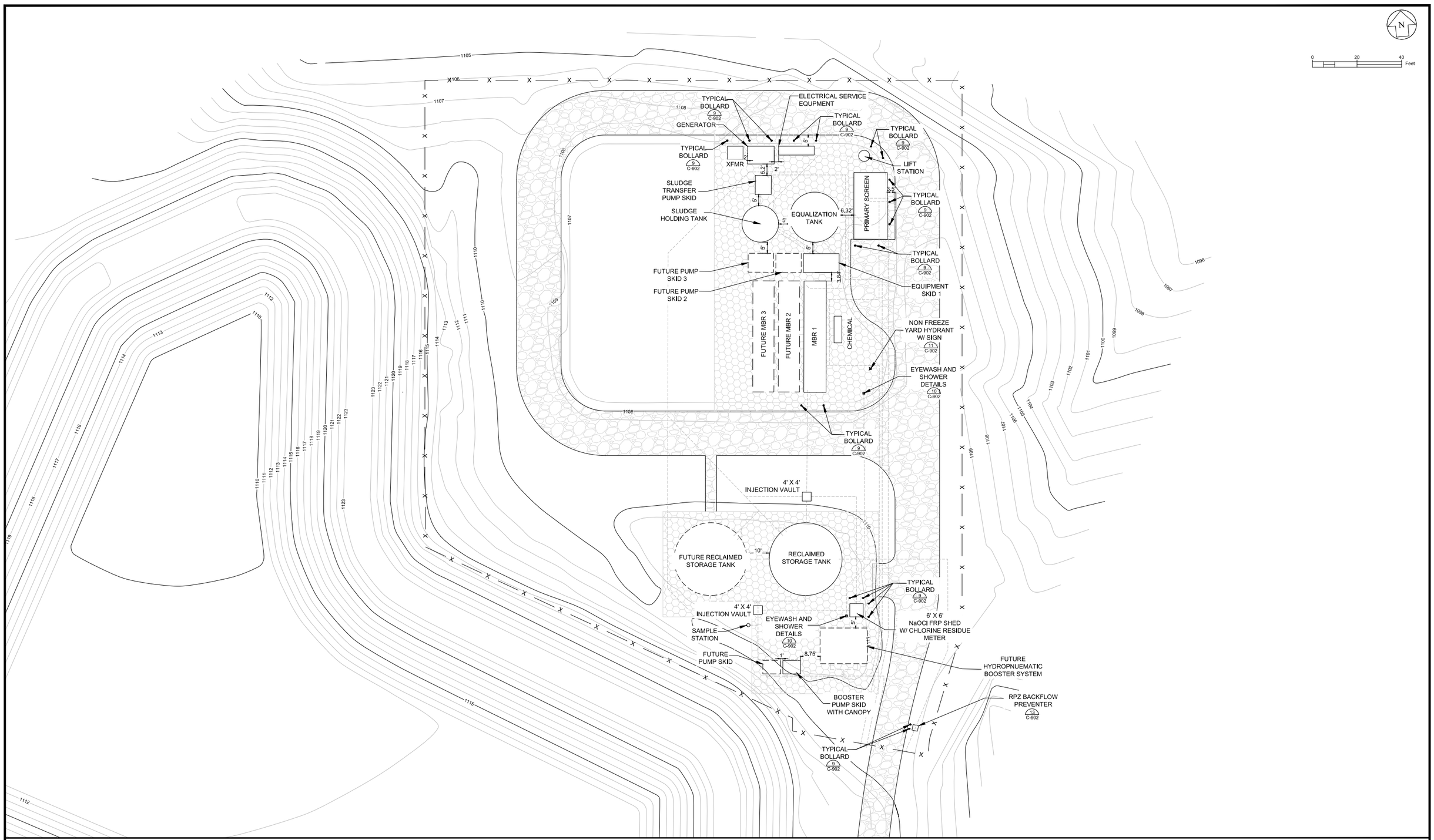
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
PROFESSIONAL ENGINEER
9/06/24

C-001



INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SITE LAYOUT - FINAL BUILDOUT

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

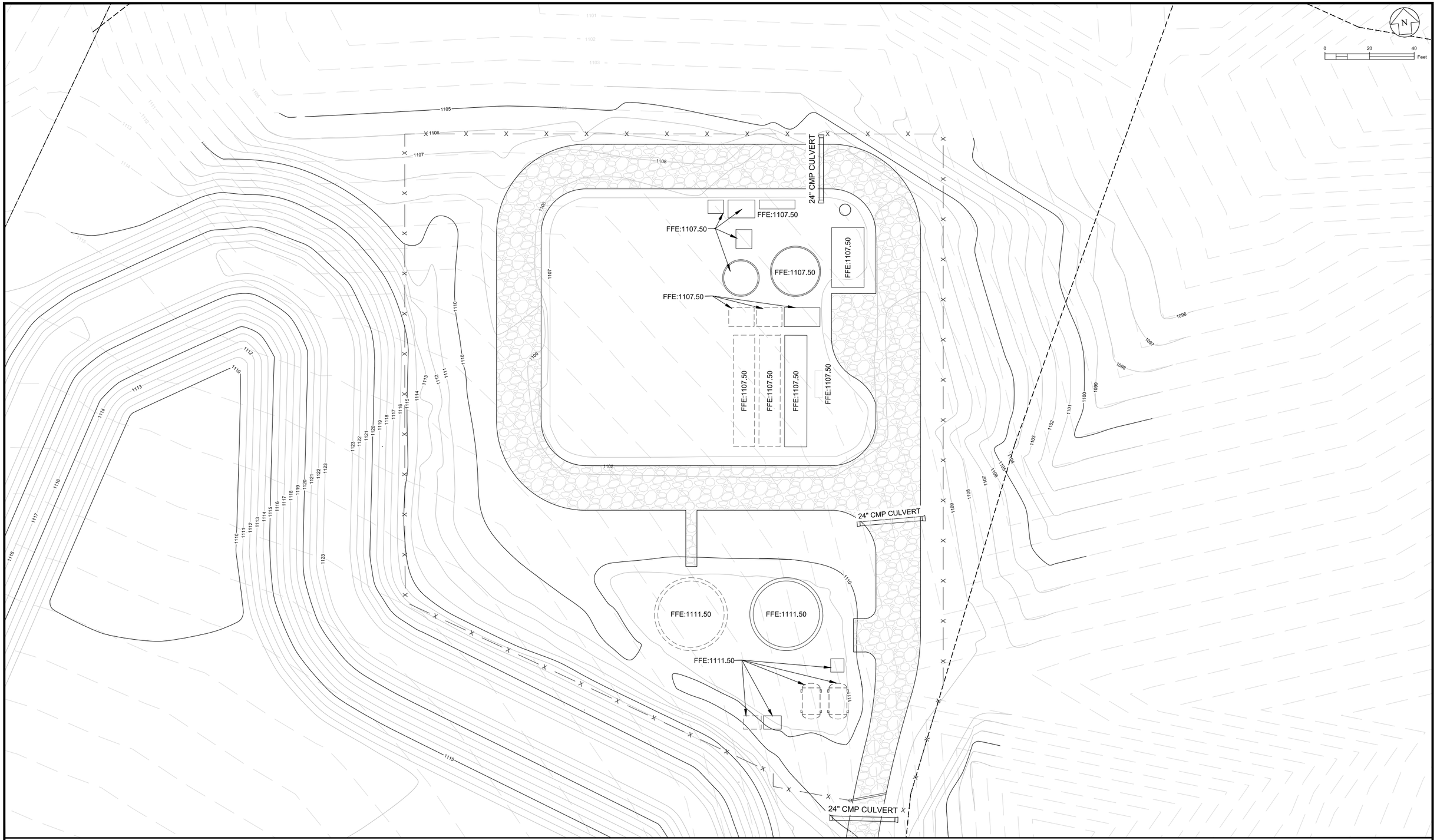
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
LICENSED
PROFESSIONAL ENGINEER
9/06/24

C-002



INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SITE PLAN - EARTHWORK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder

JEFF SNYDER 14407S LICENSED PROFESSIONAL ENGINEER

9/06/24

C-003

BORE HOLE ◯

Coordinates of Bore Hole		
Bore Hole	Easting	Northing
BH-1	2261388.054	13997437.527
BH-2	2261445.974	13997425.044
BH-3	2261383.878	13997555.218
BH-4	2261451.963	13997582.314
BH-5	2261338.617	13997589.042
BH-6	2261541.947	13997514.868

EARTH WORK VOLUME		
TOTAL CUTTING	118766.88	Cu.Ft
TOTAL FILLING	73205.77	Cu.Ft
NET (CUTTING)	45561.12	Cu.Ft

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder

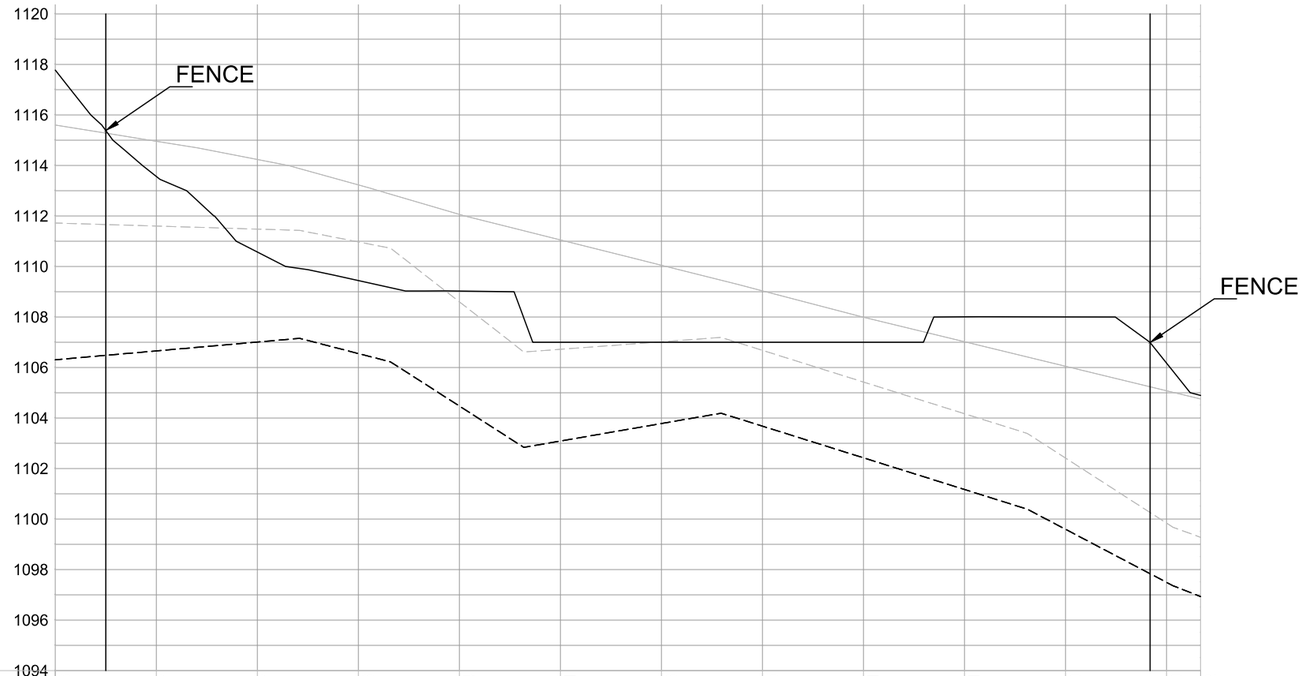
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER

9/06/24

C-004A

0 15 30 Feet (Horiz)

0 3 6 Feet (Vert)



	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+27
EXISTING GROUND	1115.596	1114.957	1114.237	1113.228	1112.064	1111.051	1110.048	1109.035	1107.991	1107.021	1106.050	1105.080	1104.752
PROPOSED GRADING	1117.771	1113.565	1110.571	1109.443	1109.025	1107.000	1107.000	1107.000	1107.000	1108.005	1108.001	1106.177	1104.893
WEATHER BEDROCK	1111.720	1111.599	1111.478	1110.971	1108.600	1106.720	1107.016	1106.678	1105.424	1104.170	1102.416	1099.839	1099.276
BEDROCK	1106.31	1106.66	1107.01	1106.55	1104.47	1103.09	1103.78	1103.68	1102.42	1101.17	1099.60	1097.49	1096.93

EXISTING GROUND

PROPOSED GRADING

WEATHER BEDROCK

BEDROCK

1 EXISTING GROUND PROFILE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

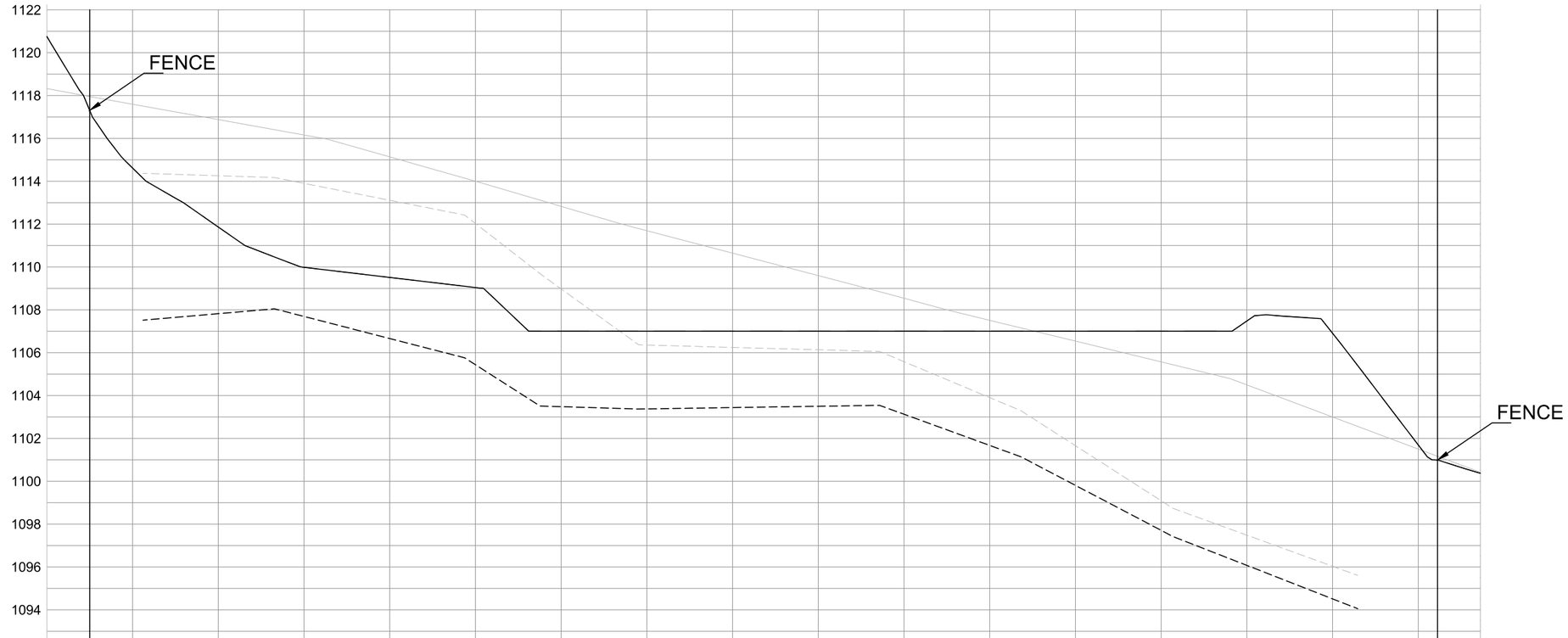
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder

JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER

9/06/24

C-004B



EXISTING GROUND	1118.324	1117.595	1116.877	1116.160	1115.138	1114.003	1112.829	1111.693	1110.644	1109.596	1108.542	1107.511	1106.541	1105.570	1104.496	1102.999	1101.502	1100.416	
PROPOSED GRADING	1120.755	1114.617	1111.864	1109.982	1109.511	1109.041	1107.000	1107.000	1107.000	1107.000	1107.000	1107.000	1107.000	1107.000	1107.478	1106.910	1101.698	1100.373	
WEATHER BEDROCK			1114.258	1113.902	1113.113	1112.032	1108.977	1106.355	1106.246	1106.136	1105.580	1103.905	1101.661	1099.092	1097.485	1096.033			
BEDROCK			1107.82	1107.69	1106.66	1105.44	1103.48	1103.38	1103.44	1103.50	1103.13	1101.67	1099.81	1097.71	1096.07	1094.51			
	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+35	

2 EXISTING GROUND PROFILE

EXISTING GROUND

PROPOSED GRADING

WEATHER BEDROCK

BEDROCK

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

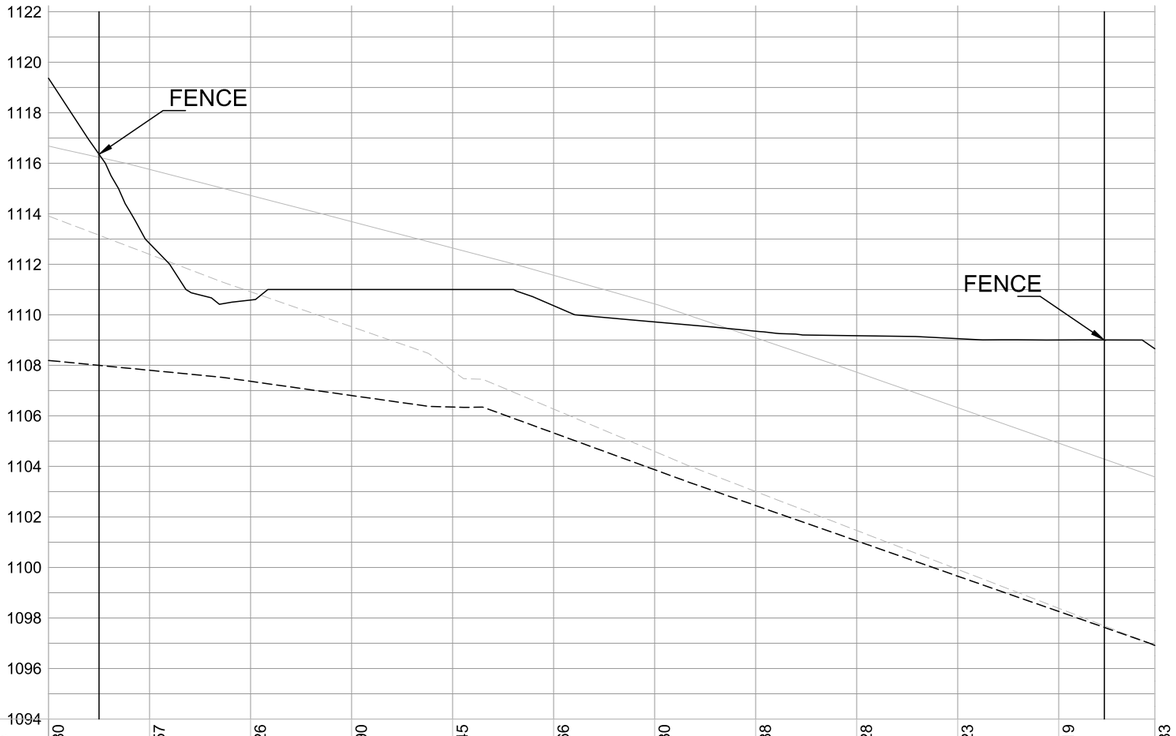
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

C-004C

0 15 30 Feet (Horiz)

0 3 6 Feet (Vert)



	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00	2+19
EXISTING GROUND	1116.680	1115.757	1114.726	1113.690	1112.645	1111.566	1110.430	1109.088	1107.728	1106.323	1104.919	1103.583
PROPOSED GRADING	1119.366	1112.827	1110.585	1111.000	1111.000	1110.361	1109.717	1109.352	1109.174	1109.058	1109.005	1108.659
WEATHER BEDROCK	1113.913	1112.395	1110.915	1109.529	1107.786	1106.271	1104.592	1103.006	1101.465	1099.925	1098.384	1096.913
BEDROCK	1108.19	1107.81	1107.37	1106.81	1106.35	1105.33	1103.87	1102.45	1101.05	1099.65	1098.26	1096.91

3 EXISTING GROUND PROFILE

EXISTING GROUND

PROPOSED GRADING

WEATHER BEDROCK

BEDROCK

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

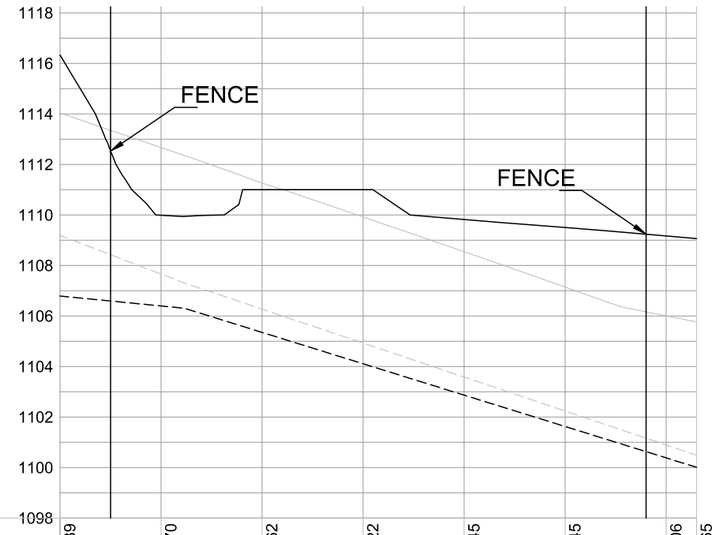
Jeffrey Snyder

JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER

9/06/24

C-004D

0 15 30
Feet (Horiz)
0 3 6
Feet (Vert)



EXISTING GROUND	1114.039	1112.670	1111.262	1109.922	1108.545	1107.145	1106.006	1105.765
PROPOSED GRADING	1116.329	1109.988	1111.000	1111.000	1109.821	1109.505	1109.170	1109.067
WEATHER BEDROCK	1109.193	1107.660	1106.272	1104.928	1103.584	1102.239	1100.895	1100.490
BEDROCK	1106.79	1106.40	1105.35	1104.11	1102.87	1101.63	1100.38	1100.01
	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+26

4 EXISTING GROUND PROFILE

EXISTING GROUND
PROPOSED GRADING
WEATHER BEDROCK
BEDROCK

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

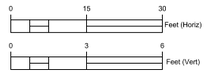
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

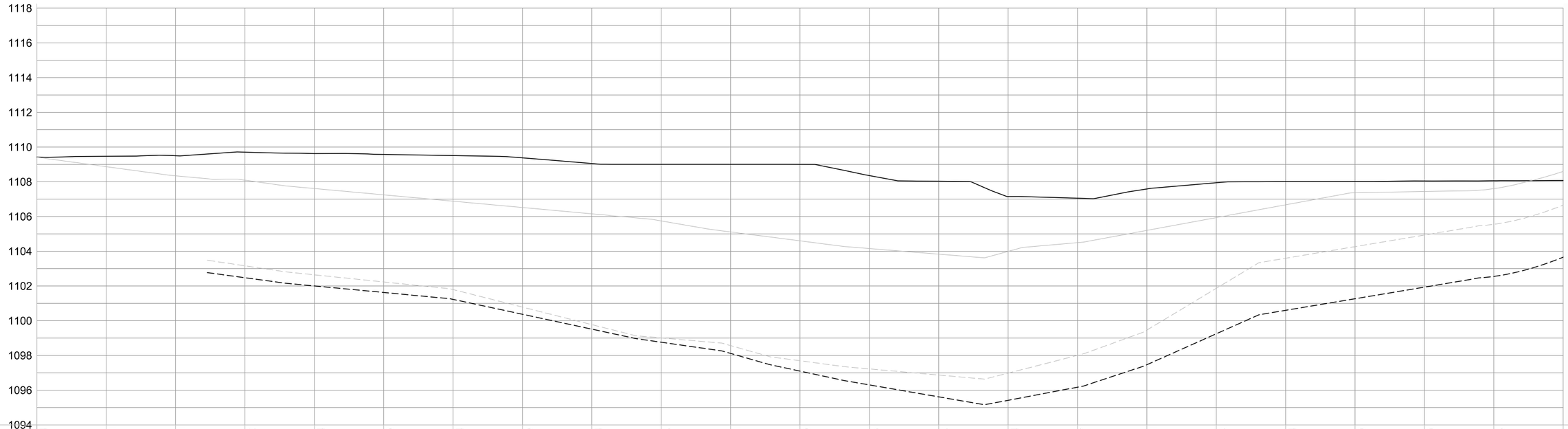
REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

C-004E





	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80	4+00	4+20	4+40
EXISTING GROUND	1109.414	1108.871	1108.341	1108.092	1107.614	1107.249	1106.884	1106.519	1106.154	1105.746	1105.111	1104.599	1104.155	1103.833	1103.994	1104.497	1105.201	1105.938	1106.674	1107.370	1107.440	1107.605	1108.598
PROPOSED GRADING	1109.420	1109.468	1109.500	1109.707	1109.623	1109.573	1109.509	1109.376	1109.049	1109.003	1109.002	1109.001	1108.355	1108.033	1107.149	1107.055	1107.586	1107.944	1108.007	1108.011	1108.044	1108.059	1108.073
WEATHER BEDROCK				1103.160	1102.642	1102.231	1101.792	1100.782	1099.772	1099.007	1098.566	1097.693	1097.223	1096.869	1096.983	1098.002	1099.461	1101.865	1103.597	1104.265	1104.933	1105.551	1106.658
BEDROCK				1102.47	1102.00	1101.63	1101.23	1100.37	1099.51	1098.76	1098.12	1097.10	1096.30	1095.61	1095.42	1096.17	1097.47	1099.25	1100.60	1101.27	1101.93	1102.55	1103.66

ROAD CENTER LINE

EXISTING GROUND ─────
PROPOSED GRADING ─────
WEATHER BEDROCK – – – – –
BEDROCK – – – – – – – –

INTEGRATED WATER SERVICES, INC.
FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

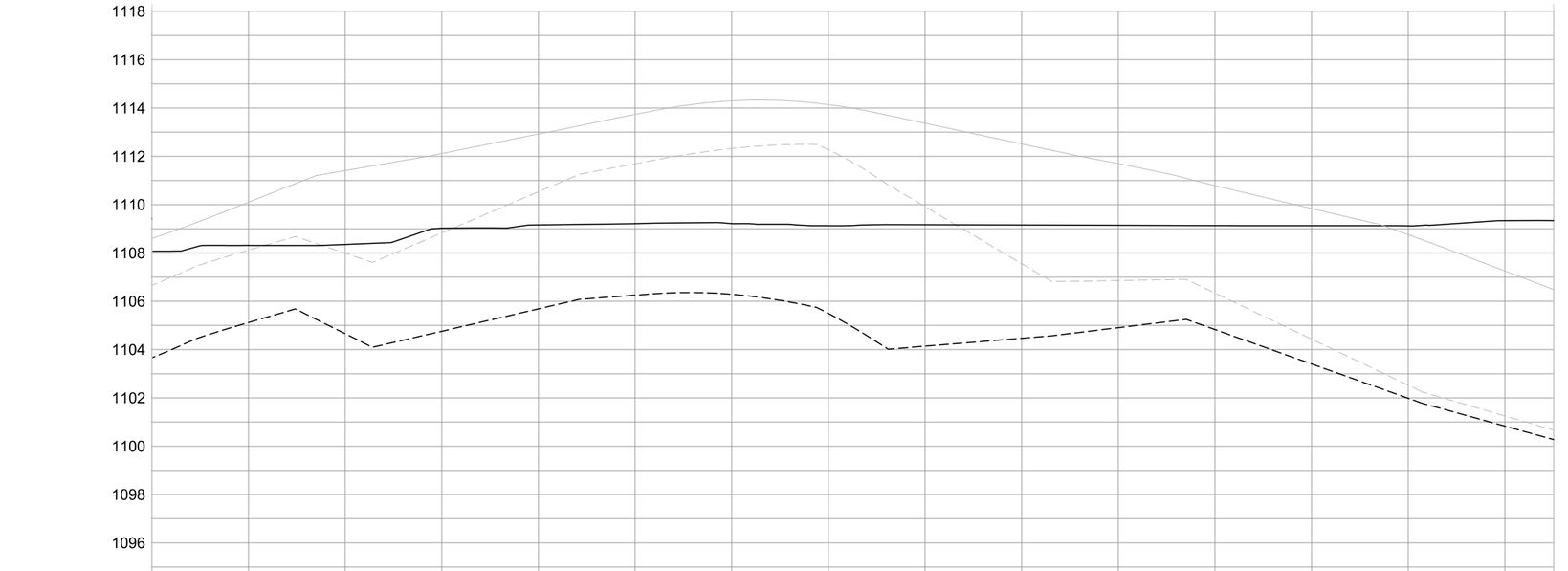
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
Digitally signed by Jeffrey Snyder DN: C=US, E=jsnyder@integratedwaterservices.com, O=Integrated Water Services, OU=TDS, CN=Jeffrey Snyder Date: 2024.09.06 13:03:29-06'00'
JEFF SNYDER
144076
9/06/24

C-004F



	4+40	4+60	4+80	5+00	5+20	5+40	5+60	5+80	6+00	6+20	6+40	6+60	6+80	7+00	7+20	7+30
EXISTING GROUND	1108.598	1110.098	1111.408	1112.116	1112.924	1113.731	1114.295	1114.140	1113.369	1112.515	1111.698	1110.785	1109.840	1108.751	1107.254	1106.482
PROPOSED GRADING	1108.073	1108.310	1108.350	1109.023	1109.157	1109.211	1109.216	1109.129	1109.169	1109.157	1109.145	1109.133	1109.129	1109.124	1109.336	1109.338
WEATHER BEDROCK	1106.658	1108.118	1107.988	1108.827	1110.532	1111.691	1112.322	1112.277	1109.919	1107.555	1106.858	1106.339	1104.432	1102.526	1101.253	1100.665
BEDROCK	1103.66	1105.12	1104.66	1104.76	1105.68	1106.25	1106.29	1105.50	1104.14	1104.47	1104.90	1104.83	1103.40	1101.98	1100.83	1100.27

ROAD CENTER LINE

EXISTING GROUND

PROPOSED GRADING

WEATHER BEDROCK

BEDROCK

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PROPOSED GRADING

DATE:	7/25/24
DESIGNED BY:	MR
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PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
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REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

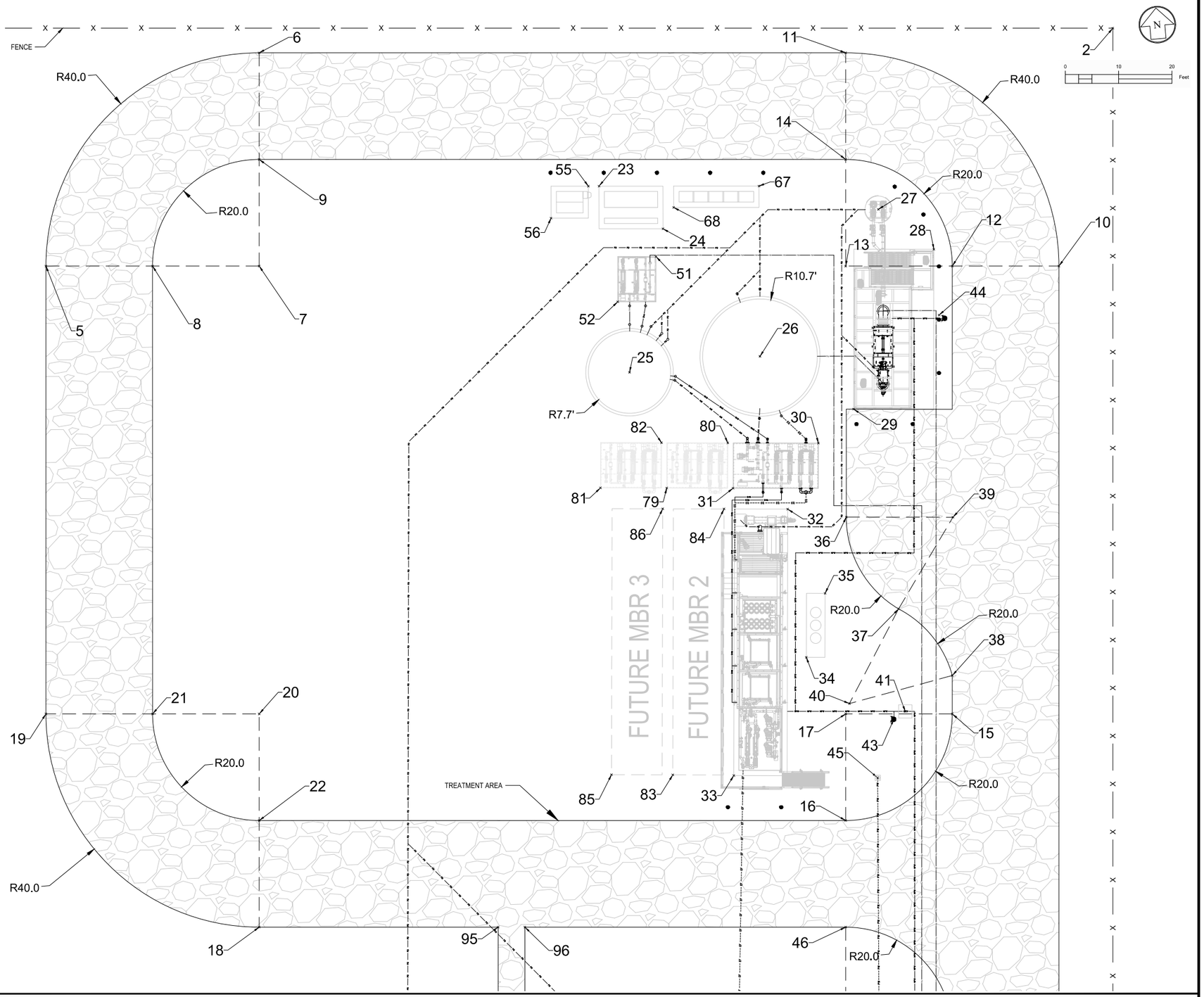
Jeffrey Snyder

JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER

9/06/24

C-004G

COORDINATE LIST			
POINT	NORTHING	EASTING	DESCRIPTION
1	13997646,9833	2261316,9504	FENCE CORNER
2	13997626,4803	2261557,3233	FENCE CORNER
3	13997347,4541	2261457,1180	FENCE CORNER
4	13997437,9769	2261299,4153	FENCE CORNER
5	13997599,0301	2261354,1351	PC
6	13997635,4858	2261397,3900	PC
7	13997595,6305	2261393,9903	RADIUS POINT
8	13997597,3303	2261374,0627	PC
9	13997615,5581	2261395,6902	PC
10	13997582,8819	2261543,4476	PC
11	13997626,1368	2261506,9920	PC
12	13997584,5817	2261523,5200	PC
13	13997586,2815	2261503,5923	RADIUS POINT
14	13997606,2091	2261505,2922	PC
15	13997500,8856	2261516,3807	PC
16	13997482,6578	2261494,7533	PC
17	13997502,5854	2261496,4531	RADIUS POINT
18	13997472,0792	2261383,4515	PC
19	13997515,3341	2261346,9958	PC
20	13997511,9344	2261386,8511	RADIUS POINT
21	13997513,6343	2261366,9235	PC
22	13997492,0068	2261385,1513	PC
23	13997605,1505	2261458,7755	GENERATOR
24	13997596,1619	2261470,0540	GENERATOR
25	13997569,8817	2261461,5118	SPU TANK CL
26	13997570,7775	2261486,1420	EQ TANK CL
27	13997596,3593	2261510,6075	LIFT STATION CL
28	13997588,0057	2261520,3433	PRIMARY FINE SCREEN
29	13997559,4229	2261502,7927	PRIMARY FINE SCREEN
30	13997553,6329	2261495,6856	EQUIPMENT SKID-1
31	13997546,5598	2261479,0055	EQUIPMENT SKID-1
32	13997541,7827	2261488,8857	MBR-1
33	13997492,8446	2261474,5657	MBR-1
34	13997513,7871	2261489,9973	CHEMICAL STORAGE
35	13997525,4364	2261494,5299	CHEMICAL STORAGE
36	13997539,3573	2261499,7083	PC
37	13997521,3576	2261508,0113	PC
38	13997508,0604	2261516,9927	PC
39	13997537,6338	2261519,6339	RADIUS POINT
40	13997504,4548	2261497,3204	RADIUS POINT
41	13997502,1048	2261507,6284	4" ISOLATION VALVE
42	13997338,3261	2261511,6491	RPZ
43	13997500,8108	2261505,3572	YARD HYDRANT
44	13997575,6311	2261520,2664	YARD HYDRANT
45	13997490,1268	2261501,4200	EYE WASH
46	13997462,7302	2261493,0535	RADIUS POINT
47	13997442,8025	2261491,3536	PC
48	13997441,1027	2261511,2813	RADIUS POINT
49	13997418,0636	2261469,0101	RWS TANK
50	13997421,6945	2261426,4432	FUTURE RWS TANK
51	13997591,0789	2261468,3020	ST PUMP SKID
52	13997583,2359	2261460,4217	ST PUMP SKID
53	13997395,9724	2261493,0774	NaOCl FRP Shed
54	13997390,5041	2261486,5892	NaOCl FRP Shed
55	13997605,3147	2261456,7822	XFMR
56	13997599,9298	2261449,2987	XFMR
57	13997372,8653	2261462,9160	BOOSTER PUMP SKID
58	13997367,5669	2261454,4350	BOOSTER PUMP SKID
59	13997373,6302	2261453,9485	FUTURE PUMP SKID
60	13997368,3319	2261445,4675	FUTURE PUMP SKID
61	13997416,1419	2261491,5383	4" ALTITUDE VALVE
62	13997397,0293	2261445,7776	4'X4' INJECTION VAULT
63	13997384,8475	2261494,0734	FUTURE HYDRO
64	13997370,7140	2261471,5104	FUTURE HYDRO
65	13997390,6894	2261440,8390	SAMPLE STATION
66	13997445,9839	2261471,8877	4'X4' INJECTION VAULT
67	13997602,6139	2261488,6681	ELECTRICAL SERVICE EQUPMENT
68	13997599,9786	2261472,3875	ELECTRICAL SERVICE EQUPMENT
69	13997341,6303	2261456,5804	FENCE CORNER
70	13997325,4308	2261516,2368	FENCE CORNER



INTEGRATED WATER SERVICES, INC. FIRM #15328

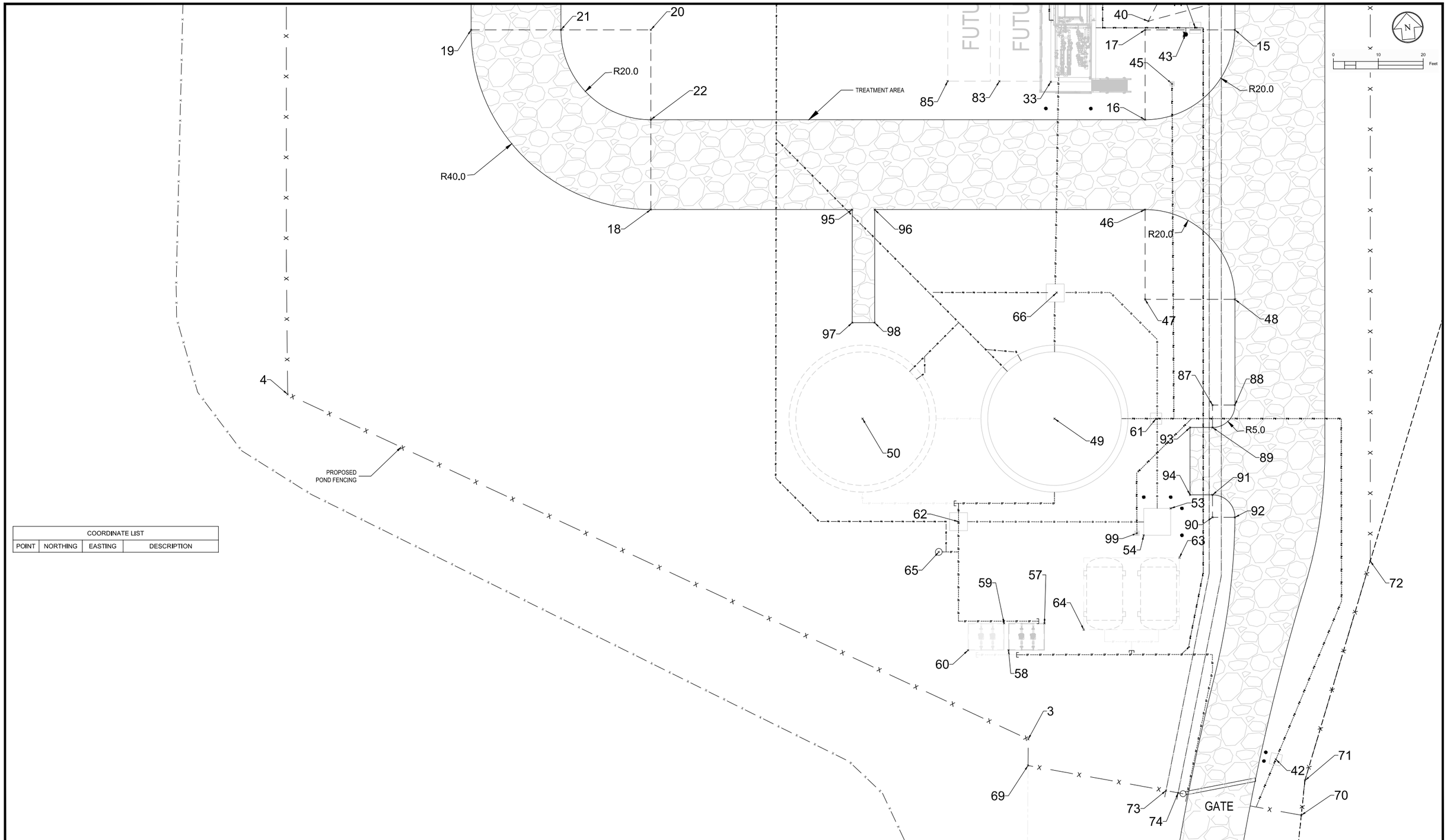
DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
DIMENSIONAL CONTROL PLAN

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

C-005A



COORDINATE LIST			
POINT	NORTHING	EASTING	DESCRIPTION

INTEGRATED WATER SERVICES, INC. FIRM #15328	DOUBLE L RANCH RECLAIMED WATER PRODUCTION FACILITY DIMENSIONAL CONTROL PLAN	DATE: 7/25/24 DESIGNED BY: MR DRAWN BY: SS CHECKED BY: SR	PROJECT START DATE: SEP 2024 PROJECT NUMBER: 539 ENGINEER OF RECORD: JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED
PROFESSIONAL ENGINEER
9/06/24

C-005B

PIPE SCHEDULE

SEE SHEET C-007A TO C-007C FOR PIPE LOCATION

NI* = Not Identified

PROCESS	DES.	SIZE (in.)	MATERIAL
INFLUENT FORCE MAIN	FM	12	C900 DR18
PD FORCE MAIN	NI*	6	PVC SCH 80
SCREENED RAW	EQ	20	DI
EQUALIZED FLOW (SUCTION)	EQ	3	PVC SCH 80
EQUALIZED FLOW (DISCHARGE)	EQ	3	PVC SCH 80
WAS (SUCTION FROM BB)	WAS	2	PVC SCH 80
WAS (DISCHARGE TO SHT)	WAS	2	PVC SCH 80
WAS (RESCREEN)	WAS	2	PVC SCH 80
SLUDGE TRANSFER (SUCTION FROM SHT)	FM	3	PVC SCH 80
SLUDGE TRANSFER (DISCHARGE FROM SLUDGE TRANSFER PUMPS)	FM	3	PVC SCH 80
AIR (EQ)	AIR	3	304 SS
AIR (SHT)	AIR	3	304 SS
PLANT DRAIN	PD	3, 6	PVC SCH 80
POTABLE WATER	PW	4	PVC SCH 80
NON-POTABLE WATER	NPW	4	PVC SCH 80
PERMEATE	EF	3,4, 6, 8	PVC SCH 80
CHLORINE INJECTION	CI	1	PVC SCH 80
DECANT	DEC	2	PVC SCH 80

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PIPE SCHEDULE

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

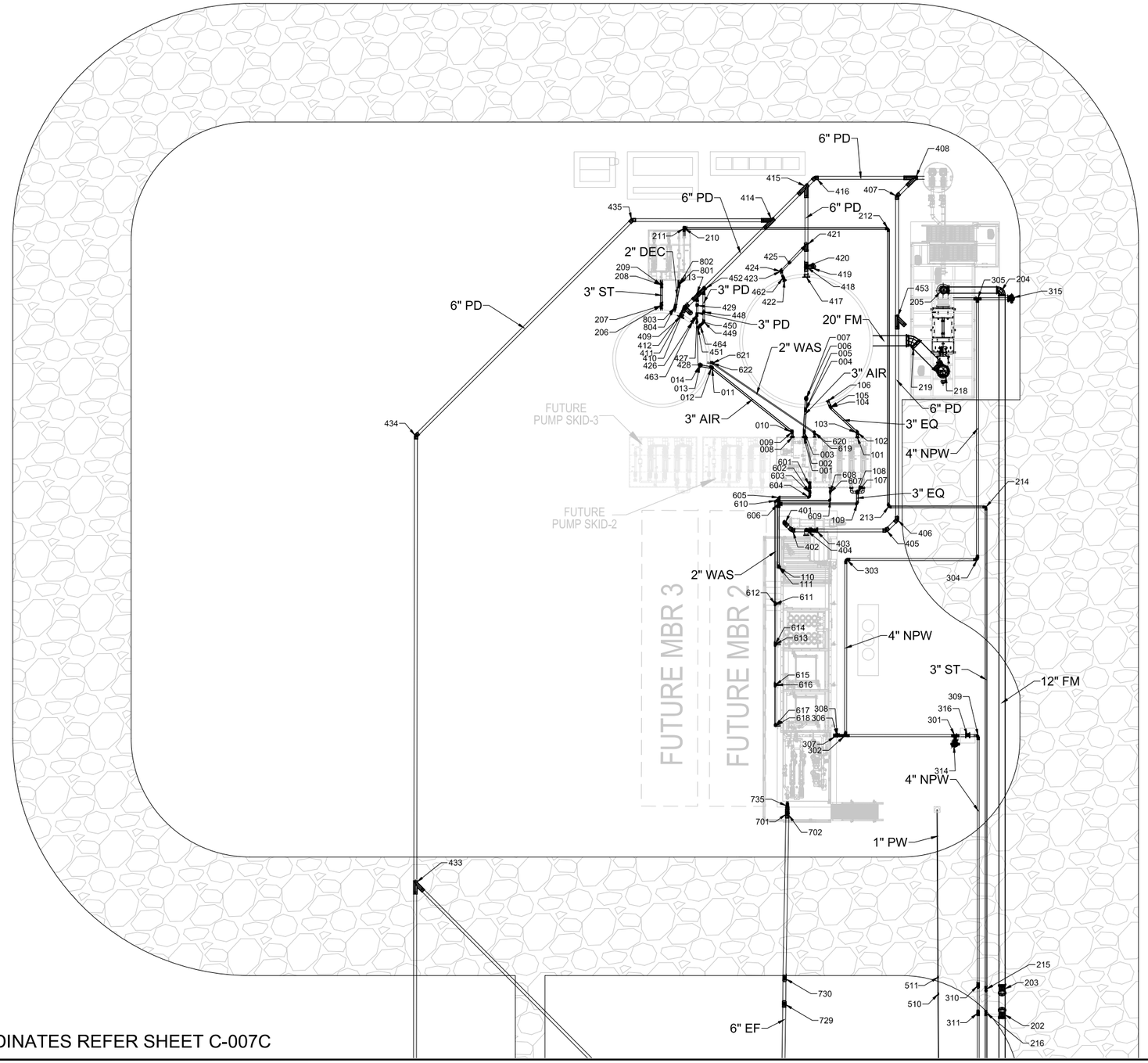
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder

JEFF SNYDER
144076
REGISTERED
PROFESSIONAL ENGINEER

9/06/24

C-006



NOTE : - FOR YARD FITTING CO-ORDINATES REFER SHEET C-007C

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
YARD PIPING PLAN

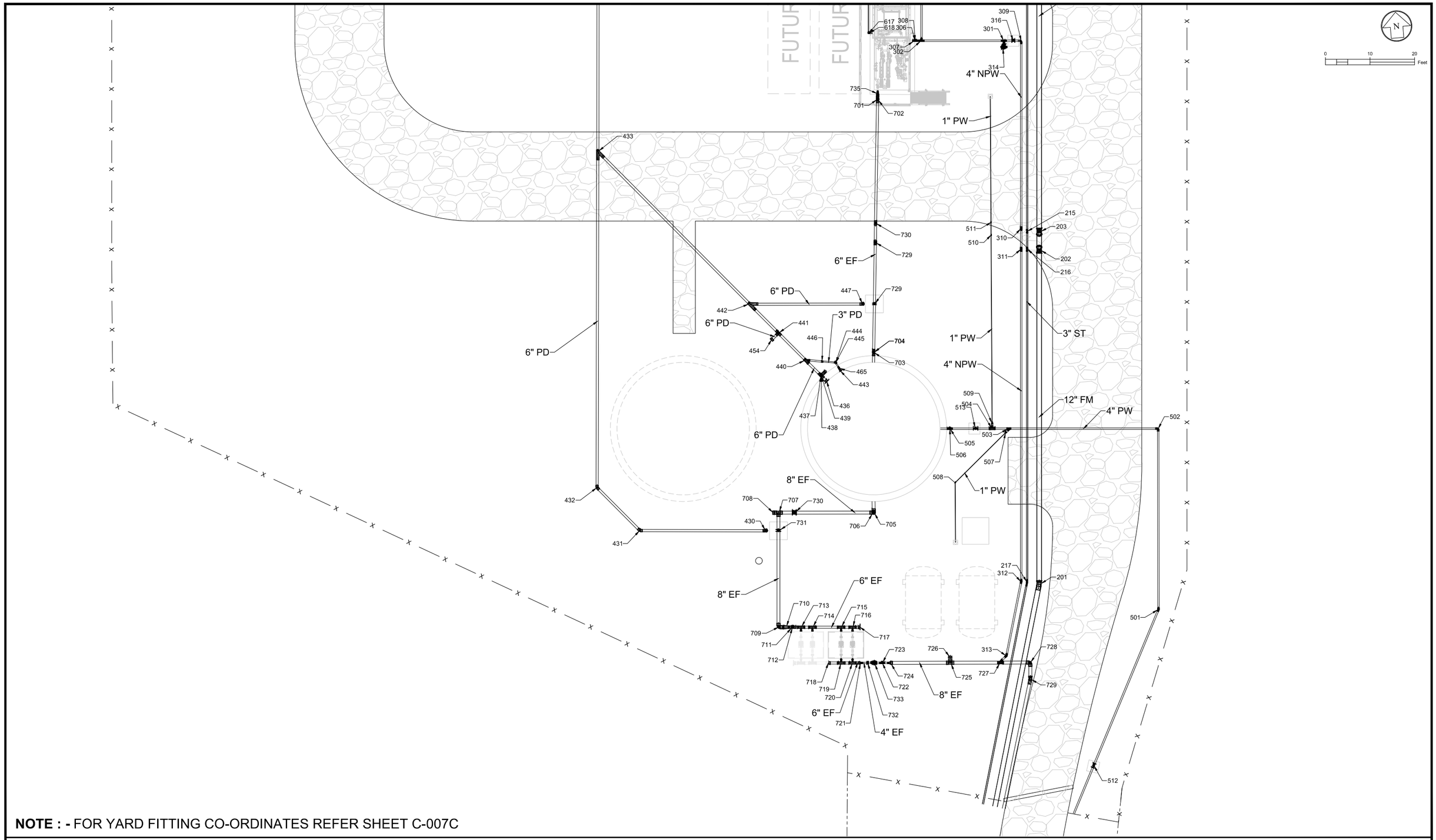
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
LICENSED
PROFESSIONAL ENGINEER
9/06/24

C-007A



NOTE : - FOR YARD FITTING CO-ORDINATES REFER SHEET C-007C

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
YARD PIPING PLAN

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

C-007B

YARD FITTING CO-ORDINATES OF AIR					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
001	2261484.395	13997554.604	1108.480	Flange_PVC_3"	3" AIR
002	2261484.478	13997555.491	1108.480	Bend 90 deg_ 3"	3" AIR
003	2261484.474	13997555.489	1103.660	Bend 90 deg_ 3"	3" AIR
004	2261485.011	13997559.169	1103.660	Bend 90 deg_ 3"	3" AIR
005	2261485.009	13997559.173	1124.400	Bend 90 deg_ 3"	3" AIR
006	2261485.289	13997561.063	1124.400	Bend 90 deg_ 3"	3" AIR
007	2261485.289	13997561.062	1124.052	Flange_PVC_3"	3" AIR
008	2261482.406	13997554.778	1108.480	Flange_PVC_3"	3" AIR
009	2261482.489	13997555.665	1108.480	Bend 90 deg_ 3"	3" AIR
010	2261482.484	13997555.663	1103.660	Bend 90 deg_ 3"	3" AIR
011	2261469.840	13997567.651	1103.618	Bend 90 deg_ 3"	3" AIR
012	2261469.835	13997567.647	1124.400	Bend 90 deg_ 3"	3" AIR
013	2261467.941	13997568.151	1124.400	Bend 90 deg_ 3"	3" AIR
014	2261467.938	13997568.159	1124.052	Flange_PVC_3"	3" AIR

YARD FITTING CO-ORDINATES OF EQ					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
101	2261493.358	13997553.791	1110.180	Flange_PVC_3"	3" EQ
102	2261493.428	13997554.584	1110.180	Bend 90 deg_ 3"	3" EQ
103	2261493.426	13997554.584	1103.000	Bend 90 deg_ 3"	3" EQ
104	2261489.216	13997559.292	1103.000	Bend 90 deg_ 3"	3" EQ
105	2261489.216	13997559.292	1108.250	Bend 90 deg_ 3"	3" EQ
106	2261488.927	13997560.380	1108.250	Flange_PVC_3"	3" EQ
107	2261492.577	13997544.590	1108.635	Flange_PVC_3"	3" EQ
108	2261492.577	13997544.590	1105.500	Bend 90 deg_ 3"	3" EQ
109	2261492.412	13997542.651	1105.500	Bend 90 deg_ 3"	3" EQ
110	2261478.197	13997533.153	1105.500	Bend 90 deg_ 3"	3" EQ
111	2261478.197	13997533.153	1119.906	Bend 90 deg_ 3"	3" EQ

YARD FITTING CO-ORDINATES OF FM					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
201	2261503.034	13997380.093	1106.449	Bend 11.25 deg_ 12"	12" FM
202	2261509.416	13997454.905	1106.450	Bend 45 deg_ 12"	12" FM
203	2261509.762	13997458.887	1102.000	Bend 45 deg_ 12"	12" FM
204	2261519.790	13997576.518	1102.000	Bend 90 deg_ 12"	12" FM
205	2261509.929	13997577.359	1102.000	Bend 90 deg_ 12"	12" FM
206	2261462.290	13997578.796	1108.250	Bend 90 deg_ 3"	3" FM
207	2261462.290	13997578.796	1102.850	Bend 90 deg_ 3"	3" FM
208	2261462.597	13997582.294	1102.850	Bend 90 deg_ 3"	3" FM
209	2261462.597	13997582.294	1109.802	Bend 90 deg_ 3"	3" FM
210	2261467.216	13997591.455	1108.635	Bend 90 deg_ 3"	3" FM
211	2261467.210	13997591.439	1102.250	Bend 90 deg_ 3"	3" FM
212	2261501.573	13997588.508	1102.250	Bend 90 deg_ 3"	3" FM
213	2261497.571	13997541.702	1102.250	Bend 90 deg_ 3"	3" FM
214	2261513.991	13997540.301	1102.250	Bend 90 deg_ 3"	3" FM
215	2261507.074	13997459.212	1102.250	Bend 45 deg_ 3"	3" FM
216	2261506.734	13997455.227	1106.250	Bend 45 deg_ 3"	3" FM
217	2261500.387	13997380.829	1106.250	Bend 11.25 deg_ 3"	3" FM
218	2261508.728	13997563.708	1121.528	Bend 90 deg_ 20"	20" FM
219	2261504.017	13997569.290	1121.476	Bend 45 deg_ 20"	20" FM

YARD FITTING CO-ORDINATES OF NPW					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
301	2261505.530	13997502.284	1103.500	Tee_ 4"	4" NPW
302	2261487.098	13997503.859	1103.500	Tee_ 4"	4" NPW
303	2261489.661	13997533.478	1103.500	Bend 90_ 4"	4" NPW
304	2261511.800	13997531.549	1103.500	Bend 90_ 4"	4" NPW
305	2261515.531	13997575.413	1103.500	Tee_ 4"	4" NPW
306	2261485.726	13997503.973	1103.500	Bend 90_ 4"	4" NPW
307	2261485.731	13997503.973	1109.656	Tee_ 4"	4" NPW
308	2261485.726	13997503.973	1110.740	Bend 90_ 4"	4" NPW
309	2261509.393	13997501.959	1103.500	Bend 90_ 4"	4" NPW
310	2261505.808	13997459.953	1103.500	Bend 45_ 4"	4" NPW
311	2261505.416	13997455.340	1108.127	Bend 45_ 4"	4" NPW
312	2261499.081	13997381.044	1108.116	Bend 11.25_ 4"	4" NPW
313	2261494.366	13997364.734	1108.116	Bend 45_ 4"	4" NPW

YARD FITTING CO-ORDINATES OF PD					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
401	2261479.886	13997540.472	1104.500	Bend 90_ 6"	6" PD
402	2261480.998	13997539.152	1104.475	Bend 45_ 6"	6" PD
403	2261484.970	13997538.781	1104.413	Wye 45 deg_ 6"X 4"	6" PD
404	2261483.419	13997538.914	1105.961	Bend 45_ 4"	4" PD
405	2261496.854	13997537.773	1104.180	Bend 45_ 6"	6" PD
406	2261498.853	13997539.399	1104.134	Bend 45_ 6"	6" PD
407	2261503.492	13997593.836	1102.946	Bend 45_ 6"	6" PD
408	2261506.793	13997596.636	1102.861	Wye 45 deg_ 6"	6" PD
409	2261465.364	13997576.613	1122.833	Flange_6"	6" PD
410	2261466.203	13997578.051	1122.833	Bend 90 deg_ 6"	6" PD
411	2261466.225	13997578.082	1109.500	Wye 45 deg_ 6"	6" PD
412	2261466.264	13997578.120	1103.819	Bend 90_ 6"	6" PD
413	2261468.448	13997579.955	1103.800	Wye 45 deg_ 6"X 4"	6" PD
414	2261482.195	13997591.533	1103.490	Wye 45 deg_ 6"	6" PD
415	2261488.376	13997596.752	1103.281	Wye 45 deg_ 6"	6" PD
416	2261489.947	13997598.075	1103.145	Bend 45_ 6"	6" PD
417	2261487.052	13997581.539	1122.833	Flange_6"	6" PD
418	2261487.180	13997583.196	1122.833	Bend 90 deg_ 6"	6" PD
419	2261487.216	13997583.224	1109.500	Wye 45 deg_ 6"	6" PD
420	2261487.215	13997583.288	1103.525	Bend 90_ 6"	6" PD
421	2261487.517	13997586.885	1103.475	Wye 45 deg_ 6"X 4"	6" PD
422	2261483.327	13997581.163	1108.250	Flange_3"	3" PD
423	2261482.882	13997582.842	1108.250	Bend 90 deg_ 3"	3" PD
424	2261482.881	13997582.845	1103.576	Bend 90 deg_ 3"	3" PD
425	2261484.403	13997584.177	1103.541	Reducer_ 4" X 3"	4" PD
426	2261467.175	13997575.563	1108.250	Flange_3"	3" PD
427	2261468.155	13997576.611	1108.250	Bend 90 deg_ 3"	3" PD
428	2261468.153	13997576.613	1103.907	Bend 90 deg_ 3"	3" PD
429	2261468.298	13997578.296	1103.866	Reducer_ 4" X 3"	4" PD
430	2261443.048	13997397.272	1108.712	Bend 90_ 6"	6" PD
431	2261414.813	13997399.730	1108.152	Bend 45_ 6"	6" PD
432	2261406.066	13997410.139	1107.886	Bend 45_ 6"	6" PD
433	2261412.637	13997485.271	1106.344	Wye 45 deg_ 6"	6" PD
434	2261419.148	13997560.427	1104.875	Bend 45_ 6"	6" PD
435	2261458.607	13997593.597	1103.911	Bend 45_ 6in	6" PD

YARD FITTING CO-ORDINATES OF PD					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
436	2261459.430	13997429.478	1126.833	Flange_6"	6" PD
437	2261458.274	13997430.904	1126.833	Bend 90_ 6"	6" PD
438	2261458.270	13997430.899	1113.500	Wye 45 deg_ 6"	6" PD
439	2261458.274	13997430.904	1105.762	Bend 90_ 6"	6" PD
440	2261455.083	13997434.647	1105.762	Wye 45 deg_ 6"X 4"	6" PD
441	2261449.551	13997441.256	1105.505	Bend 90_ 6"	6" PD
442	2261443.642	13997448.302	1105.360	Wye 45 deg_ 6"	6" PD
443	2261462.719	13997431.551	1112.000	Flange_3"	3" PD
444	2261461.780	13997433.567	1112.000	Bend 90 deg_ 3"	3" PD
445	2261461.772	13997433.559	1105.797	Bend 90 deg_ 3"	3" PD
446	2261458.816	13997434.042	1105.779	Reducer_ 4" X 3"	4" PD
447	2261469.001	13997446.100	1105.830	Bend 90_ 6"	6" PD
448	2261469.326	13997577.098	1103.866	Reducer_ 4" X 3"	4" PD
449	2261469.171	13997575.416	1103.907	Bend 90 deg_ 3"	3" PD
450	2261469.174	13997575.415	1108.250	Bend 90 deg_ 3"	3" PD
451	2261468.076	13997574.491	1108.250	Flange_3"	3" PD
452	2261469.650	13997580.968	1103.800	Wye 45 deg_ 6"X 4"	6" PD
453	2261501.749	13997573.385	1104.049	Wye 45 deg_ 6"	6" PD
454	2261447.965	13997439.913	1105.505	Cap_ 6"	6" PD

YARD FITTING CO-ORDINATES OF PW					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
501	2261529.226	13997372.167	1106.800	Bend 22.5_ 4"	4" PW
502	2261532.612	13997412.638	1106.800	Tee_4"x 4"	4" PW
503	2261499.222	13997415.486	1106.800	Wye Bend 4"X1"	4" PW
504	2261495.496	13997415.804	1106.800	Tee_4"	4" PW
505	2261486.018	13997416.608	1106.800	Bend 90_ 4"	4" PW
506	2261486.018	13997416.608	1112.500	Bend 90_ 4"	4" PW
507	2261498.455	13997414.671	1106.590	Reducer (Conc)_4"X1"	1" PW
508	2261486.197	13997404.410	1106.800	Bend 45_ 1"	1" PW
509	2261495.590	13997416.988	1106.800	Reducer (Conc)_4"X1"	1" PW
510	2261498.941	13997459.066	1106.800	Bend 45_ 1"	1" PW
511	2261499.170	13997461.907	1103.950	Bend 45_ 1"	1" PW

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
YARD PIPING PLAN

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144075
LICENSED
PROFESSIONAL ENGINEER
9/06/24

C-007C

YARD FITTING CO-ORDINATES OF WAS					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
601	2261484.642	13997546.412	1108.640	Reducer(CONC)_ 3inX2in	2" WAS
602	2261484.550	13997545.256	1108.640	Bend 90 deg_ 3"	2" WAS
603	2261484.540	13997545.254	1105.504	Bend 90 deg_ 3"	2" WAS
604	2261484.479	13997544.427	1105.495	Bend 90 deg_ 3"	2" WAS
605	2261479.196	13997544.877	1105.495	Bend 90 deg_ 3"	2" WAS
606	2261479.107	13997543.791	1105.493	Base Tee_ 3"	2" WAS
607	2261488.008	13997544.971	1109.802	Bend 90 deg_ 2"	2" WAS
608	2261488.008	13997544.971	1102.693	Bend 90 deg_ 2"	2" WAS
609	2261487.887	13997543.567	1102.693	Bend 90 deg_ 2"	2" WAS
610	2261478.618	13997544.365	1102.693	Bend 90 deg_ 2"	2" WAS
611	2261477.136	13997527.021	1102.693	Base Tee_ 2"	2" WAS
612	2261477.140	13997527.024	1107.750	Bend 90 deg_ 2"	2" WAS
613	2261476.553	13997520.215	1102.693	Base Tee_ 2"	2" WAS
614	2261476.556	13997520.218	1107.750	Bend 90 deg_ 2"	2" WAS
615	2261475.970	13997513.374	1102.693	Base Tee_ 2"	2" WAS
616	2261475.973	13997513.377	1107.750	Bend 90 deg_ 2"	2" WAS
617	2261475.392	13997506.534	1102.693	Bend 90 deg_ 2"	2" WAS
618	2261475.392	13997506.534	1107.750	Bend 90 deg_ 2"	2" WAS
619	2261486.227	13997555.206	1108.635	Bend 90 deg_ 2"	2" WAS
620	2261486.226	13997555.207	1102.251	Bend 90 deg_ 2"	2" WAS
621	2261470.011	13997568.384	1102.251	Bend 90 deg_ 2"	2" WAS
622	2261470.007	13997568.384	1122.000	Bend 90 deg_ 2"	2" WAS

YARD FITTING CO-ORDINATES OF EF					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
701	2261476.163	13997491.552	1109.781	Bend 90_ 6"	6" EF
702	2261476.162	13997491.552	1103.713	Bend 90_ 6"	6" EF
703	2261470.462	13997435.081	1108.043	Bend 90_ 6"	6" EF
704	2261470.460	13997435.082	1123.500	Bend 90_ 6"	6" EF
705	2261467.412	13997399.278	1112.500	Bend 90_ 8"	8" EF
706	2261467.412	13997399.278	1107.623	Bend 90_ 8"	8" EF
707	2261446.124	13997401.087	1107.623	Tee_ 8"	8" EF
708	2261444.992	13997401.184	1107.623	Cap_ 8"	8" EF
709	2261443.939	13997375.481	1107.623	Bend 90_ 8"	8" EF
710	2261445.630	13997375.336	1107.623	Reducer_ 8"X6"	8" EF
711	2261447.110	13997375.210	1107.623	Bend 90_ 6"	6" EF
712	2261447.110	13997375.210	1112.490	Bend 90_ 6"	6" EF
713	2261448.984	13997375.047	1112.490	Tee (Red)-6" x 3"	6" EF
714	2261451.529	13997374.830	1112.490	Tee (Red)-6" x 3"	6" EF
715	2261457.944	13997374.282	1112.490	Tee (Red)-6" x 3"	6" EF
716	2261460.506	13997374.064	1112.490	Tee (Red)-6" x 3"	6" EF
717	2261462.168	13997373.910	1112.490	Flange_6"	6" EF
718	2261454.409	13997366.533	1112.490	Flange_6"	6" EF
719	2261457.277	13997366.292	1112.490	Tee (Red)-6" x 3"	6" EF
720	2261459.822	13997366.075	1112.490	Tee (Red)-6" x 3"	6" EF
721	2261461.583	13997365.931	1112.490	Reducer(CONC)_ 6"X4"	6" EF
722	2261466.442	13997365.529	1112.490	Bend 90_ 6"	6" EF
723	2261466.442	13997365.529	1108.123	Bend 90_ 6"	6" EF
724	2261468.171	13997365.385	1108.123	Reducer(CONC)_ 8"X4"	8" EF
725	2261481.652	13997364.269	1108.123	Tee_ 8"	8" EF
726	2261481.762	13997365.591	1108.123	Cap_ 8"	8" EF
728	2261499.571	13997362.784	1108.123	Bend 90_ 8"	8" EF
729	2261472.934	13997459.624	1108.043	Bend 45_ 6"	8" EF
729	2261499.263	13997359.061	1108.123	Bend 11.25_ 8"	6" EF
730	2261473.340	13997463.938	1103.713	Bend 45_ 6"	6" EF
731	2261446.635	13997367.176	1112.490	Flange_6"	6" EF
732	2261454.309	13997366.542	1112.490	Flange_6"	6" EF
733	2261450.861	13997366.822	1112.490	Tee (Red)-6" x 3"	6" EF
734	2261448.299	13997367.034	1112.490	Tee (Red)-6" x 3"	6" EF
735	2261476.295	13997492.867	1109.781	Reducer(CONC)_ 6"X4"	6" EF

YARD FITTING CO-ORDINATES OF DEC					
FITTING NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
801	2261465.555	13997582.045	1108.635	Bend 90 deg_ 2"	2" DEC
802	2261465.557	13997582.046	1102.850	Bend 90 deg_ 2"	2" DEC
803	2261464.582	13997578.293	1102.850	Bend 90 deg_ 2"	2" DEC
804	2261464.571	13997578.296	1108.250	Bend 90 deg_ 2"	2" DEC

YARD APPURTENANCE CO-ORDINATES					
APPURTENANCE NUMBER	EASTING	NORTHING	ELEVATION (CP)	DESCRIPTION	ALIGNMENT NUMBER & DRAWING REF
314	2261505.476	13997501.569	1103.500	Fire Hydrant_ 48"	4" NPW
315	2261520.576	13997574.990	1103.500	Fire Hydrant_ 48"	4" NPW
316	2261507.628	13997502.105	1103.500	4" Isolation Valve	4" NPW
462	2261483.178	13997581.719	1108.250	PLUG VALVE 3"	3" PD
463	2261467.567	13997575.985	1108.250	PLUG VALVE 3"	3" PD
464	2261468.515	13997574.863	1108.250	PLUG VALVE 3"	3" PD
465	2261462.415	13997432.206	1112.000	PLUG VALVE 3"	3" PD
512	2261511.775	13997338.533	1106.800	Back Flow Preventer	4" PW
513	2261491.786	13997416.116	1106.800	4" Altitude Valve	4" PW
729	2261471.556	13997445.925	1108.042	4' X 4' Injection Vault	6" EF
730	2261449.664	13997400.787	1107.623	Gate Valve_8"	8" EF
731	2261445.784	13997397.101	1107.623	4' X 4' Injection Vault	8" EF
732	2261463.194	13997365.798	1112.490	1" Air Relief Valve	4" EF
733	2261464.689	13997365.676	1112.490	4" Flow Meter	4" EF

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
YARD PIPING PLAN

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
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PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

C-007D

SITE DESCRIPTION

PROJECT LOCATION: CITY OF DRIPPING SPRINGS
IN HAYS COUNTY, TEXAS

CONTACT AND PHONE NO.: INTEGRATED WATER SERVICES
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PROJECT DESCRIPTION: CONSTRUCTION OF A RAW WATER PRODUCTION WASTEWATER TREATMENT FACILITIES INCLUDING EQUIPMENT PADS, TANKS, TREATMENT PLANT, CONTROL BUILDING, ELECTRICAL COMPONENTS AND BACKUP GENERATOR

MAJOR SOIL DISTURBING ACTIVITIES: PAD PREPARATION FOR BUILDING AND STORAGE FACILITIES INCLUDING EQUIPMENT PADS,TANKS,ELECTRICAL COMPONENTS, AND TREATMENT PLANT.

TOTAL PROJECT AREA: 1.452 ACRES

TOTAL AREA TO BE DISTURBED: 1.452 ACRES

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

SITE HAS HEAVY GRASS COVER OVER PROJECT SITE

DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:

WATER TO BE DISCHARGED INTO ADJACENT CREEK

NAME OF RECEIVING WATERS:

TRIBUTARY OF LITTLE BARTON CREEK

IDENTIFY STORMWATER DISCHARGE POINT:

TRIBUTARY OF LITTLE BARTON CREEK

A DESCRIPTION AND TIME FRAME FOR INSTALLATION OF STABILIZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION:

SILT FENCE AND CONSTRUCTION ENTRANCE WILL BE INSTALLED PRIOR TO START OF CONSTRUCTION.

PROJECT IS ANTICIPATED TO LAST APPROXIMATELY NINE TO TEN MONTHS.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ___ TEMPORARY SEEDING
- _X_ PERMANENT PLANTING, SODDING, OR SEEDING
- _X_ MULCHING
- ____ SOIL RETENTION BLANKET
- ____ BUFFER ZONES
- ____ PRESERVATION OF NATURAL RESOURCES

OTHER:

DISTRUBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED TEMPORARILY OR PERMANENTLY, SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME AND DONE WITHIN 21 DAYS.

STRUCTURAL PRACTICES:

- _X_ SILT FENCES
- ____ HAY BALES
- ____ GRAVEL FILTRATION BAGS
- ____ ROCK BERMS
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- _X_ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ____ DIVERSION DIKE AND SWALE COMBINATIONS
- ____ ROCK BEDDING AT CONSTRUCTION EXIT
- ____ TIMBER MATTING AT CONSTRUCTION EXIT
- ____ CHANNEL LINERS
- ____ SEDIMENT TRAPS
- ____ SEDIMENT BASINS
- ____ STORM INLET SEDIMENT TRAP
- ____ STONE OUTLET STRUCTURES
- ____ CURBS AND GUTTERS
- ____ STORM SEWERS
- ____ GEOTEXTILES

OTHER: CONSTRUCTION ENTRANCE

NARRATIVE – SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:
THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

UTILITY LOCATES
INSTALLATION OF SWPP MEASURES
MODIFICATION, REPAIR & CLEANING OF SWPPP MEASURES
REVEGETATION
REMOVAL OF SWPPP MEASURES

A DESCRIPTION OF MAINTENANCE PROCEDURES FOR CONTROL MEASURES USED:

REMOVAL OF SILT AND DEBRIS ALONG SILT FENCE AS REQUIRED
CLEANING OF CONSTRUCTION ENTRANCE

STORMWATER MANAGEMENT:

SITE DRAINS TO ADJACENT STORMWATER DETENSION BASIN

A DESCRIPTION OF PERMANENT STORMWATER MANAGEMENT CONTROLS:

CONTRACTOR TO DETERMINE

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

INSPECTION:

AN INSPECTION WILL BE PERFORMED BY THE OWNER OR CONTRACTOR'S REPRESENTATIVE EVERY 14 DAYS AS WELL AS AFTER 1/2" OR MORE OF RAIN (AS RECORDED ON A NON-FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION RESULTS. THE CONTROLS SHALL BE CORRECTED BEFORE THE NEST SCHEDULED INSPECTION.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING,MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENTS, THE NATIONAL RESPONSE CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MADE TO THE SWPPP. IN THE EVENT OF A LIFE THREATENING SPILL THE NORTH HAYS-COUNTY FIRE DEPARTMENT SHOULD BE NOTIFIED AS WELL AS APPROPRIATE CITY INSPECTORS.

SANITARY WASTE: CONTRACTOR WILL PROVIDE PORTABLE TOLIET FACILITIES

OFFSITE EXCAVATION SOURCE LOCATION:

OFFSITE FILL SOURCE LOCATION: FROM VENDORS TO BE DETERMINED DURING CONSTRUCTION.

OFFSITE VEHICLE TRACKING: OFF-SITE VEHICLE TRACKING WILL BE HANDLED BY CONTRACTOR IF THEY ARE HIS VEHICLES. VENDORS WILL BE RESPONSIBLE FOR THEIR VEHICLES

- _X_ HAUL ROADS DAMPENED FOR DUST CONTROL
- ____ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- _X_ EXCESS DIRT ON ROAD REMOVED DAILY
- _X_ STABILIZED CONSTRUCTION ENTRANCE

OTHER:

CERTIFICATION THAT SITE DISTURBANCE AND / OR DISCHARGES WILL NOT EFFECT LISTED ENDANGERED SPECIES AND THEIR HABITAT.
WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS?

CONTRACTOR SHALL HALT CONSTRUCTION AND NOTIFY OWNER IF ANY EVIDENCE OF ANY HISTORICAL ARTIFACTS OR ENDANGERED SPECIES ARE ENCOUNTERED DURING CONSTRUCTION.

REMARKS:

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING, DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK.

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SWPP DETAILS

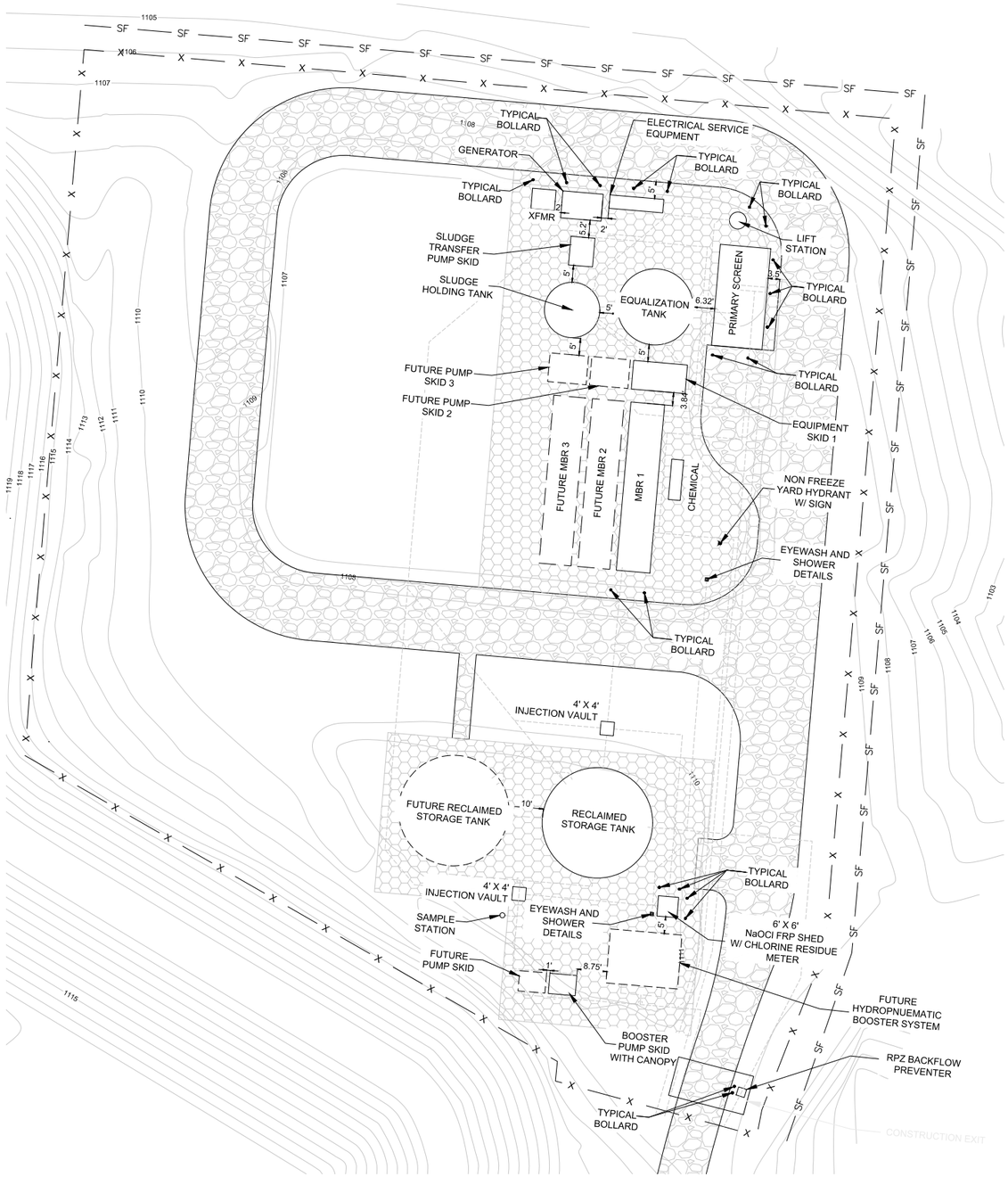
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

C-008A



SWPPP REQUIREMENTS:

PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL SUBMIT AN NOI TO LOCAL JURISDICTION, POST REQUIRED SITE NOTICES, AND IMPLEMENT THE SWPPP MEASURES APPLICABLE TO THAT PHASE OF WORK. THE MINIMUM SWPPP MEASURES FOR THIS PROJECT ARE LISTED BELOW AND ABOVE. THE CONTRACTOR MAY MODIFY THESE MEASURES AS LONG AS THE SAME LEVEL OF PROTECTION IS PROVIDED. A SWPPP PERMIT HAS BEEN APPLIED FOR FROM BEXAR COUNTY.

CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING CONSTRUCTION ENTRANCES, CONCRETE WASHOUT PITS, TRASH AND RECYCLING CONTAINERS AND RESTROOM FACILITIES.

SITE WORK:

CONSTRUCTION ENTRANCE(S)

CONCRETE WASHOUT "PITS"

CONTRACTOR SHALL ESTABLISH WASHOUT FACILITIES AS REQUIRED FOR CONCRETE WASHOUT WASTE. FACILITIES MAY BE PITS, TANKS, OR OTHER FACILITIES DESIGNED FOR THIS PURPOSE.

NOTES:

THE SWPPP PROGRAM SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION OF THE ENTIRE PROJECT.

REFER TO "SWPPP–HARD ROCK HOTEL AND CASINO–TEJON" BY ACORN ENVIRONMENTAL 12/28/23, PAGE 42 FOR EROSION CONTROL DIAGRAM.

LEGEND

- SF — SILT FENCING
- PROPERTY LINE
- LIMITS OF CONSTRUCTION
- 620 — EXISTING CONTOUR
- 620 — FINISH CONTOUR
- INLET PROTECTION
- CONSTRUCTION EXIT

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DOUBLE L RANCH
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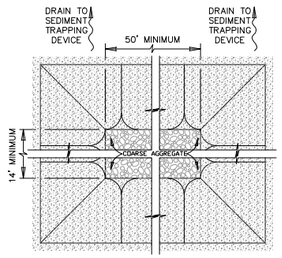
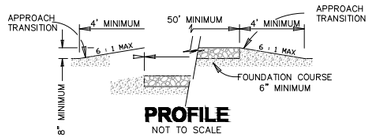
Jeffrey Snyder — 144076 — Licensed Professional Engineer — 9/06/24

C-008B



PLAN
NOT TO SCALE

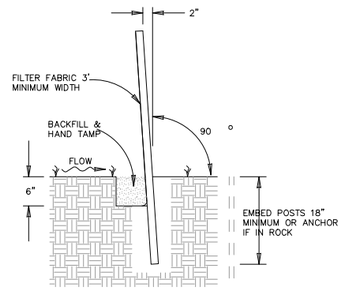


PROFILE
NOT TO SCALE

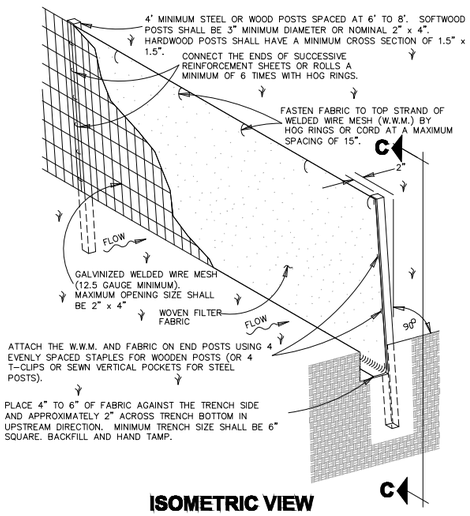
GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT - TYPE 1



SECTION C-C
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE

SEDIMENT CONTROL FENCE USAGE GUIDELINES

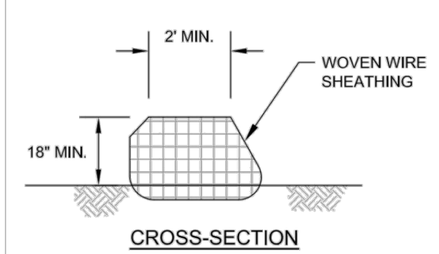
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM / FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

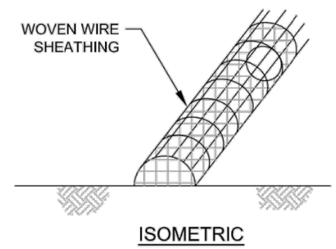
GENERAL NOTES

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE



CROSS-SECTION



ISOMETRIC

GENERAL NOTES

1. USE ONLY OPEN GRADED ROCK 4-8 INCH DIAMETER FOR STREAM FLOW CONDITIONS. USE OPEN GRADED ROCK 3-5 INCH DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN APPROVED SITE AND IN A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS. SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM DETAILS
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SWPP DETAILS

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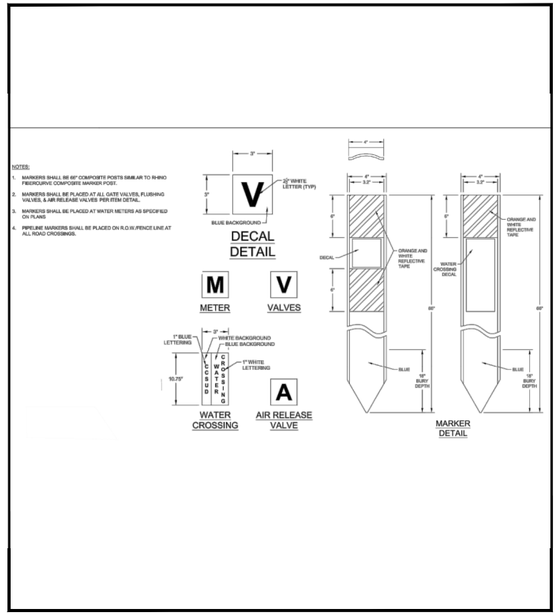
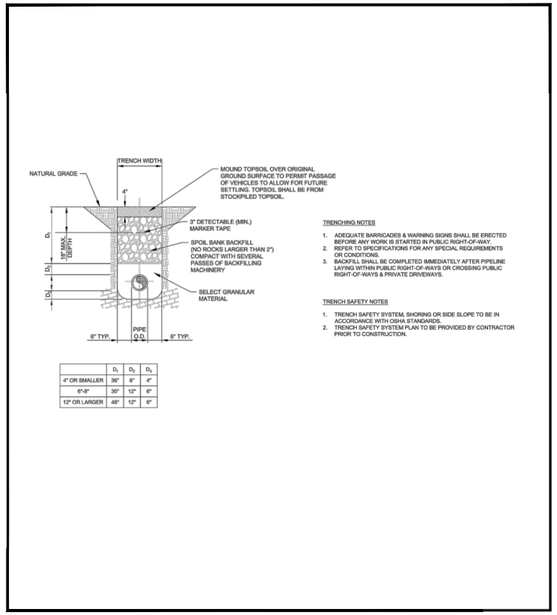
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

C-008C

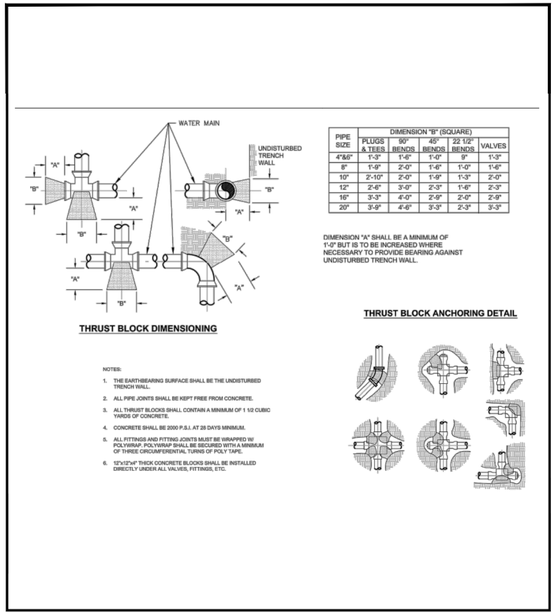


1 MARKER DETAILS
NOT TO SCALE



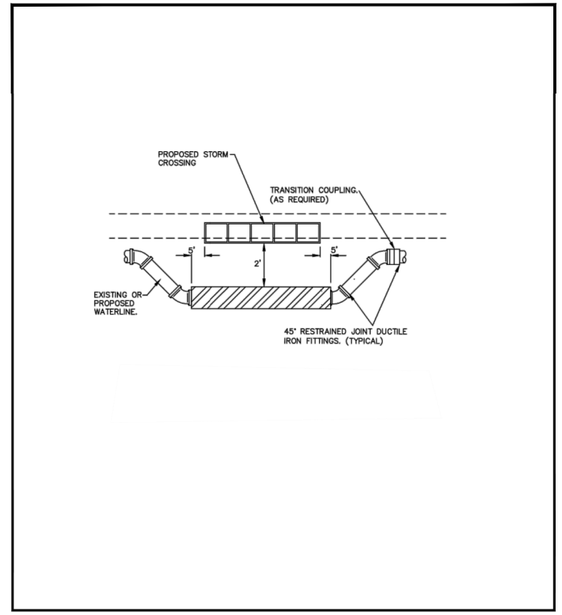
	D_1	D_2	D_3
4" OR SMALLER	36"	6"	4"
6"-8"	30"	12"	6"
12" OR LARGER	48"	12"	8"

2 TYPICAL TRENCH BACKFILL DETAILS
NOT TO SCALE

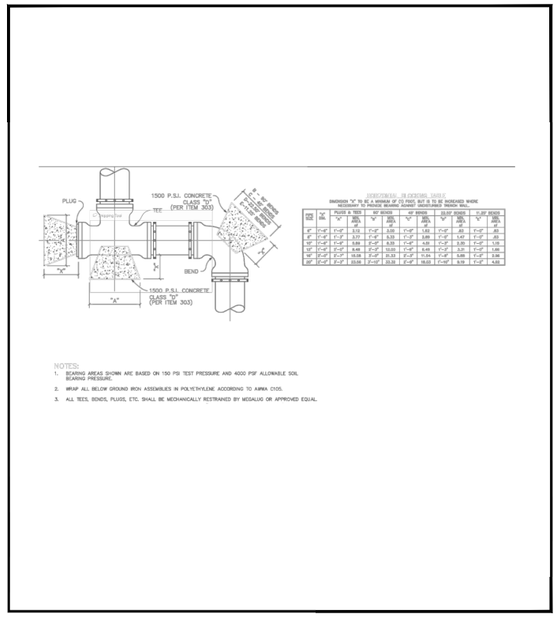


PIPE SIZE	DIMENSION "B" (SQUARE)				
	PLUGS & TEES	90° BENDS	45° BENDS	22 1/2° BENDS	VALVES
4"&6"	1'-3"	1'-6"	1'-0"	9"	1'-3"
8"	1'-9"	2'-0"	1'-6"	1'-0"	1'-6"
10"	2'-10"	2'-0"	1'-9"	1'-3"	2'-0"
12"	2'-6"	3'-0"	2'-3"	1'-6"	2'-3"
16"	3'-3"	4'-0"	2'-9"	2'-0"	2'-9"
20"	3'-9"	4'-6"	3'-3"	2'-3"	3'-3"

3 THRUST BLOCK ANCHORING DETAILS
NOT TO SCALE



4 WATERLINE ADJUSTMENT DETAIL
NOT TO SCALE



5 THRUST BLOCK DETAIL
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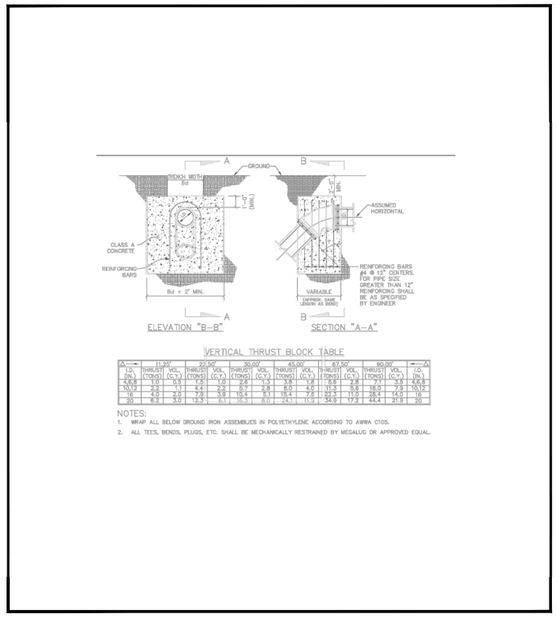
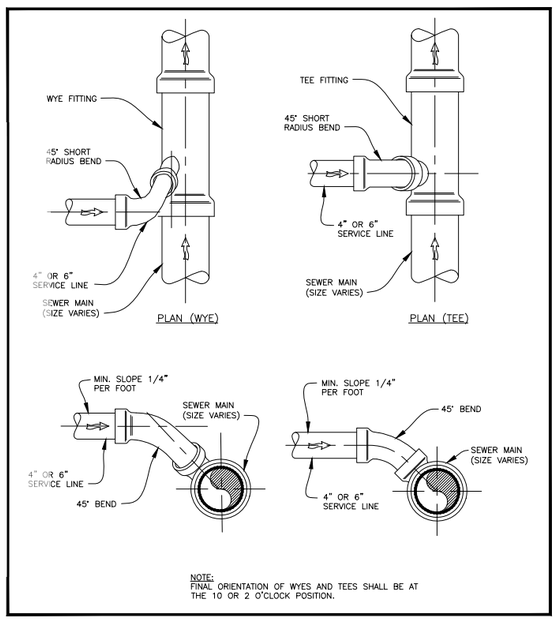
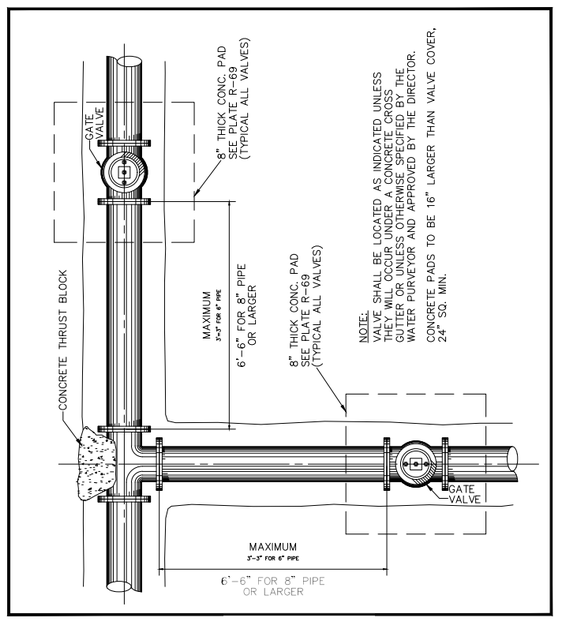


6 THRUST BLOCKING BEND DETAIL
NOT TO SCALE



7 WYE & TEE CONNECTIONS
NOT TO SCALE



8 VALVE INSTALLATION
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
MISCELLANEOUS DETAILS

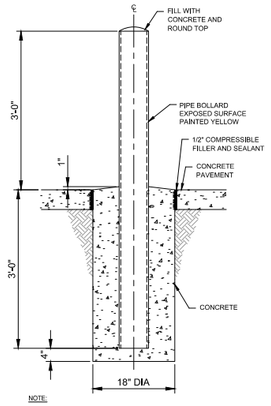
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

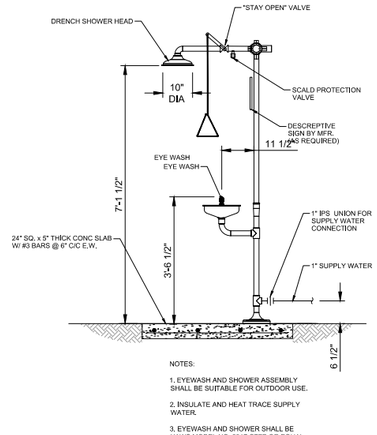
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 PROFESSIONAL ENGINEER
9/06/24

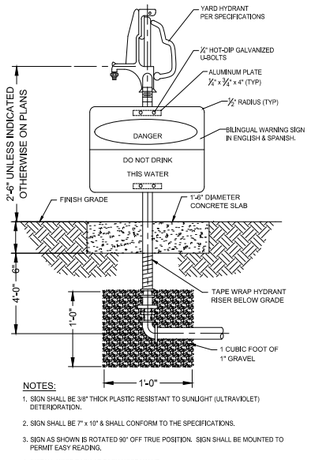
C-901



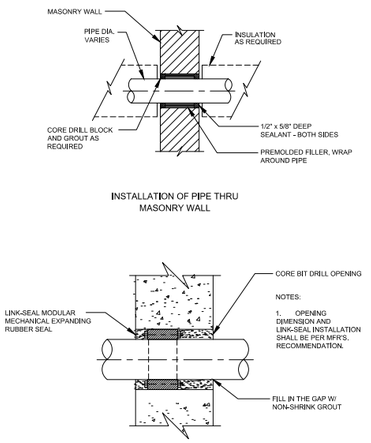
9 TYPICAL BOLLARD
NOT TO SCALE



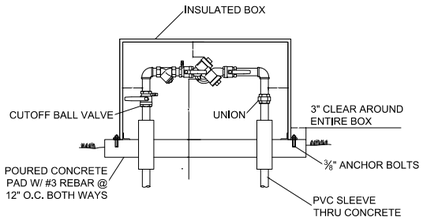
10 EYEWASH AND SHOWER DETAILS
NOT TO SCALE



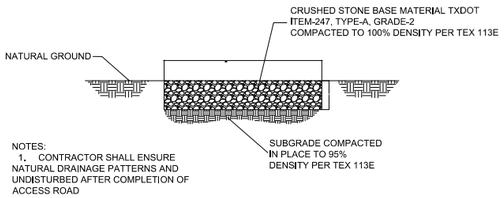
11 NON-FREEZE YARD HYDRANT W/ SIGN
NOT TO SCALE



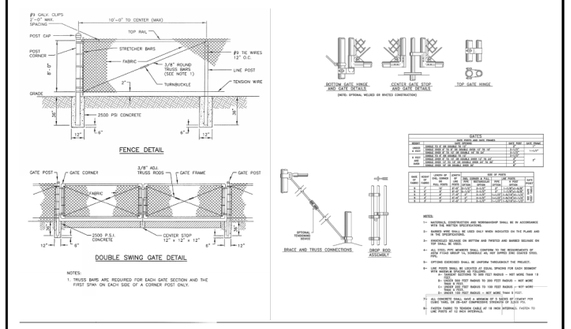
12 PIPE PENETRATION DETAIL
NOT TO SCALE



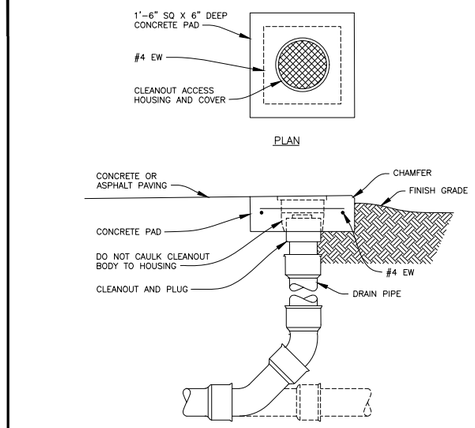
13 RPZ BACKFLOW PREVENTER
NOT TO SCALE



14 FLEX BASE ROAD
NOT TO SCALE



15 8' CHAIN LINK FENCE DETAIL
NOT TO SCALE



16 CLEAN OUT
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
MISCELLANEOUS DETAILS

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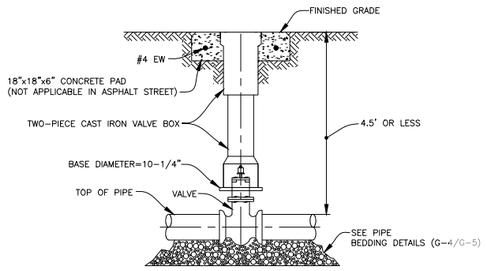
Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

C-902

NOTES:

1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO INSURE PROPER SUPPORT OF THE VALVE. CONCRETE BLOCKS OR 3/4" WASHED ROCKS SHALL BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT WHERE REQUIRED BY THE DISTRICT.
2. TRACER WIRE SHALL NOT BE BROUGHT UP VALVE BOXES.
3. IF DEPTH OF BURY IS MORE THAN 4.5 FEET REFER TO DETAIL W-2.

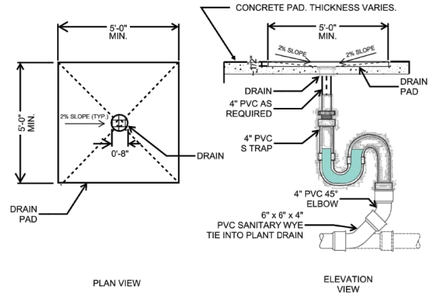


POTABLE VALVE BOX NOTE:
POTABLE VALVE BOX LID RESTS INSIDE THE UPPER VALVE BOX SECTION.

POTABLE VALVE BOX COVER PLAN
N.T.S.

POTABLE VALVE BOX COVER ELEVATION
N.T.S.

17 VALVE BOX DETAILS
NOT TO SCALE



PLAN VIEW

ELEVATION VIEW

NOTES:

1. DRAIN SHALL BE OATEY 72367 GENERAL PURPOSE DRAIN OR APPROVED EQUAL.
2. DRAIN PAD SHALL BE MINIMUM 5'x5' AREA, GENERALLY SLOPING 2% TO DRAIN ALONG THE SHORTEST AXIS OF THE DRAIN PAD. REFER TO SPECIFIC PROJECT PLANS FOR DETAILS.
3. TIE-INS TO PLANT DRAIN PIPING SHALL BE 6"x 6"x 4" PVC SANITARY WYES OR PVC 45° ELBOW WITH 4"x 6" BUSHING CONNECTING TO 6" PLANT DRAIN PIPE.

18 DRAIN PAD DETAILS
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
MISCELLANEOUS DETAILS

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

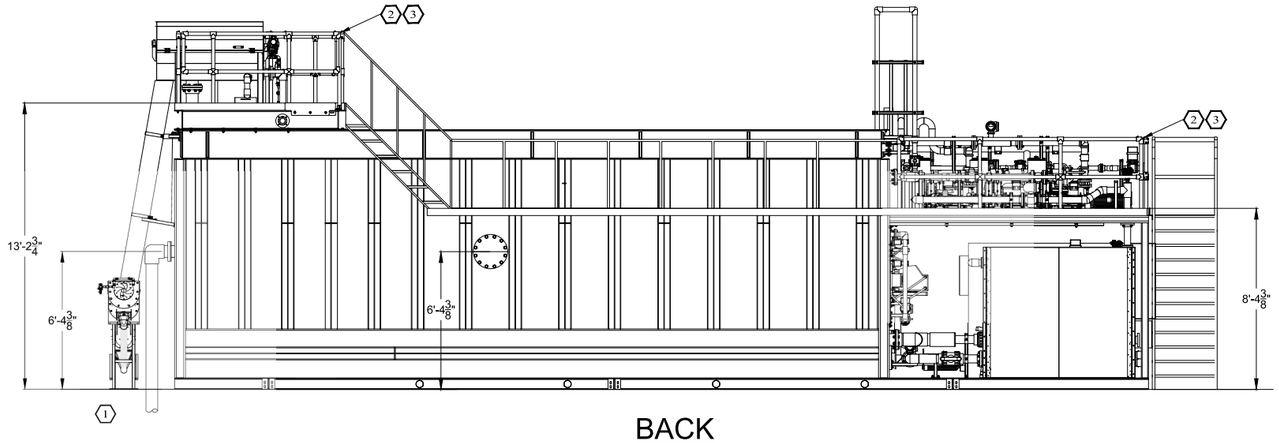
Jeffrey Snyder

JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER

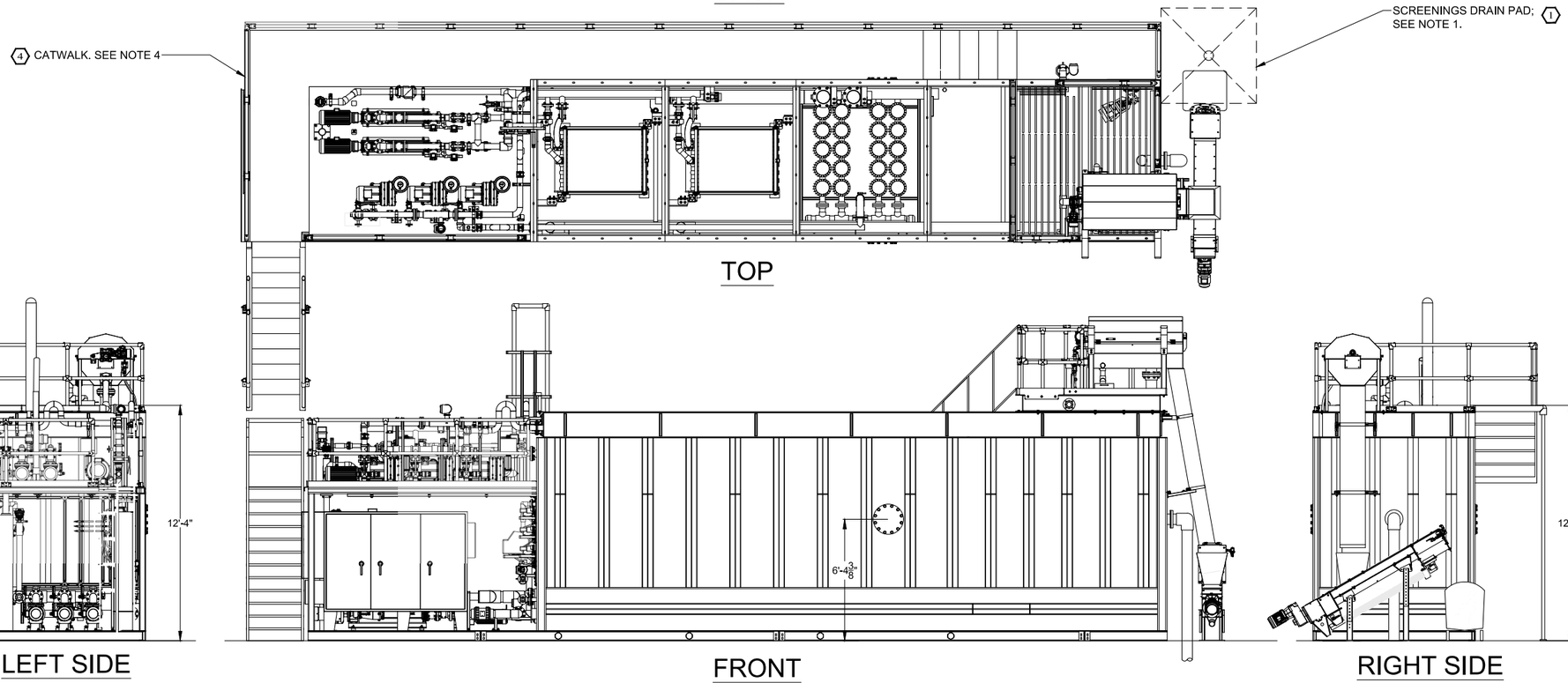
9/06/24

C-903

1. SCREENINGS CONTAINER DRAIN PAD; MIN 5'X5' AREA SLOPED 2% TO 6" FLOOR DRAIN (OATEY 72367 OR EQL) WITH P-TRAP CONNECTED TO PLANT DRAIN SYSTEM.
2. 1" HOSE BIBB MOUNTED TO UPPER PLATFORM
3. ALL LINES SMALLER THAN 4" IN DIAMETER AND ABOVE GROUND SHALL BE INSULATED.
4. 36" CATWALK FOR EQUIPMENT ACCESS



BACK



TOP

LEFT SIDE

FRONT

RIGHT SIDE

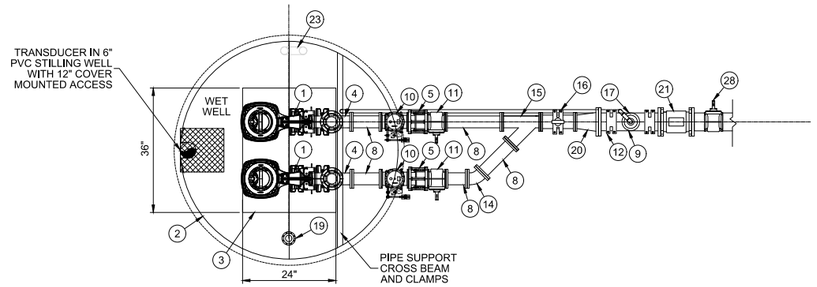
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328	DOUBLE L RANCH RECLAIMED WATER PRODUCTION FACILITY BLUBOX MBR	DATE: 7/25/24 DESIGNED BY: MR DRAWN BY: SS CHECKED BY: SR	PROJECT START DATE: SEP 2024 PROJECT NUMBER: 539 ENGINEER OF RECORD: JMS

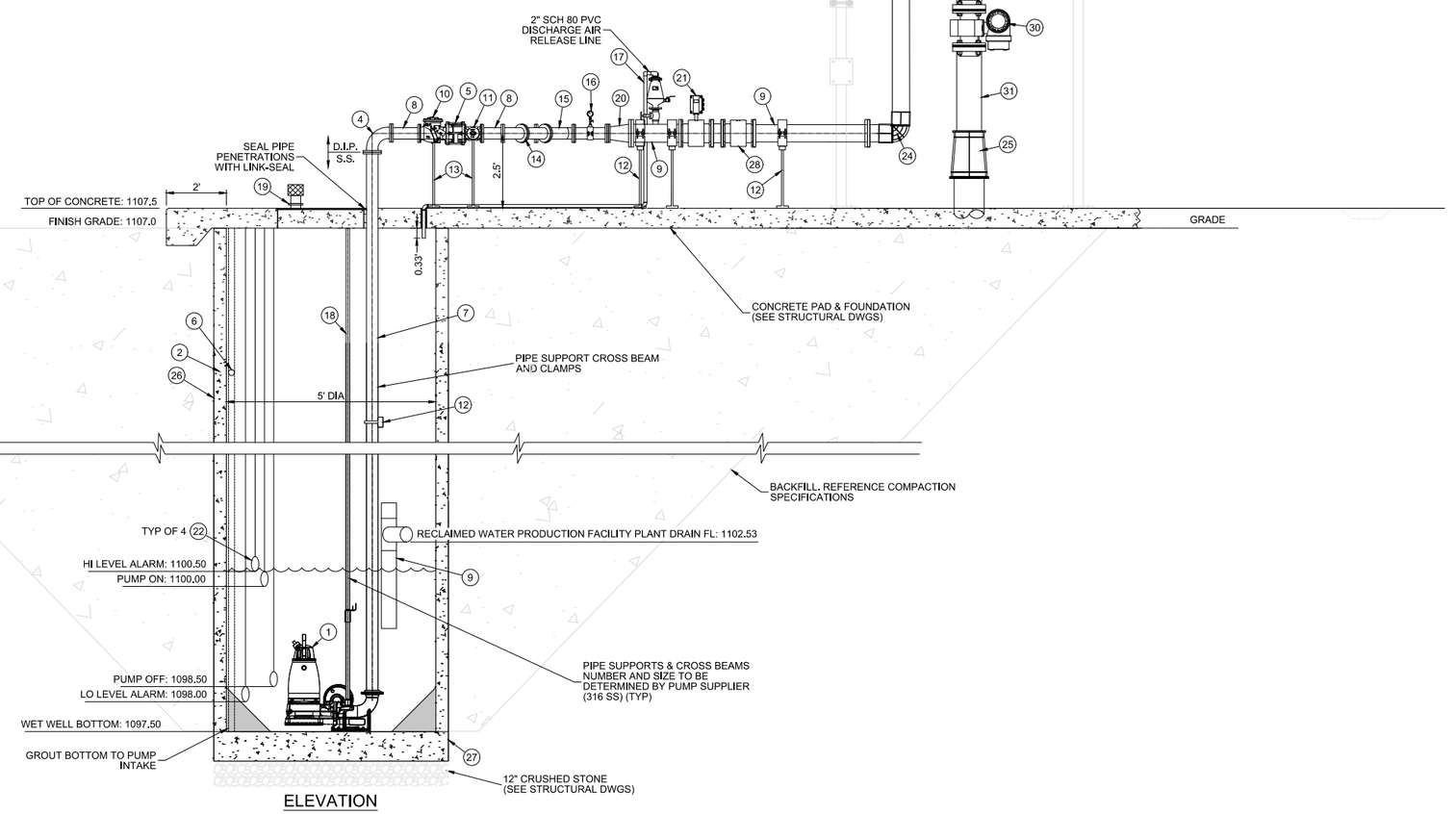
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

M-001



PLAN



ELEVATION

EQUIPMENT LIST:

1. SUBMERSIBLE NON-CLOG WASTEWATER PUMP. SEE PUMP PERFORMANCE DATA TABLE. TYP. OF 2 PUMPS.
2. 5'-0" ID PRECAST WET WELL DESIGNED FOR H-20 LOADING AND LOADS GIVEN IN THE GEOTECHNICAL REPORT, INCLUDING SURCHARGE PRESSURES FROM ADJACENT STRUCTURES.
3. 4'-0" x 3'-0" SINGLE LEAF, SPRING ASSIST ALUM ODOR-GASKETED, H-20 HATCH W/ RECESSED PADLOCK HASP W/ HINGED LID & SS HARDWARE & SAFETY LATCHES; W/ FALL THRU SAFETY NET; BILCO (J-SERIES) OR ENGINEER APPROVED EQUAL.
4. 4" CERAMIC EPOXY LINED D.I. FLANGED 90° ELBOW (SHORT RADIUS)
5. 4" RESTRAINED DISMANTLING JOINT WITH S.S. HARDWARE. SMITH BLAIR MODEL 911 OR ENGINEER APPROVED EQUAL.
6. LEVEL TRANSDUCER. BY PUMPS/CONTROLS MANUFACTURER
7. 4" 316SS FLANGED PIPE, LENGTH AS NEEDED
8. 4" CERAMIC EPOXY LINED D.I. FLANGED PIPE, LENGTH AS NEEDED
9. 6" CERAMIC EPOXY LINED D.I. FLANGED PIPE, LENGTH AS NEEDED
10. 4" FLANGED SWING CHECK VALVE, OUTSIDE WEIGHT & LEVER. APCO SERIES 6000 OR ENGINEER APPROVED EQUAL
11. 4" FLANGED ECCENTRIC PLUG VALVE WITH HANDWHEEL OPERATOR
12. GALVANIZED STEEL ADJUSTABLE PIPE SUPPORT
13. GALVANIZED STEEL ADJUSTABLE VALVE SUPPORT
14. 4" CERAMIC EPOXY LINED D.I. FLANGED 45° ELBOW
15. 4" x 4" CERAMIC EPOXY LINED D.I. FLANGED 45° WYE
16. 4" GLYCERIN-FILLED PRESSURE GAUGE WITH DIAPHRAGM
17. 2" COMBINATION SEWAGE AIR/VACUUM RELEASE VALVE, VENTO-MAT RGXb OR EQUAL WITH 2" SS BALL ISOLATION VALVE AND 2" PVC SCH 40 DISCHARGE PIPING TO MANHOLE OR WET WELL.
18. STAINLESS STEEL GUIDE BAR PER PUMP MANUFACTURER'S SPECIFICATIONS (MIN. 2 RAIL SYSTEM)
19. 4" FLANGED NOZZLE FOR ODOR CONTROL WITH GMECH MODEL CV-0612-04F-010 ODOR CONTROL CARBON VENT
20. 4" x 6" FLANGED REDUCER
21. FLOW METER. ENDRESS+HAUSER PROMAG W400 SERIES OR ENGINEER APPROVED EQUAL
22. LEVEL FLOAT SWITCHES, BY PUMP/CONTROLS MANUFACTURER
23. OMITTED
24. 6" CERAMIC LINED DI FL 90° ELBOW
25. 12" x 10" CERAMIC EPOXY LINED D.I. REDUCER
26. XYPEX BIO-SAN COATING REQUIRED ON BOTH INTERNAL AND EXTERNAL WALLS OF PRECAST WELL.
27. PRECAST CONCRETE WET WELL 12" BASE EXTENSION
28. 6" FLANGED ECCENTRIC PLUG VALVE WITH HANDWHEEL OPERATOR.
29. 10" x 6" CERAMIC EPOXY LINED D.I. 45° WYE
30. 10" FLOW METER. ENDRESS+HAUSER PROMAG W400 SERIES OR ENGINEER APPROVED EQUAL
31. 10" CERAMIC EPOXY LINED D.I. FLANGED PIPE, LENGTH AS NOTED
32. 6" CERAMIC LINED D.I. 45° ELBOW
33. 20" x 10" CERAMIC EPOXY LINED D.I. REDUCER
34. 20" CERAMIC EPOXY LINED D.I. FLANGED PIPE, LENGTH AS NOTED
35. 20" CERAMIC LINED DI FL 90° ELBOW

COMPACTION SPECIFICATIONS:

1. MAXIMUM PARTICLE SIZE: 3 INCHES.
2. MAXIMUM ALLOWABLE ORGANIC CONTENT: 3 PERCENT BY WEIGHT, BUT LARGE ROOTS ARE NOT ALLOWED.
3. LIQUID LIMIT: NOT MORE THAN 40.
4. PLASTICITY INDEX: BETWEEN 8 AND 15.
5. MAXIMUM LOOSE LIFT THICKNESS: 8 INCHES WITH COMPACTED THICKNESS OF ABOUT 6 INCHES.
6. COMPACTION REQUIREMENT: COMPACTION SHOULD BE TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM (ASTM D 698) DRY DENSITY FOR NON-ROADWAY AREAS AND TEX-114-E FOR ROADWAY AREAS.
7. MOISTURE CONTENT AT TIME OF COMPACTION: WITHIN MINUS 2 TO PLUS 3 PERCENT OF THE MATERIAL'S OPTIMUM MOISTURE CONTENT.

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PLANT DRAIN LIFT STATION

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

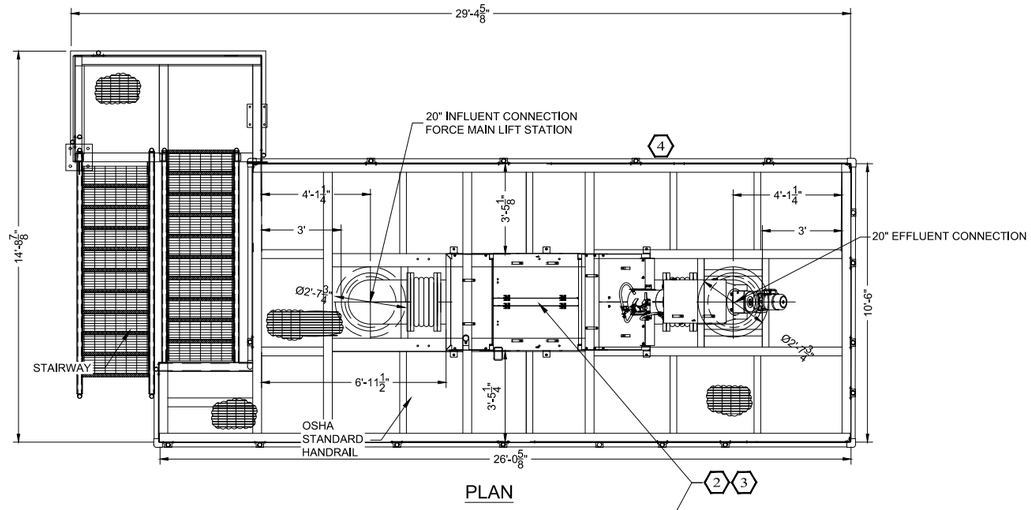
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

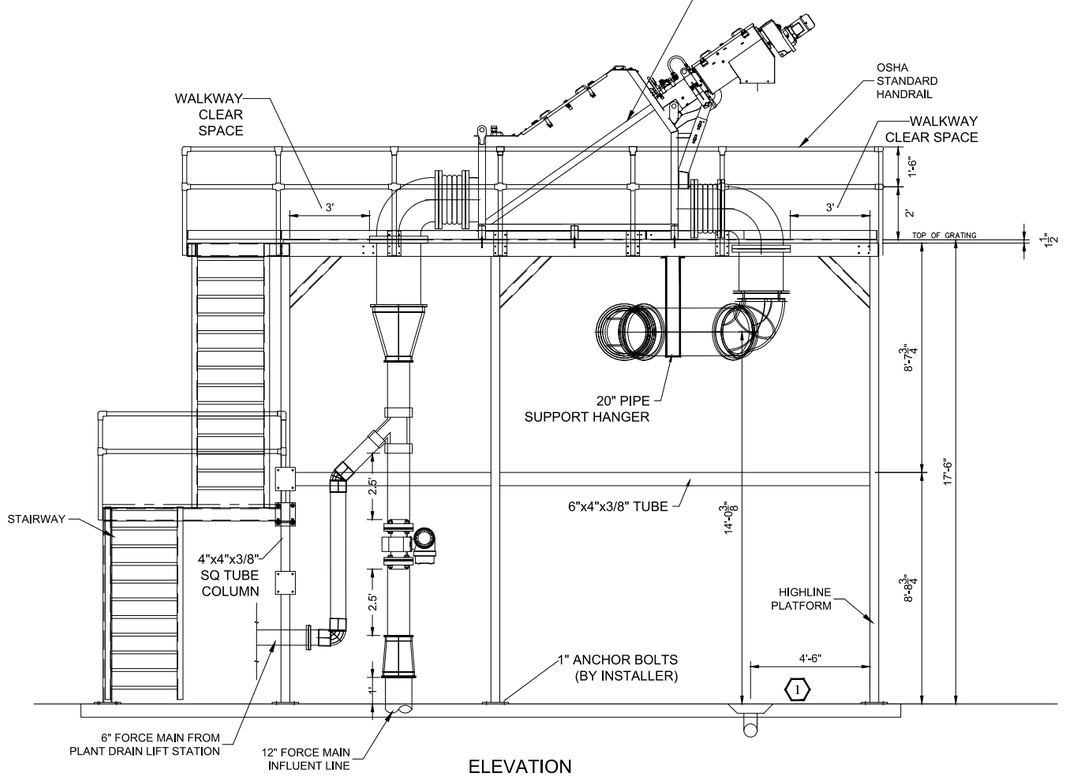
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder — JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER — 9/06/24

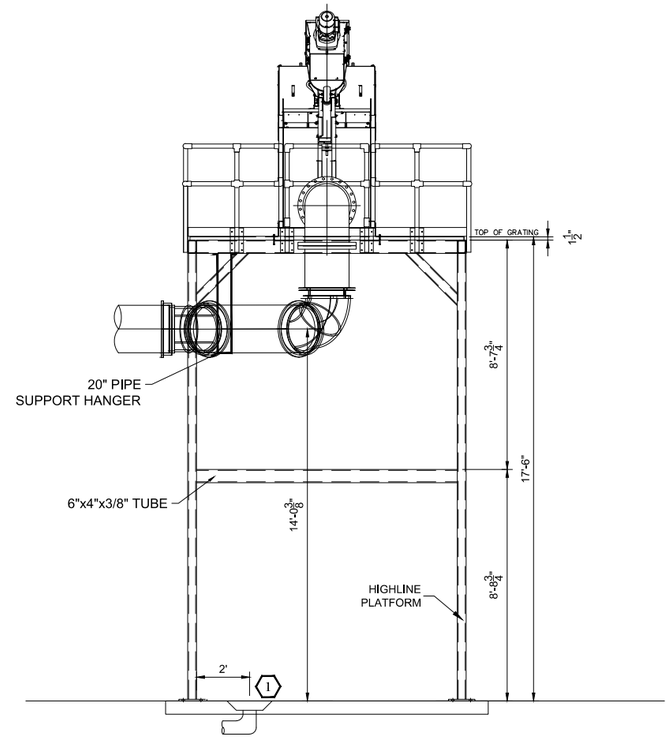
M-002



PLAN



ELEVATION



SIDE VIEW

NOTE :-

1. SCREENINGS CONTAINER DRAIN PAD; MIN 5'X5' AREA SLOPED 2% TO 6" FLOOR DRAIN (OATEY 72367 OR EQL) WITH P-TRAP CONNECTED TO PLANT DRAIN SYSTEM.
2. 1" HOSE BIBB MOUNTED TO UPPER PLATFORM.
3. ALL LINES SMALLER THAN 4" IN DIAMETER AND ABOVE GROUND SHALL BE INSULATED.
4. PROVIDE SINGLE ARCH FLEXIBLE, PROCO OR EQL, W/ SS HARDWARE.
5. STEEL FABRICATOR TO FINALIZE STRUCTURAL DESIGN OF PLATFROM

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

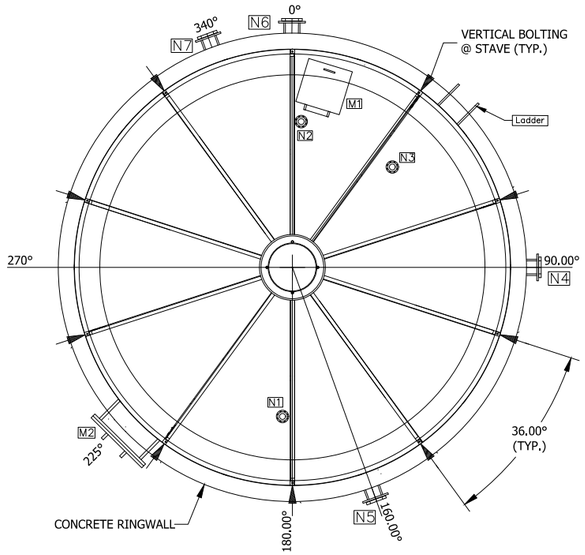
DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
PRIMARY SCREEN

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

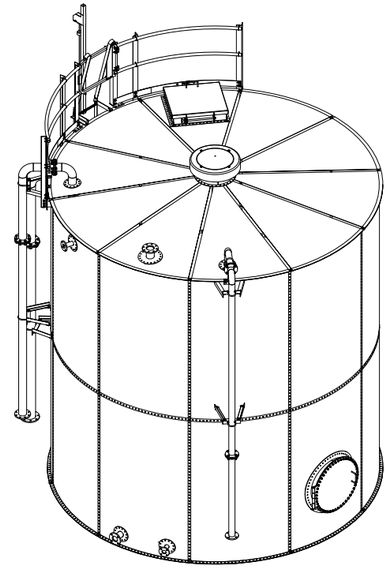
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder, P.E. — JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER — 9/06/24

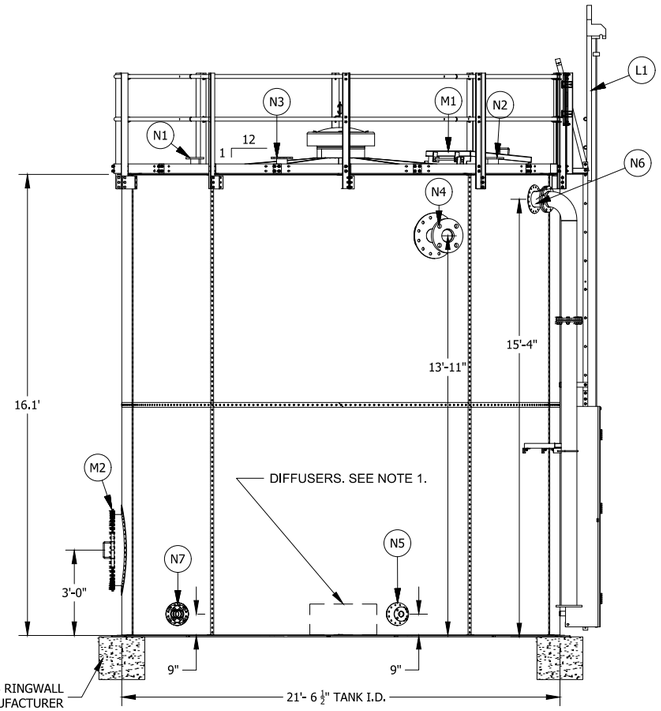
M-003



PLAN



ISOMETRIC VIEW



ELEVATION

EQ TANK

SIDE WALL NOZZLE ORIENTATIONS

ND	SIZE(in)	SERVICE DESCRIPTION	SUPPORT TABS	CONNECTION TYPE	ORIENTATION(°)	ELEVATION
N4	20"	Influent	Vertical ppe support tabs on interior of tank upto 15 feet	Single Flanged	90	13'-11"
N5	3	Discharge(EQ pump suction)		Single Flanged	160	9"
N6	6	Emergency Overflow		Single Flanged	0	15'-4"
N7	3	Drain		Single Flanged	340	9"
M2	30	Manway		Bolted Hatch	225	3'

DECK NOZZLE ORIENTATIONS

ND	SIZE	DESCRIPTION		CONNECTION TYPE	ORIENTATION	LOCATION ON DECK
N1	3	SS Airline	Vertical pipe support Tabs on interior of tank down to 2 feet	Double Flanged	180	1 foot from edge
N2	4	Odor Control		Single Flanged	0	Center
M1	30 X30	Hinged Access Hatch		N/A	0	0.5 foot from edge
N3	6	Level Transmitter Conduit		Single Flanged	45	1 foot from edge

ACCESSORIES

ND	SIZE	DESCRIPTION		CONNECTION TYPE	ORIENTATION	DISTANCE FROM CENTER
L1	-	Ladder System		N/A	45	N/A
		Hand rail all around tank				

NOTE:

1) FIVE (5) QTY OF GMECH MODEL BD-CB04-02H-01B BALLASTED COARSE BUBBLE DIFFUSERS TO BE PLACED IN EQUALIZATION TANK. SEE SHEETS M-013A THROUGH M-013C FOR DETAILS.

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
EQUALIZATION TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

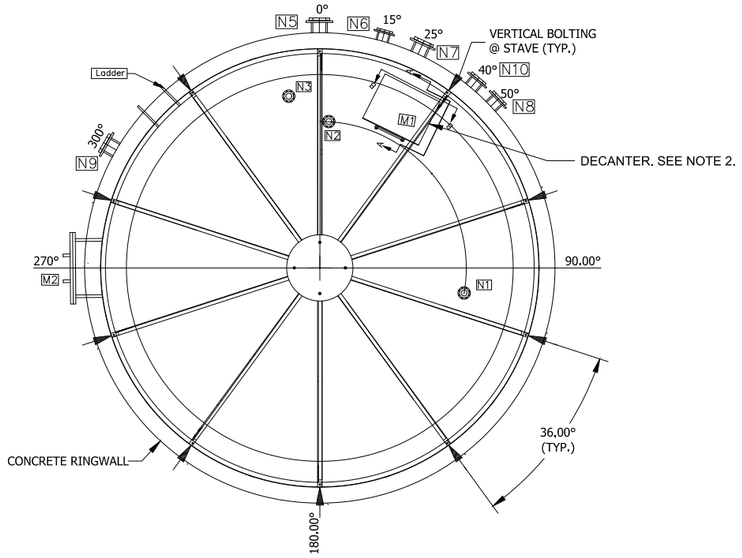
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

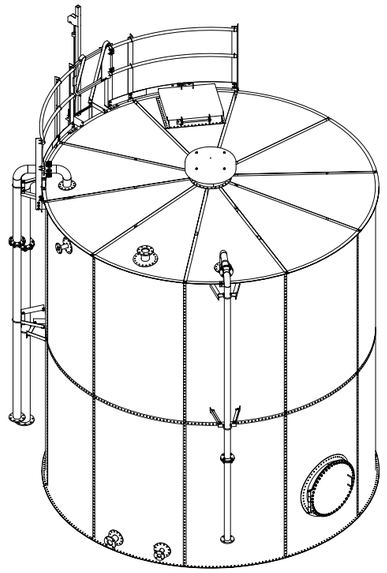
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

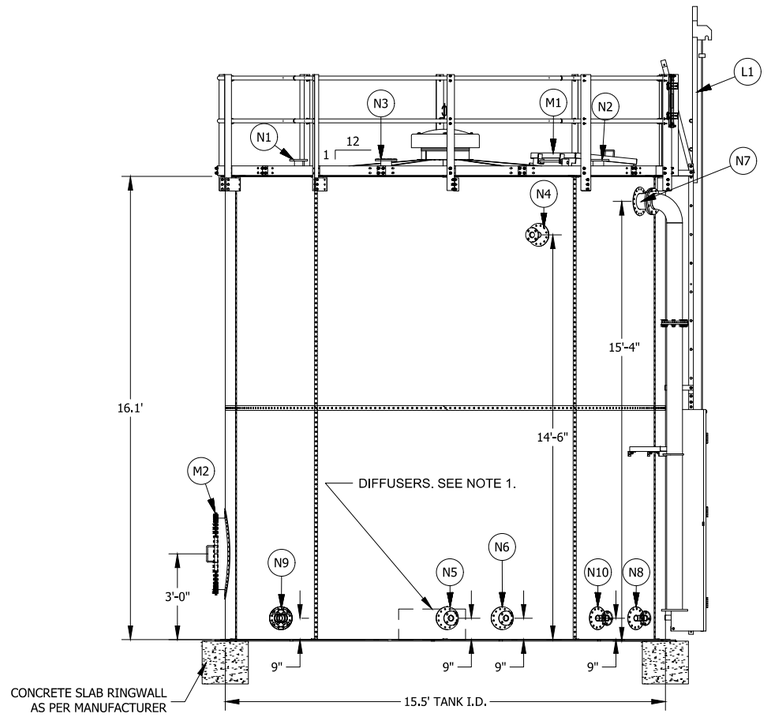
M-004



PLAN



ISOMETRIC VIEW



ELEVATION

SLUDGE HOLDING TANK

SIDE WALL NOZZLE ORIENTATIONS

ND	SIZE(in)	SERVICE DESCRIPTION	SUPPORT TABS	CONNECTION TYPE	ORIENTATION(°)	ELEVATION
N4	3	Influent(WAS pump Discharge)	Vertical pipe support tabs on interior of tank upto 15 feet	Double Flanged	95	14'-6"
N5	3	Outlet from tank to ST pump suction		Single Flanged	0	9"
N6	2	Decanter Screen Feed	Vertical pipe support tabs on interior of tank upto 15 feet	Double Flanged	15	9"
N7	6	Emergency Overflow		Single Flanged	25	15'-4"
N8	3	Tank Drain		Single Flanged	50	9"
N9	4	Discharge(Sludge Truck Feed)		Single Flanged	0	9"
N10	3	Decanter Screen discharge		Double Flanged	40	9"
M2	30	Manway		Bolted Hatch	270	3'

DECK NOZZLE ORIENTATIONS

ND	SIZE	DESCRIPTION		CONNECTION TYPE	ORIENTATION	LOCATION ON DECK
N1	3	SS Airline	Vertical pipe support Tabs on interior of tank down to 2 feet	Double Flanged	100	1 foot from edge
N2	4	Odor Control		Single Flanged	0	Center
M1	30 X30	Hinged Access Hatch		N/A	15	0.5 foot from edge
N3	4	Level Transmitter Conduit		Single Flanged	350	1 foot from edge

ACCESSORIES

ND	SIZE	DESCRIPTION		CONNECTION TYPE	ORIENTATION	DISTANCE FROM CENTER
L1	-	Ladder System		N/A	315	N/A
		Hand rail all around tank				

NOTE:

1) (5) FIVE QTY OF GMECH MODEL BD-CB04-02H-01B BALLASTED COARSE BUBBLE DIFFUSERS TO BE PLACED IN SHT TANK. SEE SHEETS M-013A THROUGH M-013C FOR DETAILS.
2) SLUDGE DECANTER SHALL BE ATTACHED TO UNDERSIDE OF HINGED ACCESS HATCH (M1). SEE SECTION CUTS AND DETAILS ON SHEETS M-005B THROUGH M-005F.

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

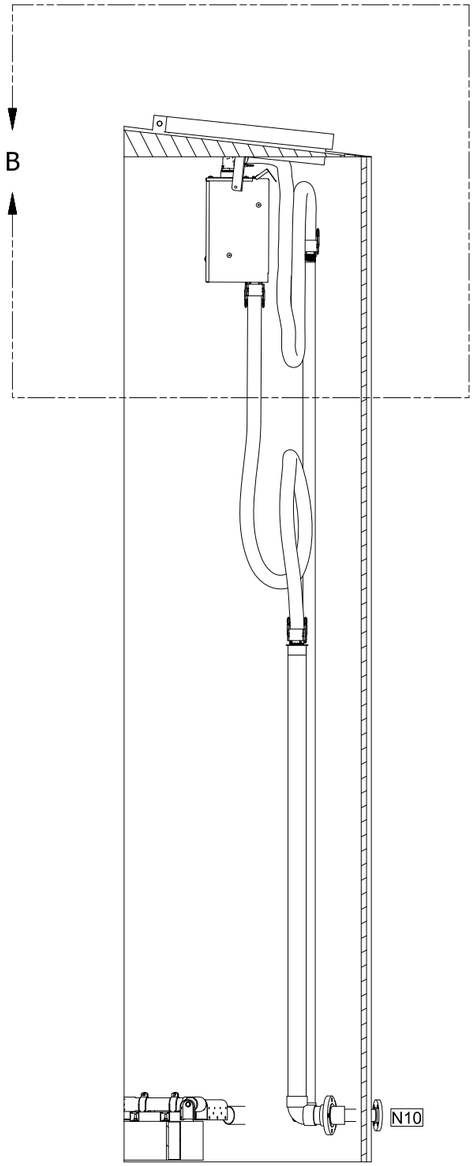
REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

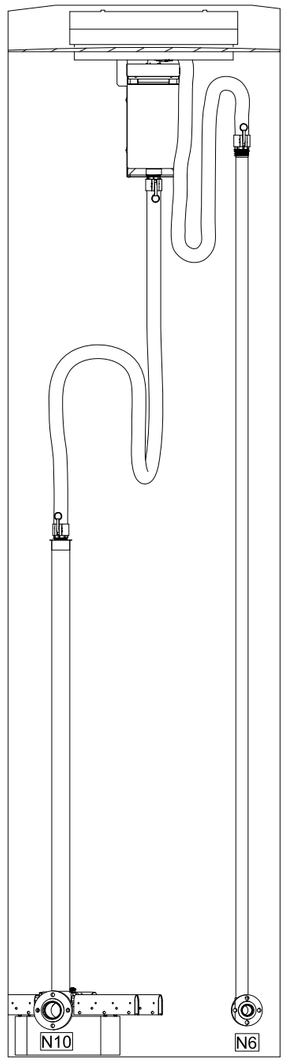
Jeffrey Snyder

JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER 9/06/24

M-005A



SECTION A-A (SHT M-005A)
SCALE: NTS



SECTION B-B (SHT M-005A)
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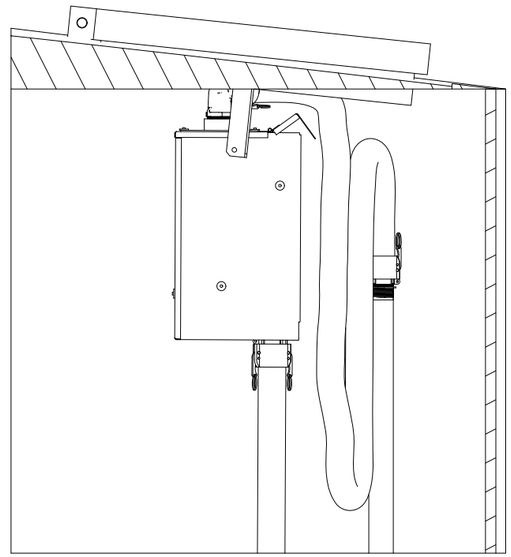


DETAIL C
SCALE 1 / 10

SLUDGE DECANTER ASSEMBLY

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

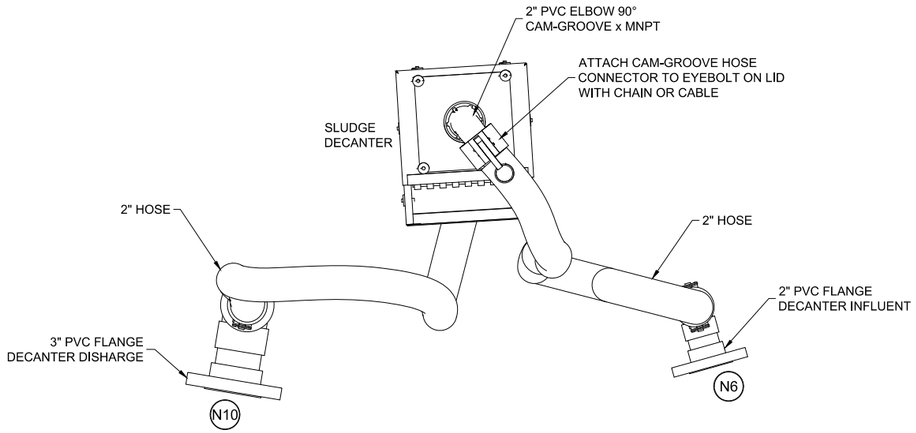
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-005B



DETAIL D
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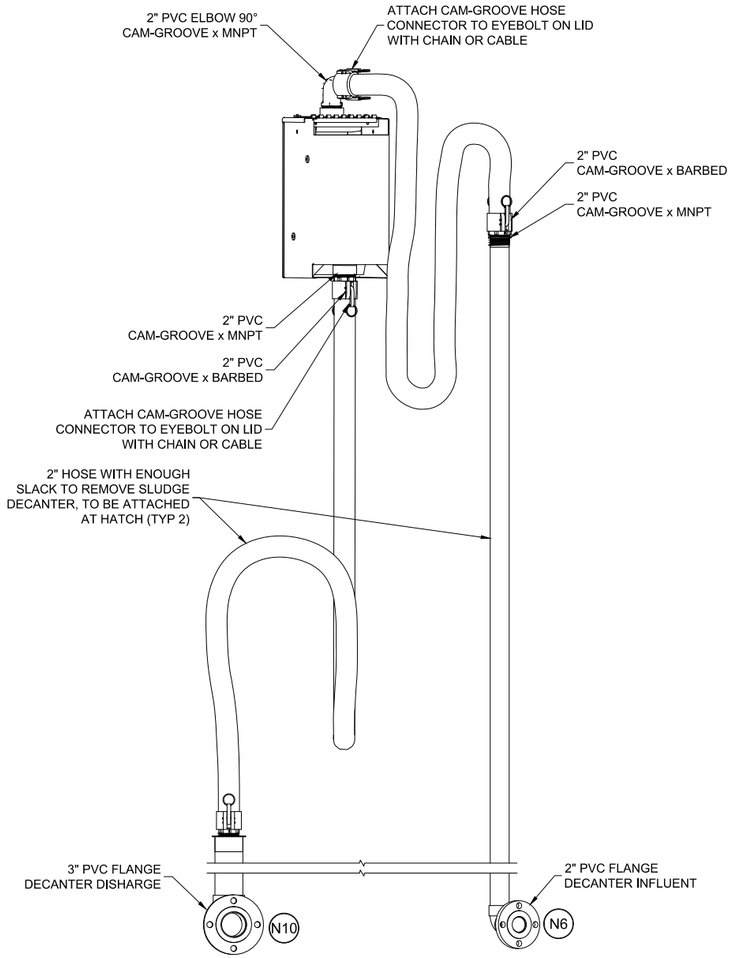
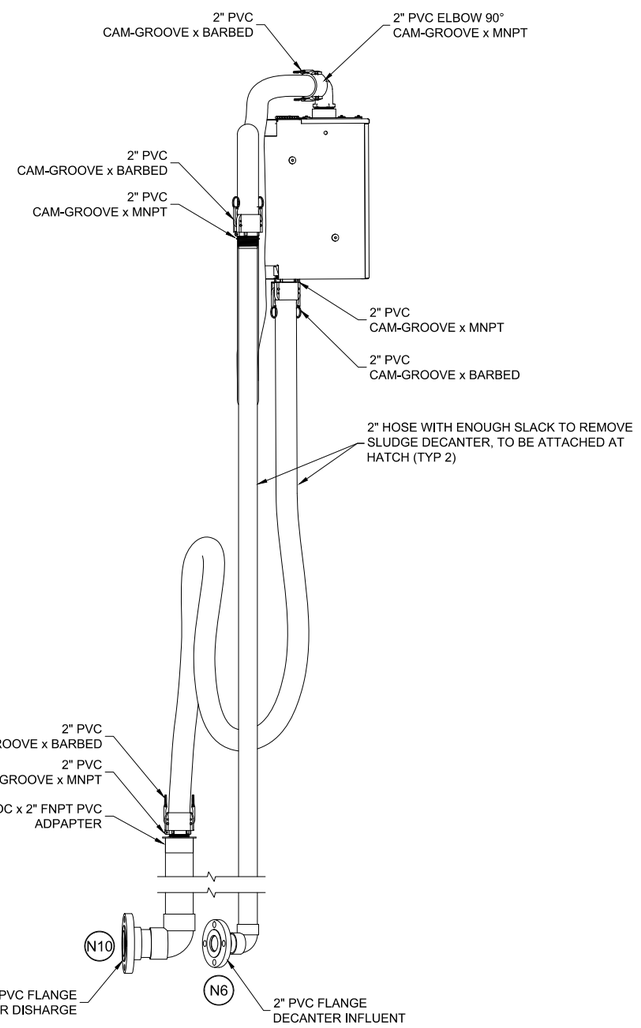


DETAIL E
SCALE: NTS



DETAIL F
SCALE: NTS

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

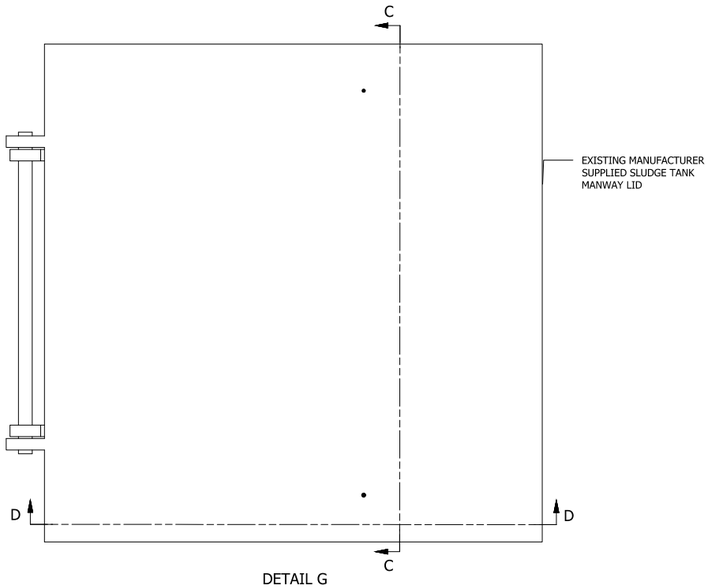
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

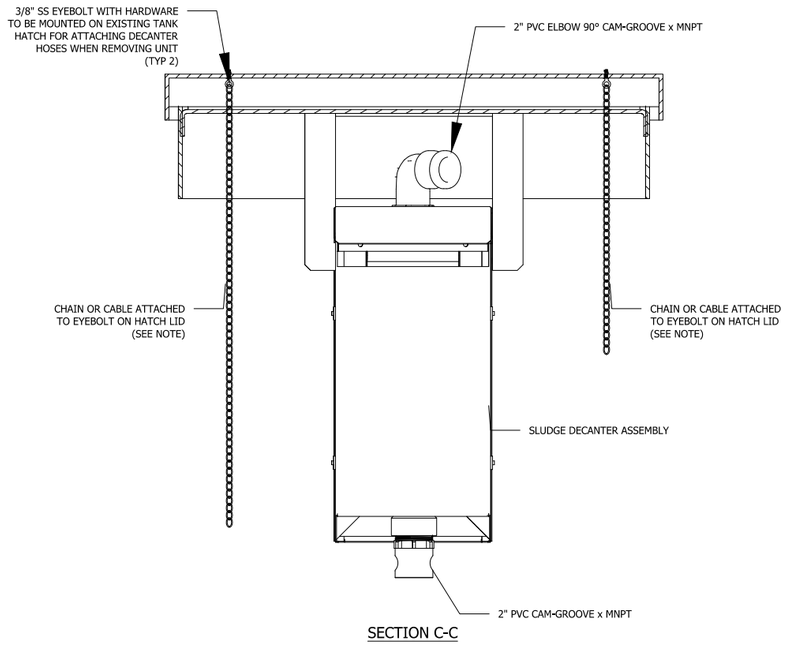
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
14407S
REGISTERED
PROFESSIONAL ENGINEER
9/05/24

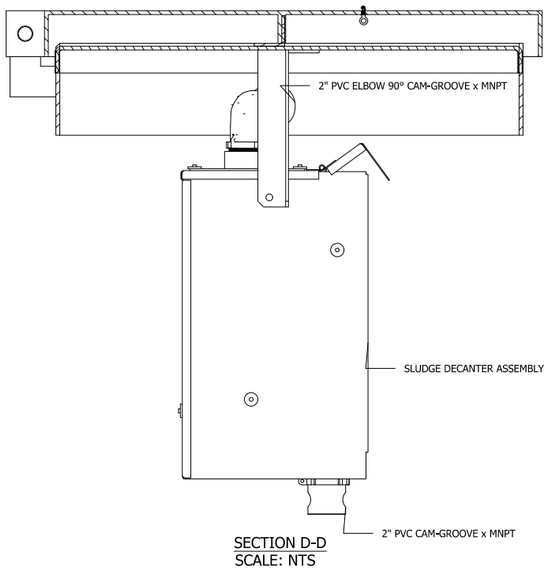
M-005C



DETAIL G
SCALE NTS



SECTION C-C



SECTION D-D
SCALE: NTS

NOTE:
1. 2" POLY HOSE WITH QUICK DISCONNECT CAM AND GROOVE SOCKET. FOR UPPER AND LOWER CONNECTIONS, 5'-0" OF EXTRA HOSE TO BE COILED AND ATTACHED TO LID ASSEMBLY (TO ENABLE THE DECANTER TO BE REMOVED AND RECONNECTED, IF NEEDED)

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

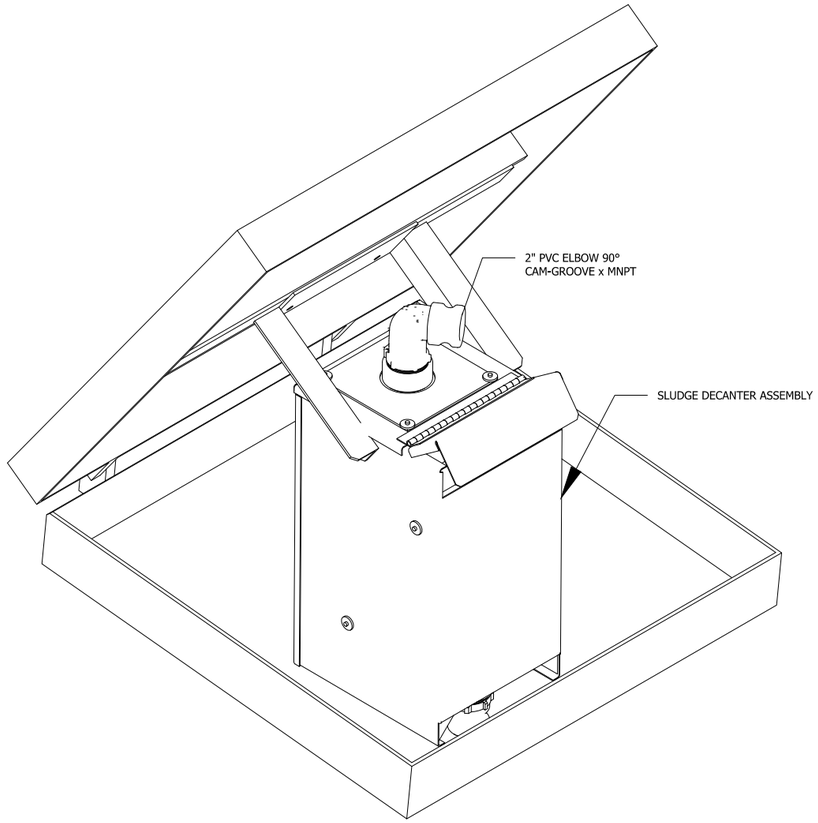
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

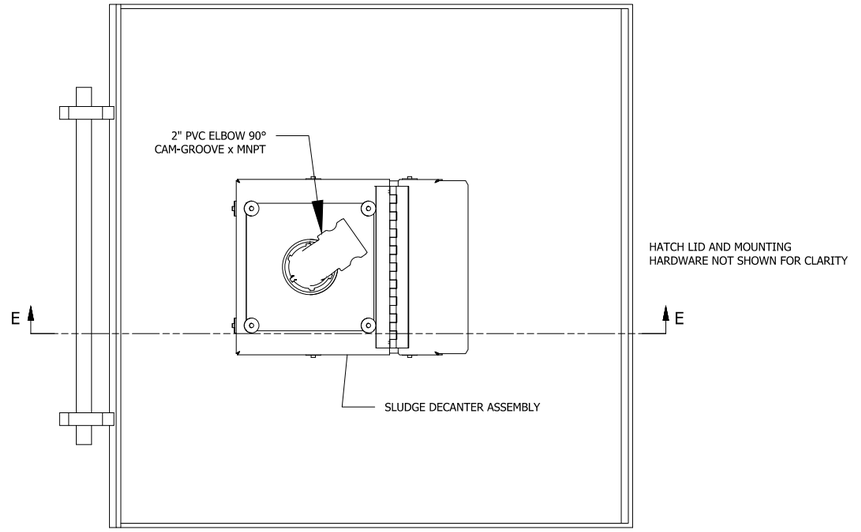
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-005D

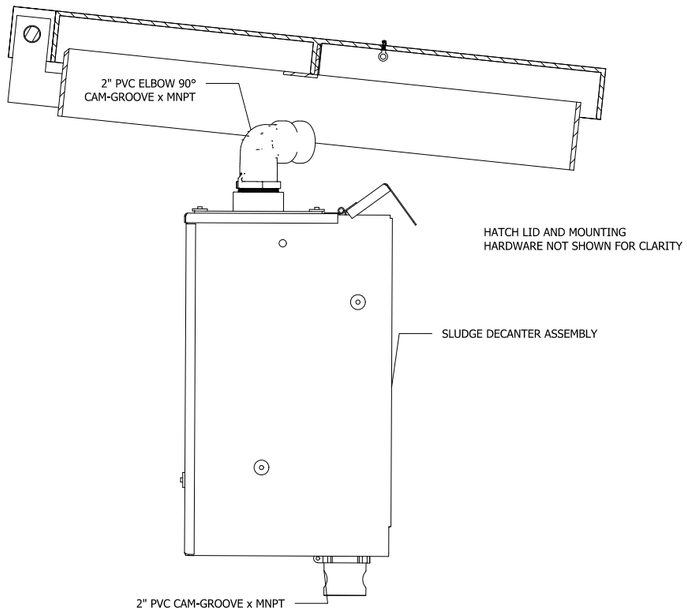


ISOMETRIC VIEW - MANWAY



PLAN VIEW - MANWAY

ISOMETRIC VIEW



SECTION E-E
SCALE 1 / 4

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

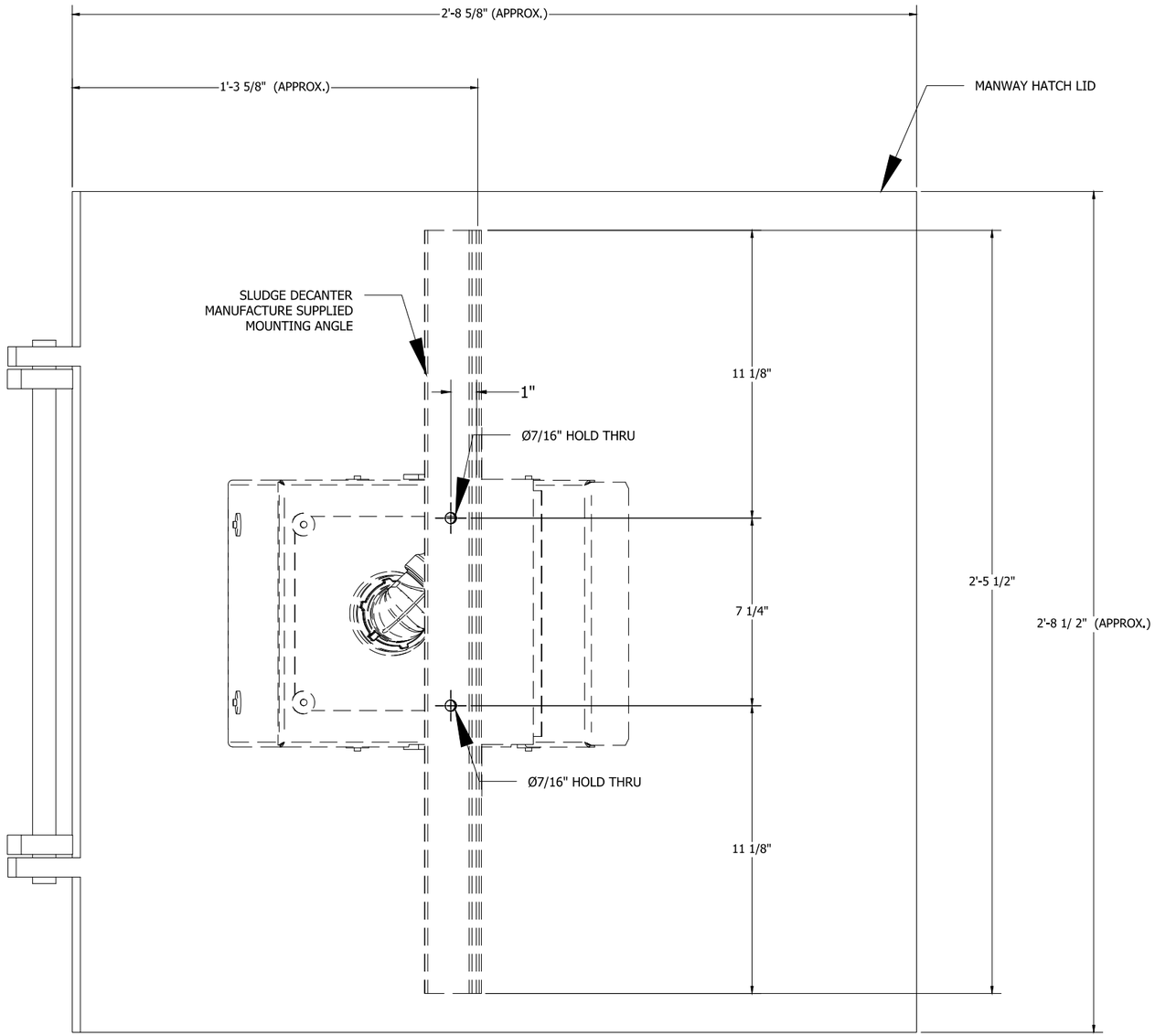
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-005E



SLUDGE DECATNER MOUNTING TO EXISTING TANK HATCH

DETAIL H

MOUNTING

NOTE:
1. USE 3/8" MOUNTING HARDWARE TO ATTACH SLUDGE DECANTER ASSEMBLY TO EXISTING TANK LID.

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE HOLDING TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

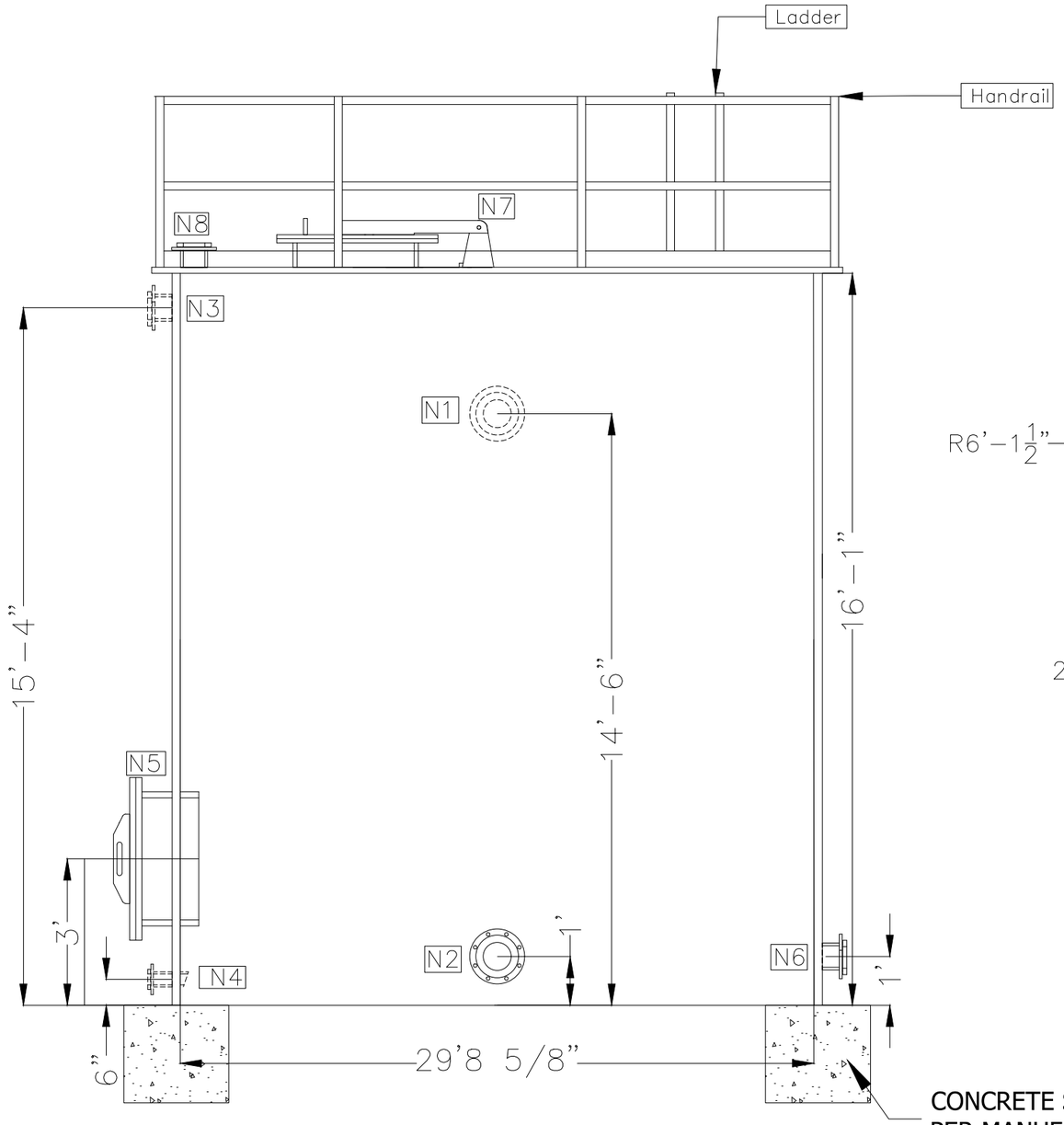
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
144076
PROFESSIONAL ENGINEER
9/06/24

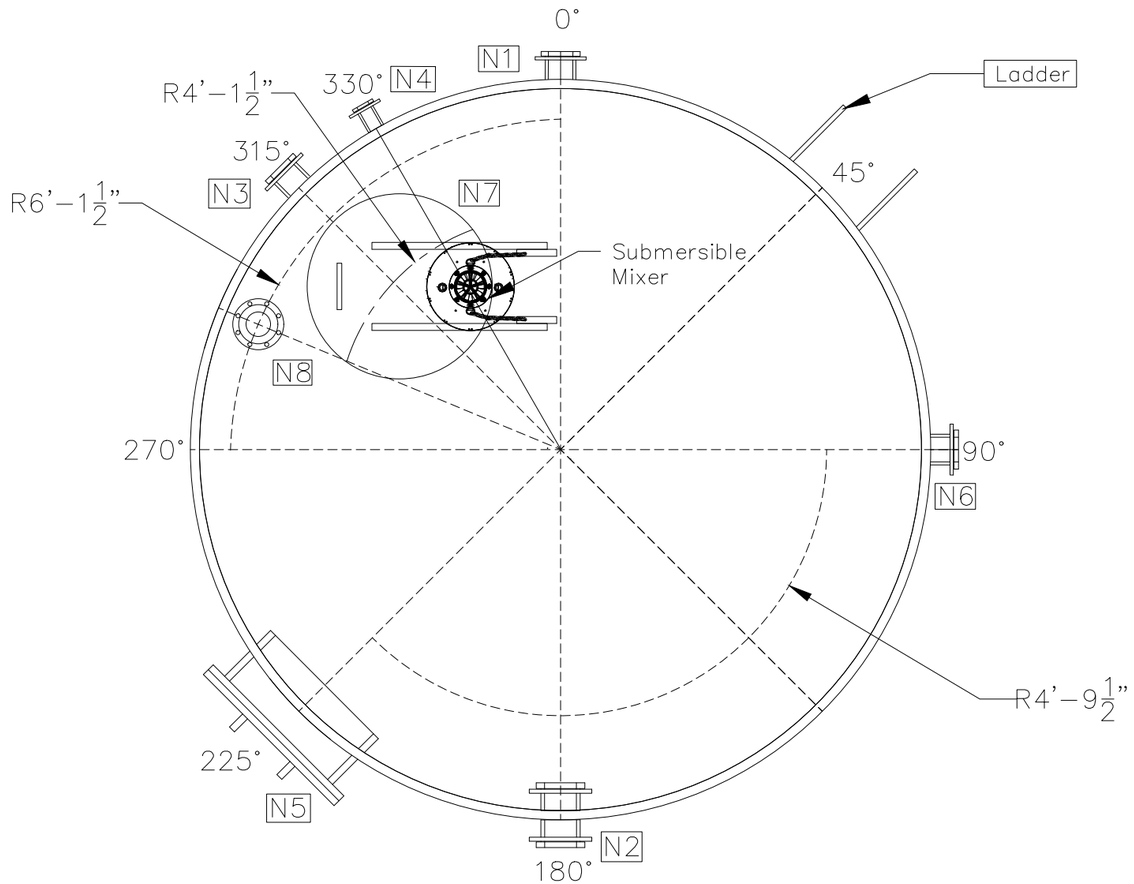
M-005F

RECLAIMED WATER STORAGE TANK					
SIDEWALL NOZZLE ORIENTATIONS					
NOZZLE NO	SIZE	DESCRIPTION	CONNECTION TYPE	ORIENTATION°	ELEVATION
N1	6"	INLET	FLANGE	0	14'-6"
N2	8"	OUTLET	FLANGE	180	1'
N3	6"	OVERFLOW	FLANGE	315	15'-4"
N4	3"	TANK DRAIN	FLANGE	330	6"
N5	30"	MANWAY		MA	3'
N6	4"	PW INLET	FLANGE	90	1'
DECK NOZZLE ORIENTATIONS					
NOZZLE NO	SIZE	DESCRIPTION	CONNECTION TYPE	ORIENTATION	DISTANCE FROM CENTER
N7	30"	MANWAY	TO BE FIELD FIT	315°	4' 1 5/8"
N8	6"	LEVEL TRANSMITTER	FLANGE	292°	5' 10 3/4"

1. THE ALTITUDE CONTROL VALVE TO BE USED FOR RECLAIMED WATER STORAGE TANK FILLING, WHICH SHALL OPEN WHEN THE TANK WATER LEVEL DROPS TO 3 FEET AND CLOSES WHEN THE TANK WATER REACHES 4 FEET.



ELEVATION



PLAN

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
RECLAIMED WATER STORAGE TANK

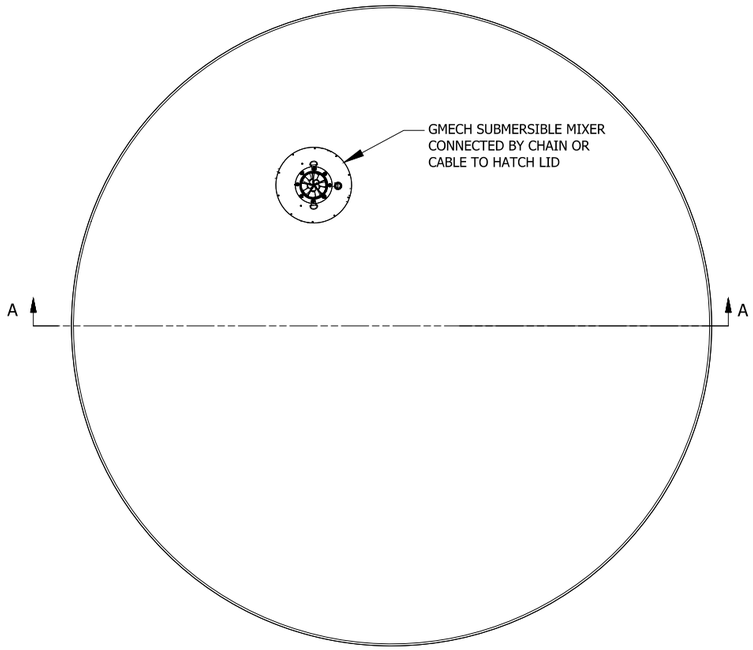
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

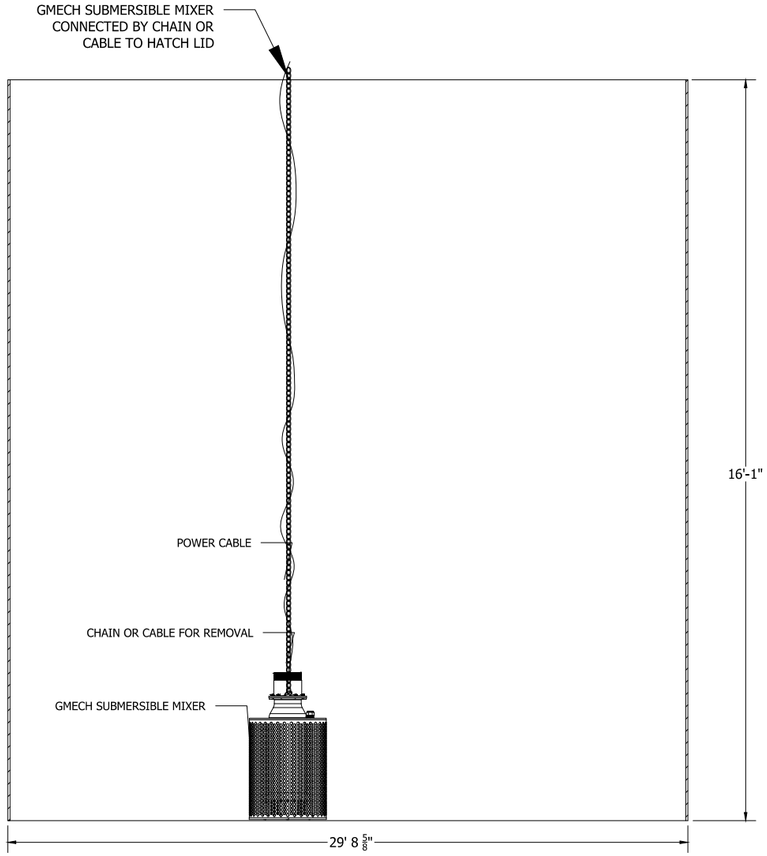
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 PROFESSIONAL ENGINEER LICENSED
9/06/24

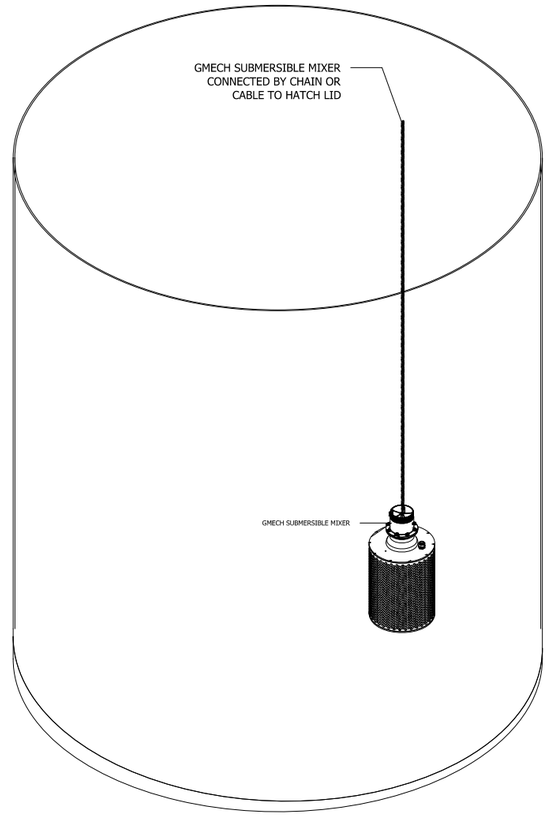
M-006A



PLAN VIEW



SECTION A-A



ISOMETRIC VIEW

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
RECLAIMED WATER STORAGE TANK

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

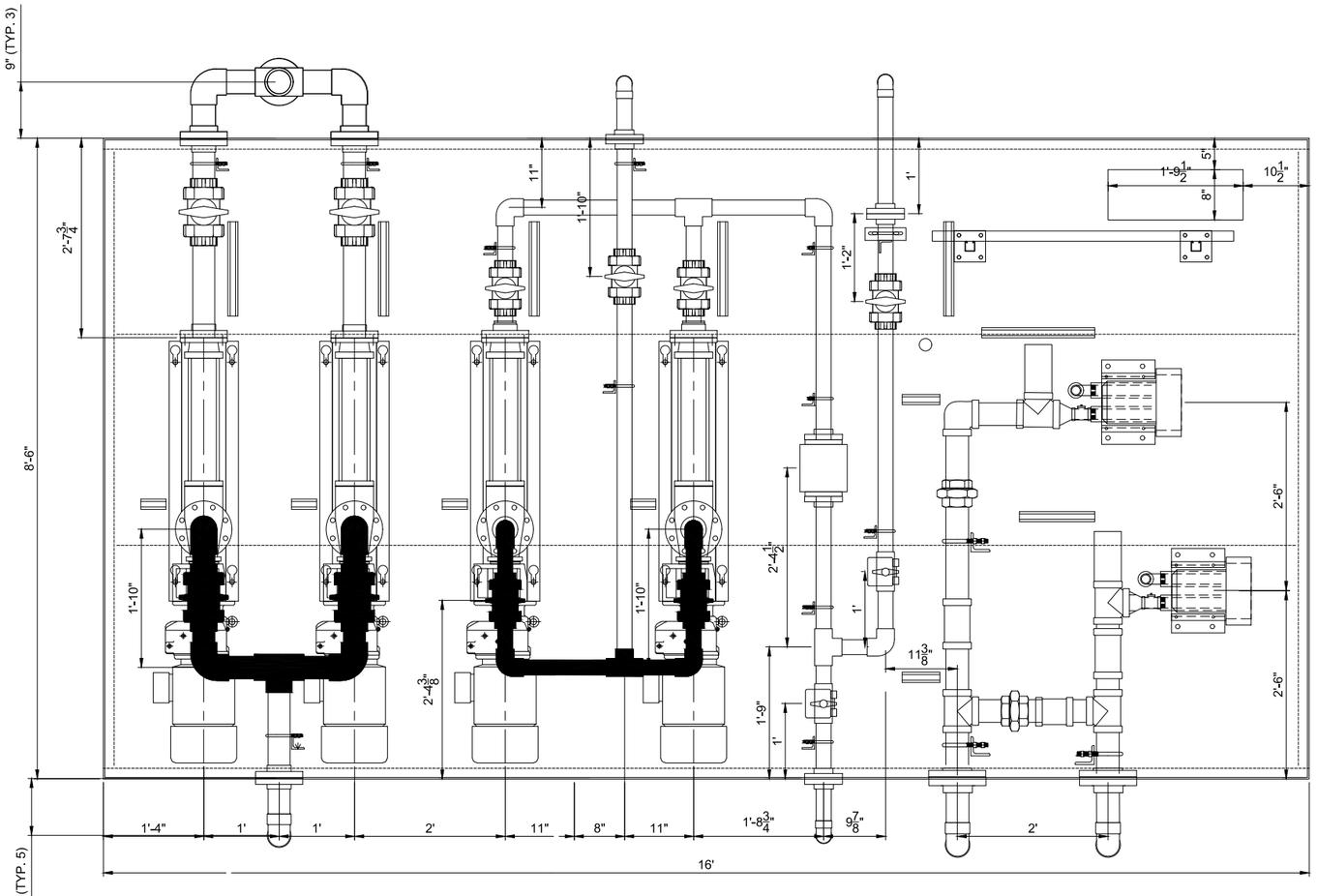
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

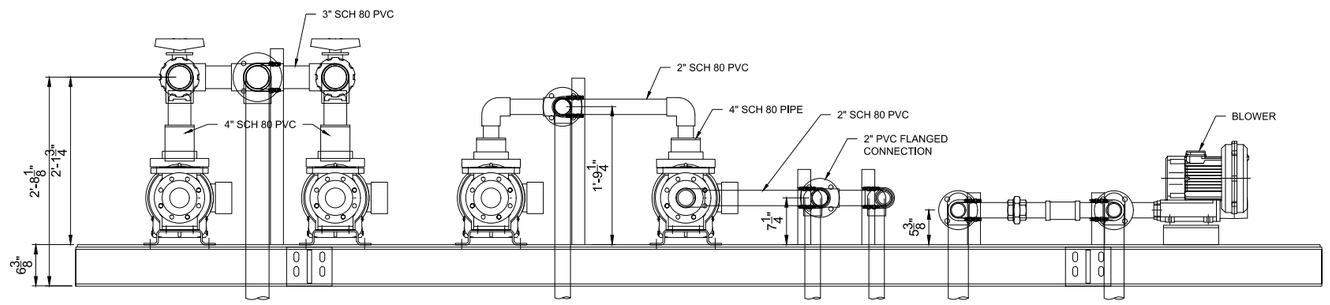
REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
144076
REGISTERED PROFESSIONAL ENGINEER
9/05/24

M-006B





NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
EQUIPMENT SKID

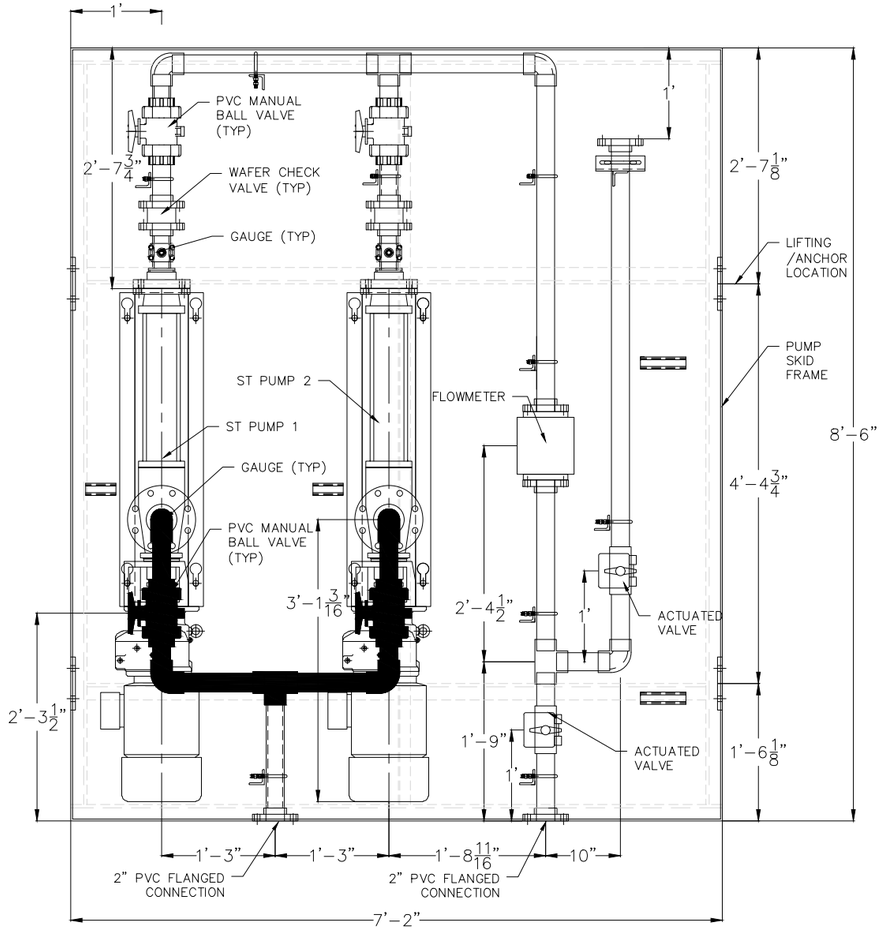
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

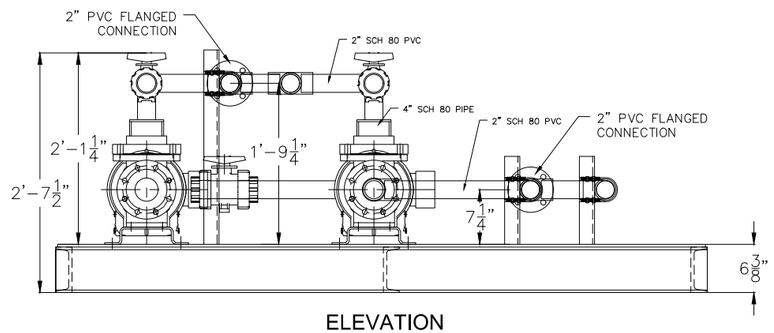
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-007



PLAN



ELEVATION

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
SLUDGE TRANSFER PUMP SKID

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

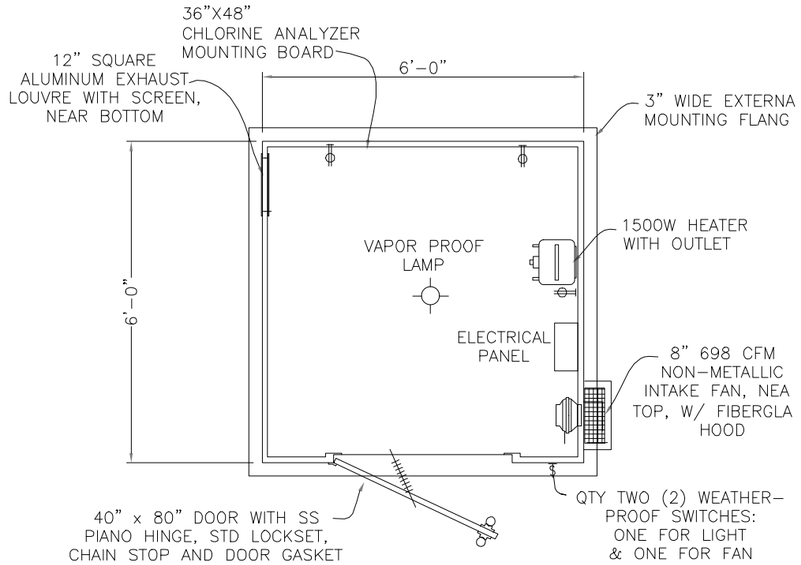
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

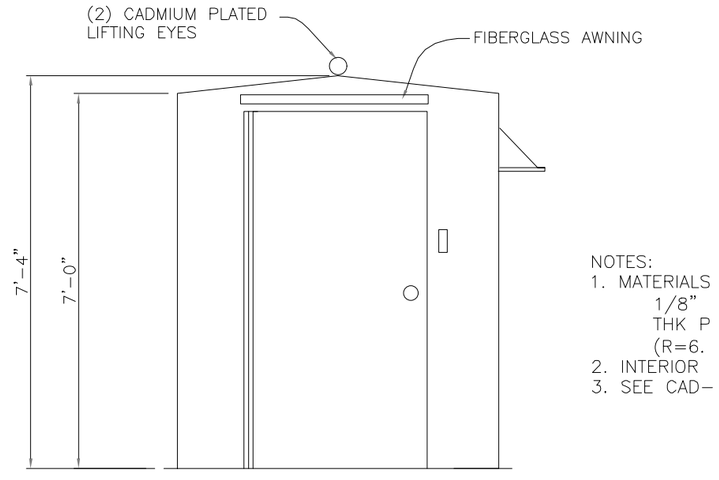
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
144076
PROFESSIONAL ENGINEER
9/06/24

M-008



PLAN



NOTES:
1. MATERIALS
1/8"
THK P
(R=6.
2. INTERIOR
3. SEE CAD-

ELEVATION

FIBERGLASS BUILDING DETAIL

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
FRP BUILDING

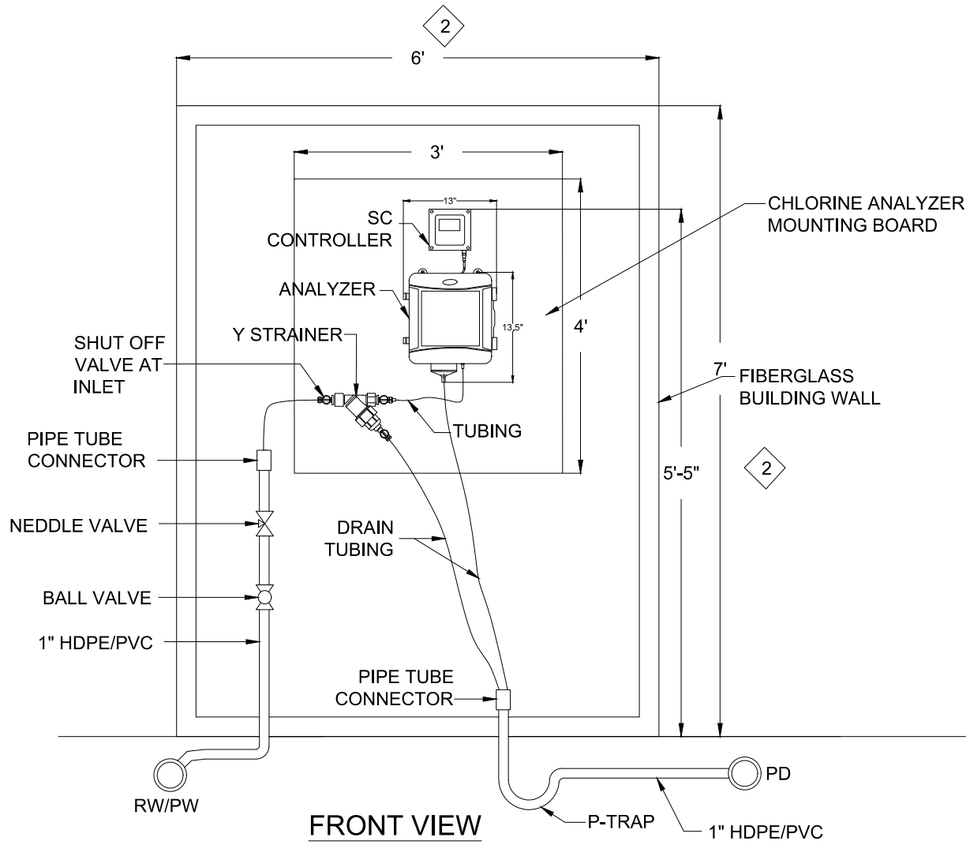
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

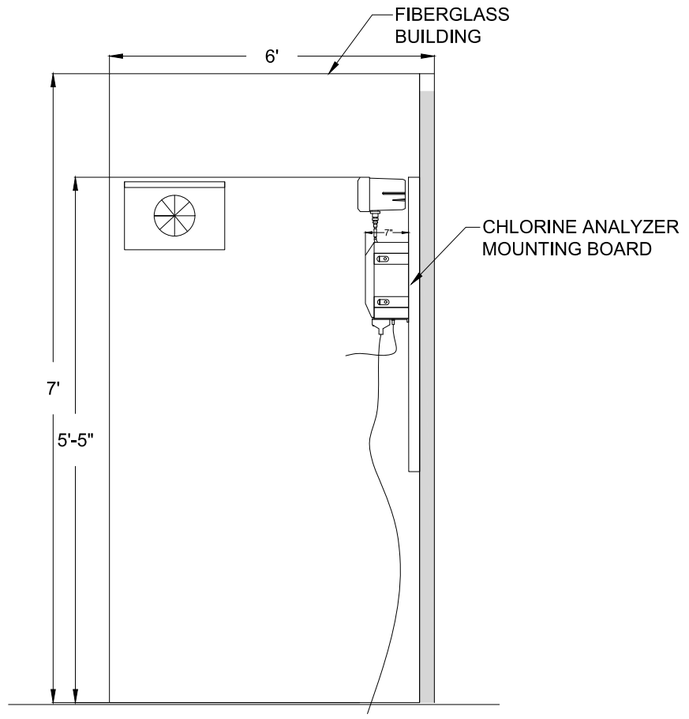
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-009A



FRONT VIEW



SIDE VIEW

NOTE:

1. ANALYZER NEEDS 110V POWER AND 4-20mA SIGNAL.
2. ANALYZER IS MOUNTED INSIDE FIBERGLASS BUILDING. REFER TO FIBERGLASS BUILDING DETAILS (M-009B).
3. PIPING AND FITTINGS INSTALLATION TO BE ADJUSTED AT SITE.

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
CHLORINE RESIDUAL ANALYZER

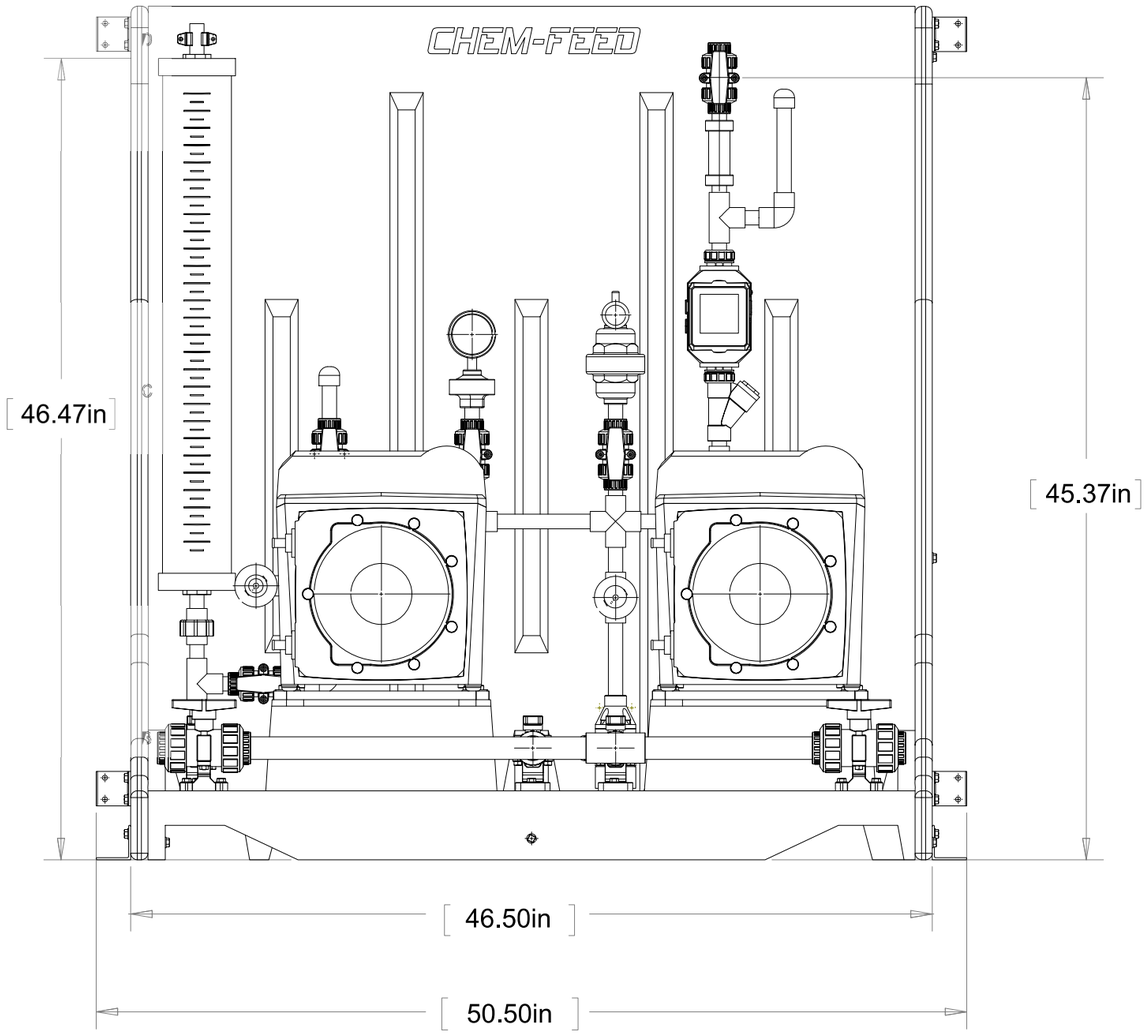
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

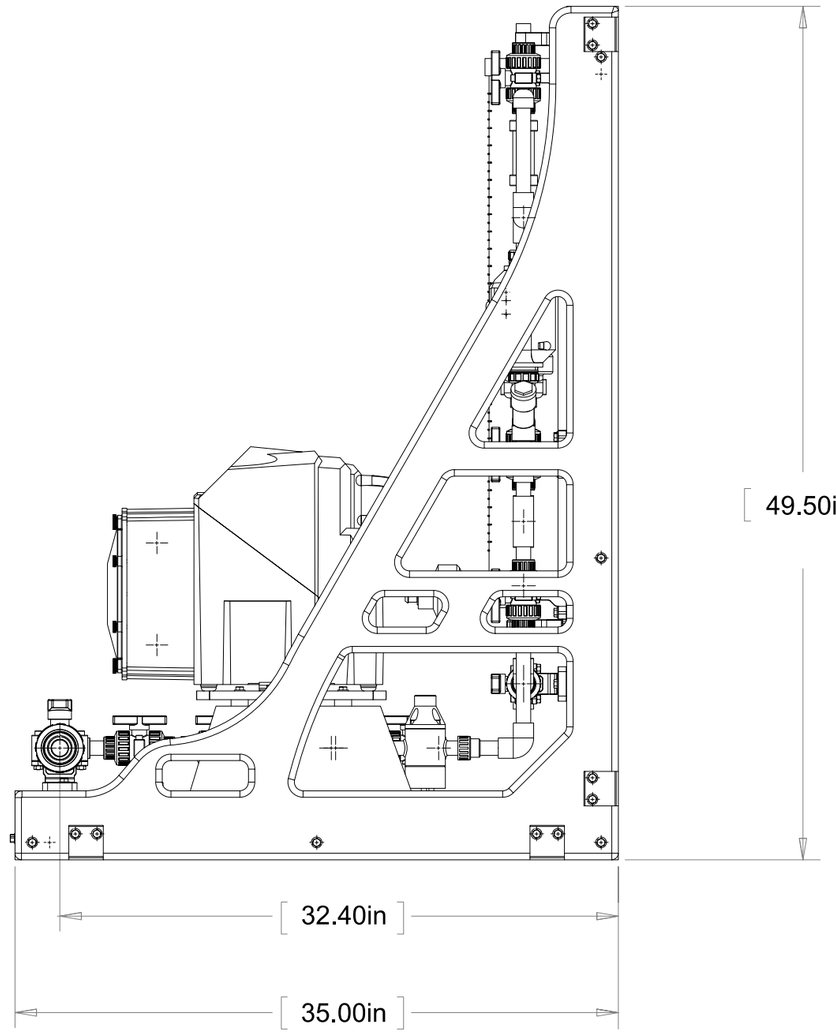
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-009B



ELEVATION



SIDE VIEW

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
DUPLEX CHLORINE PUMPS

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

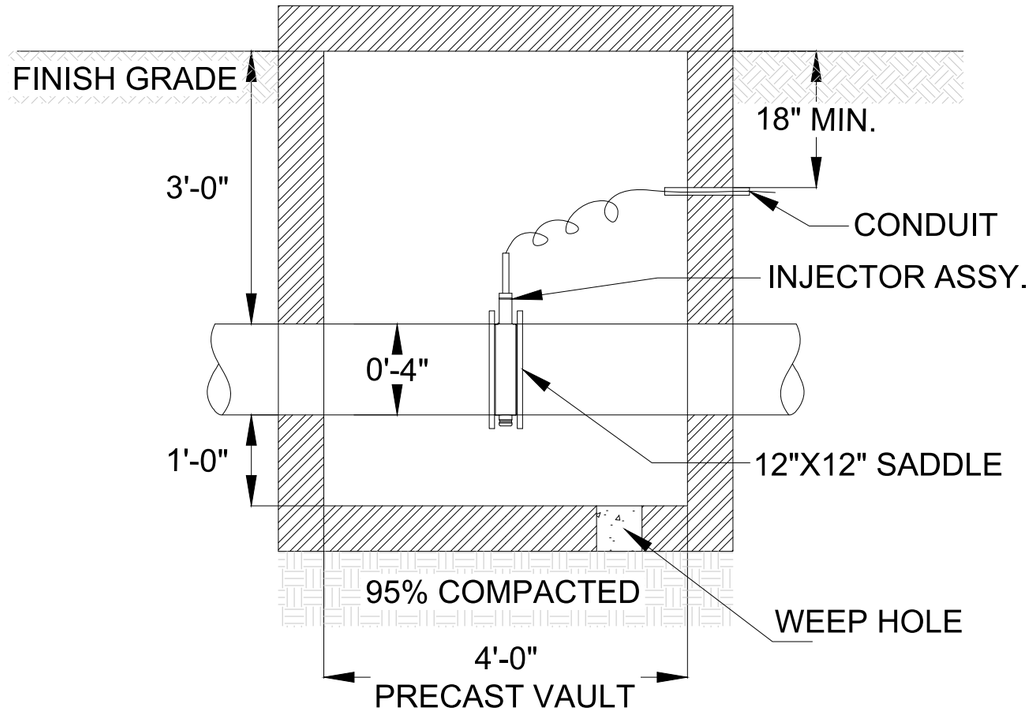
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 LICENSED PROFESSIONAL ENGINEER
9/06/24

M-010



INJECTION VAULT SECTION

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
INSTRUMENT VAULT DETAILS

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

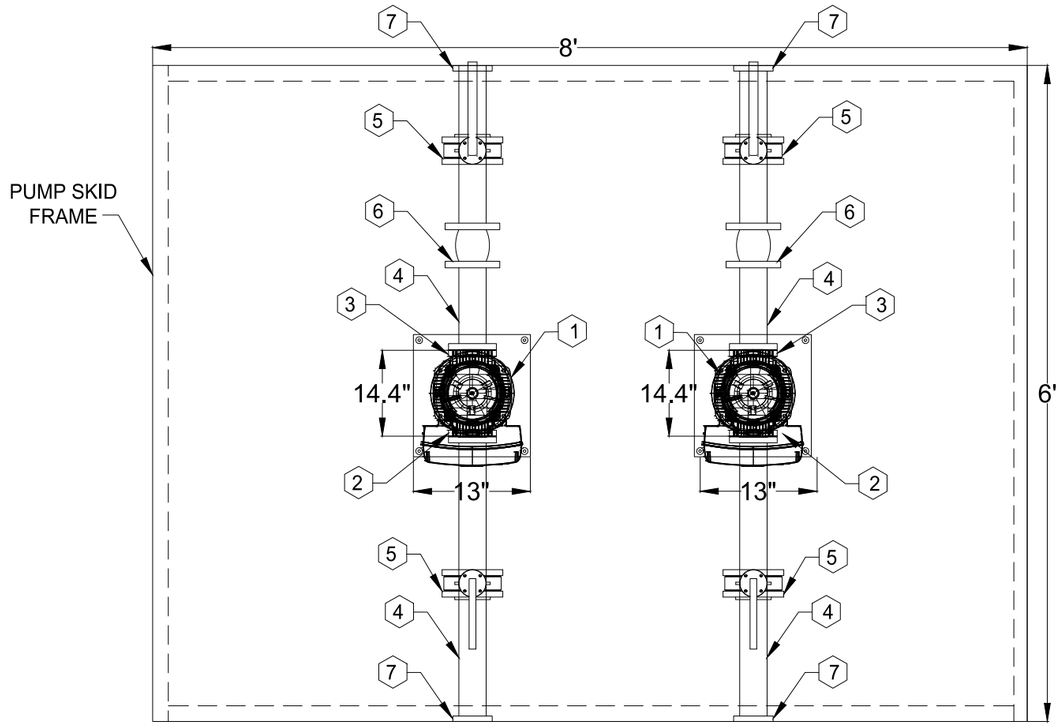
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

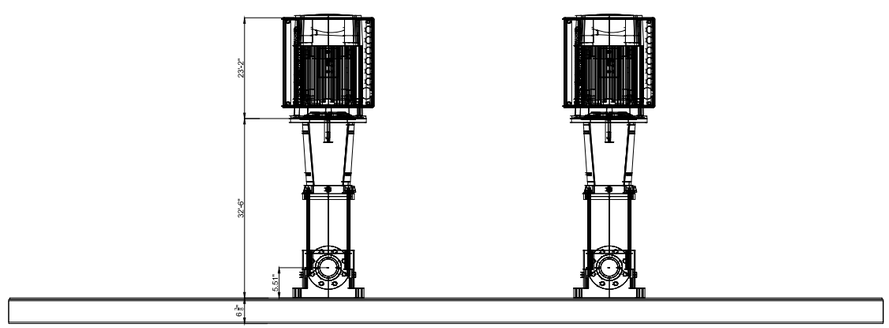
Jeffrey Snyder
144076
REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-011



KEY NOTES	DENOTED BY SYMBOL - ⬡	
S.NO.	DESCRIPTION	QUANTITY (NO.S)
1	VERTICAL MULTISTAGE CENTRIFUGAL PUMP	2
2	3" PUMP INLET FLANGE	2
3	3" PUMP DISCHARGE FLANGE	2
4	3" PIPE	4
5	3" BUTTERFLY VALVE	4
6	3" CHECK VALVE	2
7	3" FLANGE	4

PLAN



ELEVATION

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
BOOSTER PUMP SKID

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

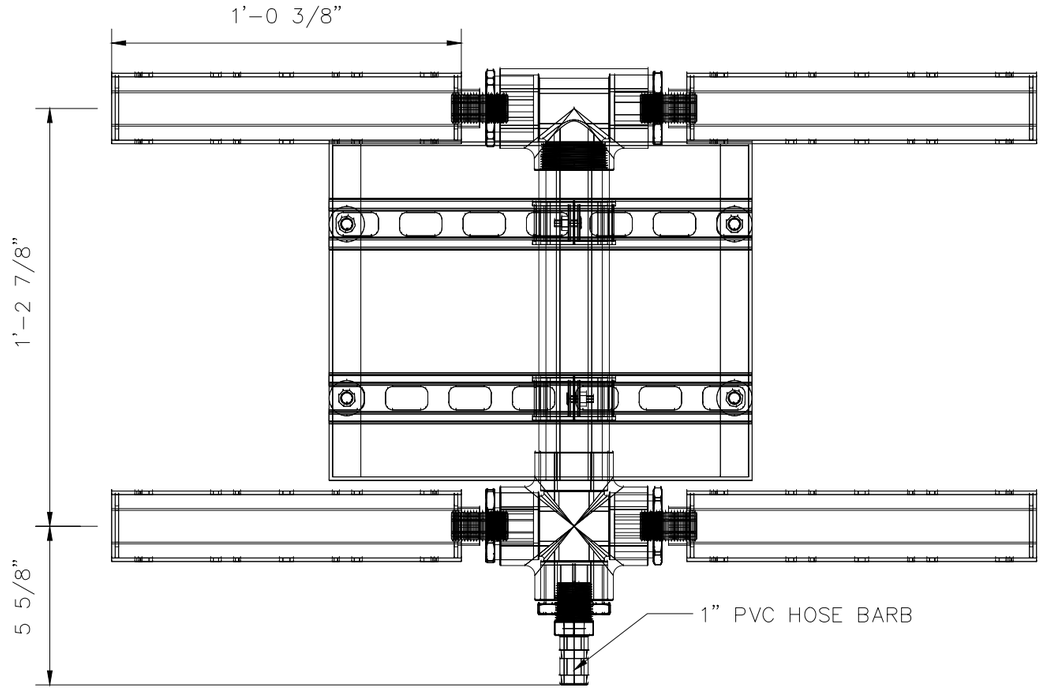
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

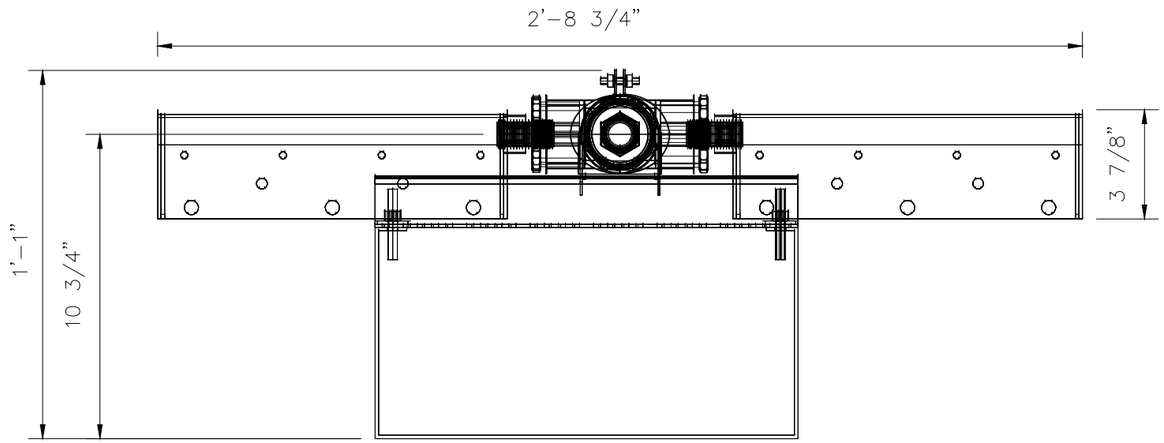
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 PROFESSIONAL ENGINEER
9/06/24

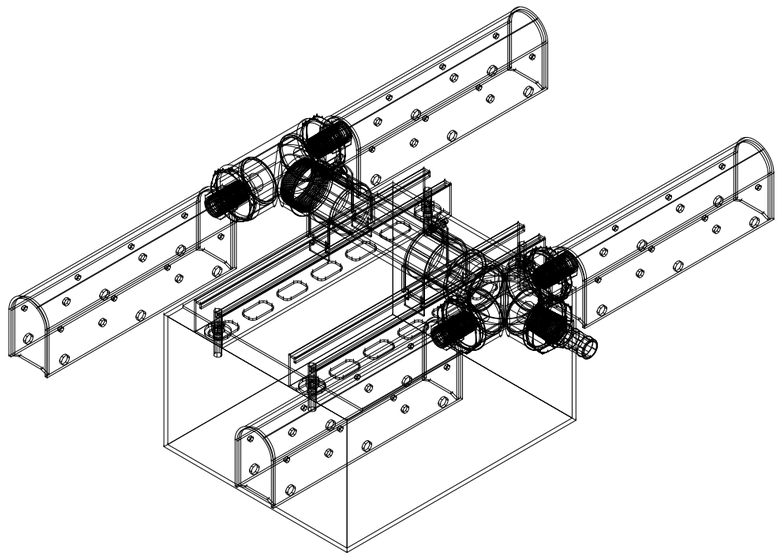
M-012



PLAN



ELEVATION



ISOMETRIC VIEW

NOTE:
1) FIVE (5) QTY OF GMECH MODEL BD-CB04-02H-01B BALLASTED COARSE BUBBLE DIFFUSERS TO BE PLACED IN EQ TANK
2) FIVE (5) QTY OF GMECH MODEL BD-CB04-02H-01B BALLASTED COARSE BUBBLE DIFFUSERS TO BE PLACED IN SHT TANK
3) (1) QTY OF 80 POUND SACK OF PREMIX CONCRETE PER BALLASTED DIFFUSER BOX

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
BALLASTED COARSE BUBBLE DIFFUSER

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

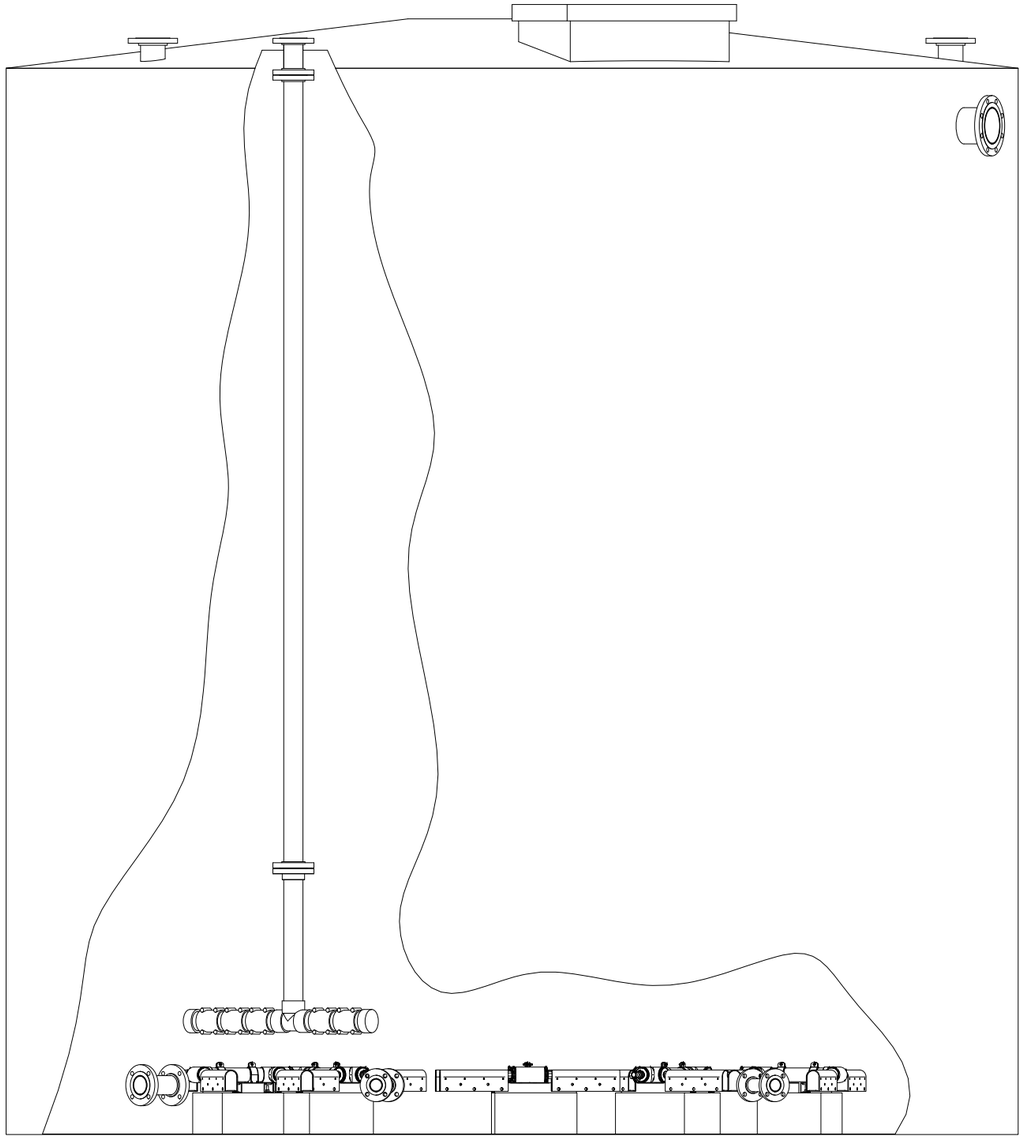
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

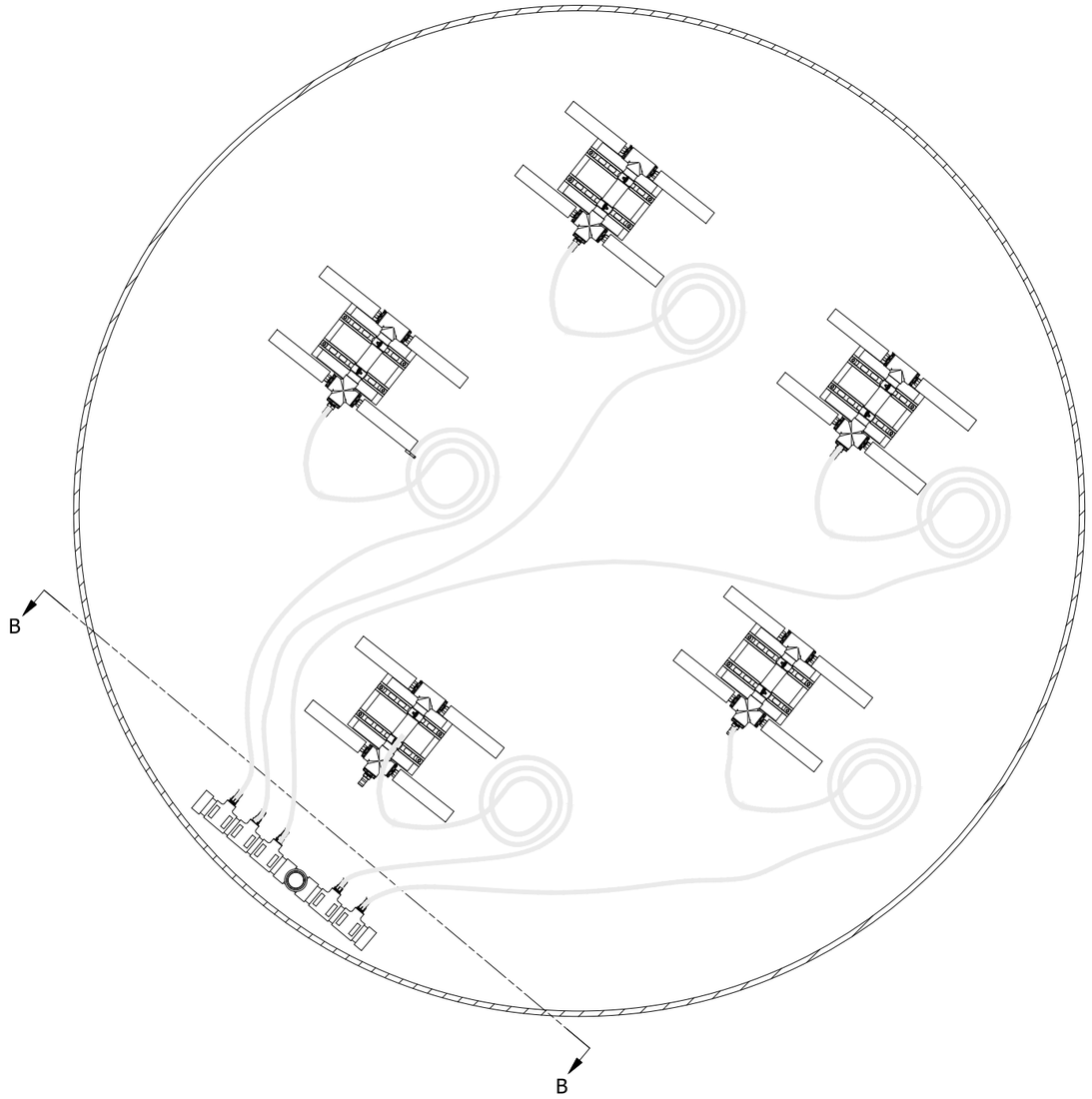
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

M-013A



TANK ELEVATION WITH SECTION VIEW
SCALE 1 / 35



PLAN
SCALE 1 / 35

DIFFUSER LAYOUT

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
BALLASTED COARSE BUBBLE DIFFUSER

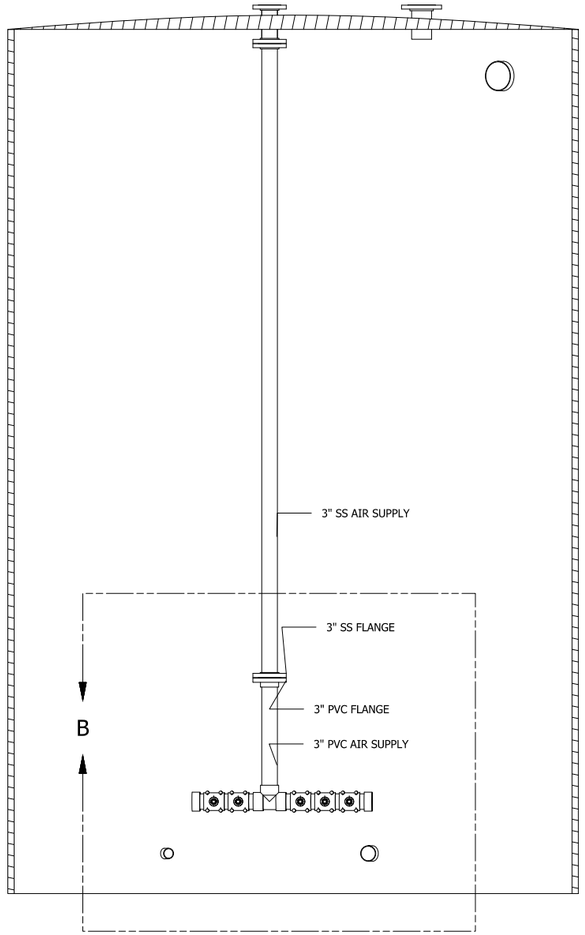
DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

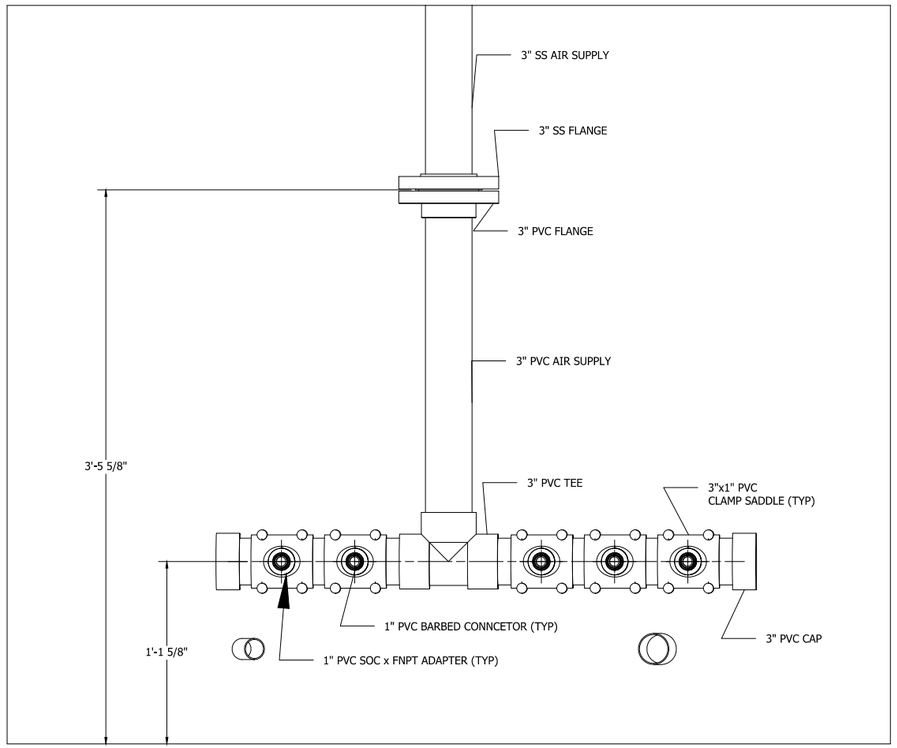
REVISIONS				
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144076 REGISTERED PROFESSIONAL ENGINEER
9/06/24

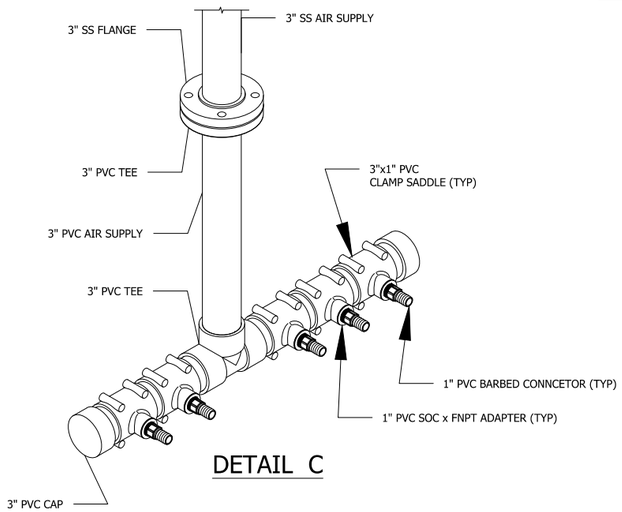
M-013B



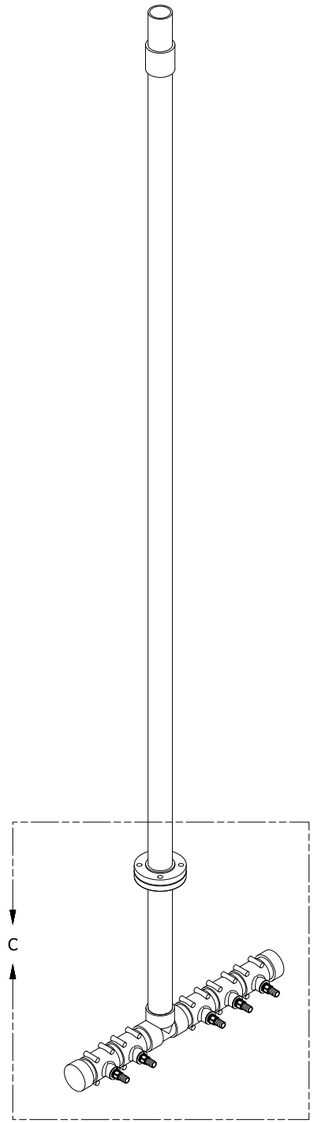
SECTION B-B
REF (M-004B)



DETAIL B



DETAIL C



ISOMETRIC VIEW

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
BALLASTED COARSE BUBBLE DIFFUSER

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

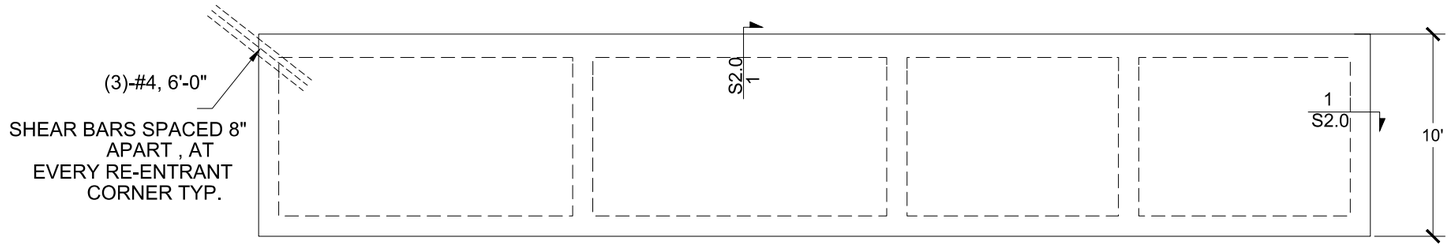
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER 144078 PROFESSIONAL ENGINEER
9/06/24

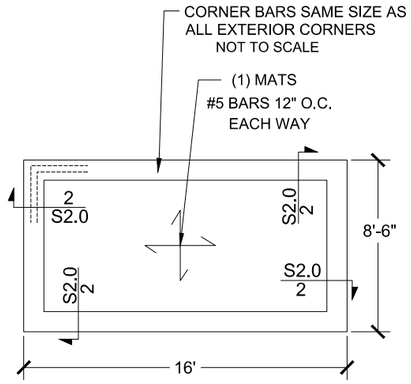
M-013C



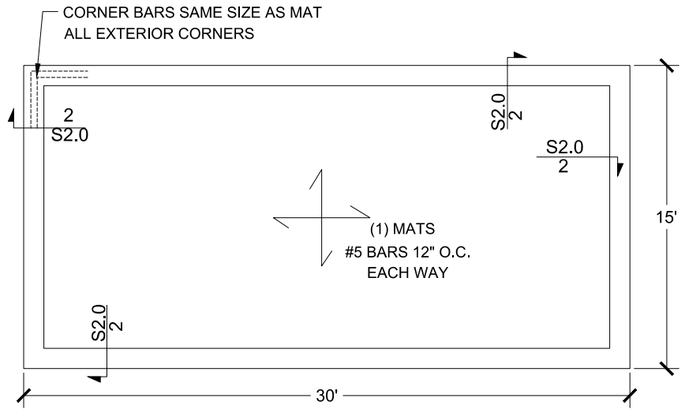
1 BLUBOX FOUNDATION
NOT TO SCALE

NOTE:

REFER TO S-002 FOR STRUCTURAL GENERAL NOTE, SLAB SCHEDULES, AND STANDARD DETAILS



2 EQUIPMENT SKID SLAB
NOT TO SCALE



3 HEADWORKS PLATFORM SLAB
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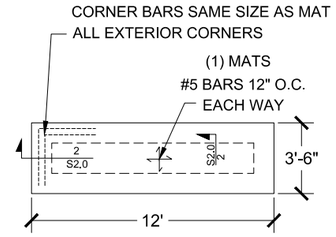

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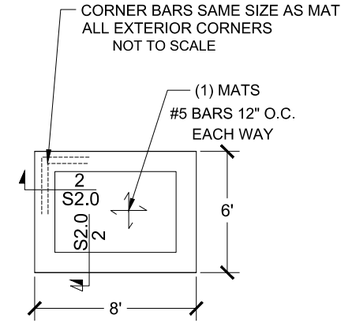

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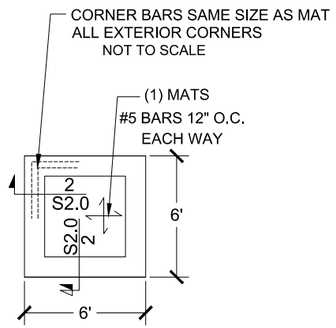

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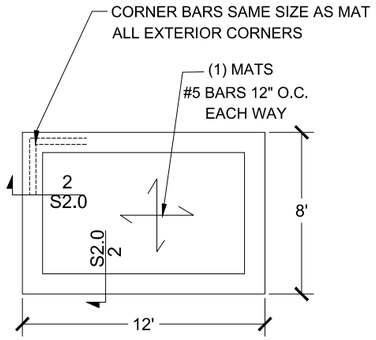

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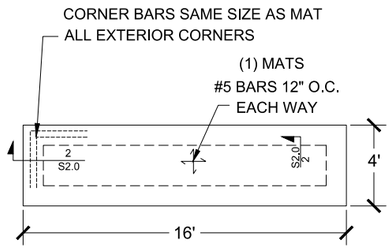

8 ELECTRICAL SERVICE EQUIPMENT
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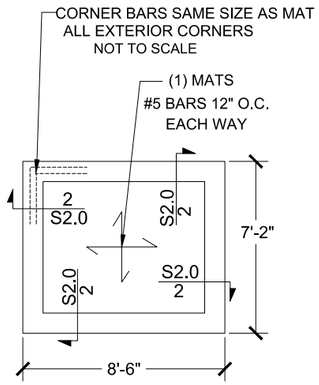

9 ST PUMP SKID SLAB
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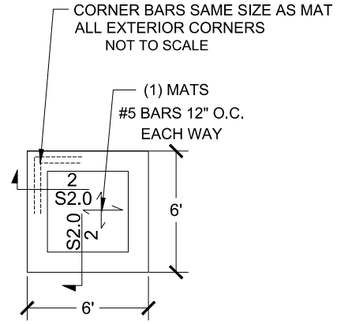


10 NaOCL FRP SHED SLAB
NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
MAJOR EQUIPMENT FOUNDATION SLAB

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR

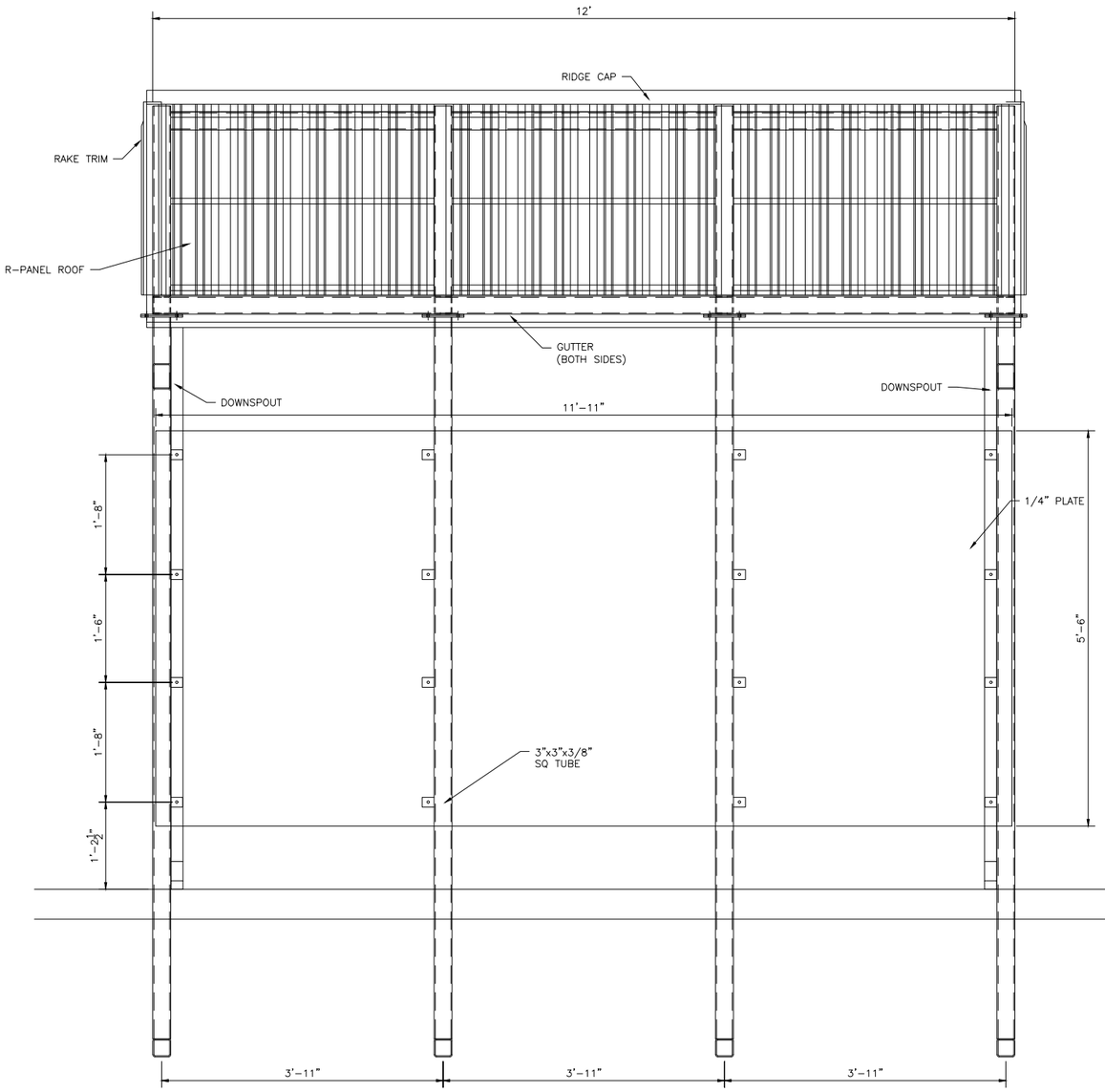
PROJECT START DATE:	SEP 2024
PROJECT NUMBER:	539
ENGINEER OF RECORD:	JMS

REVISIONS

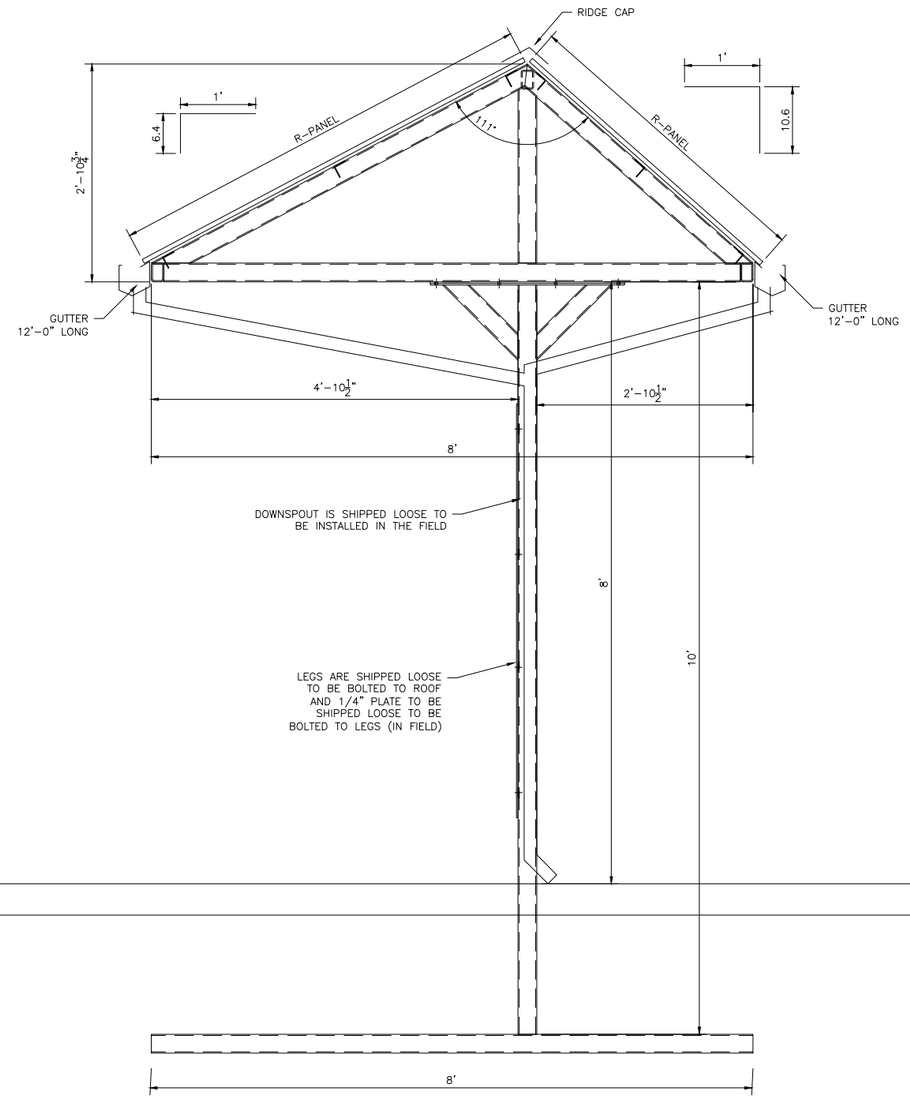
REV	DESCRIPTION	BY	DATE	APPROV.
A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder
JEFF SNYDER
144076
PROFESSIONAL ENGINEER
9/06/24

S-001A



FRONT VIEW



SIDE VIEW

NOTE :
1. CANOPY DEISGNS AND DRAWINGS ON THIS SHEET ARE ONLY FOR DEMONSTRATION PURPOSES; CONTRACTOR TO CHOOSE PRODUCTS MEETING DESIGN CRITERIA AND/OR SPECIFICATIONS PROVIDED BY TDS/IWS.

2. CANOPY SHOULD BE INSTALLED AT ALL OUTDOOR ROTARY MACHINERIES AND CHEMICAL STORAGE AREAS, INCLUDING EQ PUMPS, WAS PUMPS, PSU BLOWERS, SHT BLOWERS, EQ BLOWERS, BLUBOX CHEMICAL STORAGE AREA, POTABLE WATER CHLORINE (SODIUM HYPOCHLORITE) STORAGE TANK AND METERING PUMPS, POTABLE WATER SERVCIE PUMPS AND FIRE SERVICE PUMPS,ELECTRICAL PANELS, ETC

NOT TO SCALE

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
EQUIPMENT SHED/PAD

DATE:	7/25/24
DESIGNED BY:	MR
DRAWN BY:	SS
CHECKED BY:	SR
PROJECT START DATE:	SEP 2024
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Jeffrey Snyder
JEFF SNYDER
144076
PROFESSIONAL ENGINEER
9/06/24

S-001B

GENERAL FOUNDATION NOTES:

1.0 GENERAL

1.1 THIS FOUNDATION HAS BEEN DESIGNED AS A GROUND SUPPORTED CONCRETE SLAB-ON-GRADE FOUNDATION, AND AS SUCH WILL MOVE WITH THE SOILS UPON WHICH IT BEARS. THIS DESIGN IS INTENDED TO LIMIT SUCH MOVEMENT TO WITHIN THE DEFLECTION TOLERANCES SET FORTH IN THE INTERNATIONAL BUILDING CODE, EDITION ENFORCED AT TIME OF DESIGN.
1.2 THIS FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT DONE BY ROCK ENGINEERING AND TESTING (REPORT No. G322264)
1.3 DO NOT SCALE THIS DRAWING. THIS IS A SCHEMATIC PLAN TO BE USED TO LOCATE AND IDENTIFY STRUCTURAL FOUNDATION ELEMENTS ONLY. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE BUILDER AND CONTRACTOR TO FOLLOW THE ENGINEER, DESIGNER PLANS, OR EXISTING SITE CONDITIONS. USE THIS PLAN FOR PLACEMENT OF STRUCTURAL FOUNDATION ELEMENTS ONLY.
1.4 THE BUILDER SHALL VERIFY ALL DIMENSIONS, SLAB DROP DEPTH AND LOCATIONS, BLOCK OUTS, AND ALL OTHER NOTED ITEMS WITH THE ENGINEER OR DESIGNER PLANS AND SHALL NOTIFY THE ENGINEER OR DESIGNER IN WRITING OF ANY DISCREPANCY AND FOR DIRECTIONS TO RESOLVE THE DISCREPANCY. THE CIVIL OR DESIGNER PLANS TAKE PRECEDENCE OVER THIS DRAWING IF ANY NON-STRUCTURAL DIMENSIONAL DISCREPANCY EXISTS.
1.5 THE BUILDER SHALL COORDINATE THIS DRAWING WITH ALL STRUCTURAL, CIVIL, ELECTRICAL, AND MECHANICAL PLANS FOR ALL OPENINGS, EMBEDDED ITEMS, DROPS, OFFSETS, SLOPES, ETC. AND SHALL NOTIFY THE ENGINEER OR DESIGNER IN WRITING OF ANY DISCREPANCY AND FOR DIRECTIONS TO RESOLVE THE DISCREPANCY.
1.6 SEE SITE PLAN, CIVIL PLAN, OR DESIGNER PLAN FOR ACTUAL TOP-OF-SLAB FINISH FLOOR ELEVATION.

2.0 DESIGN DATA AND CRITERIA

2.1 THE FOUNDATION DESIGN UTILIZED GUIDANCE PROVIDED IN THE 2018 IBC, ASCE 7-16, AND THE ACI 318-14
2.2 STRUCTURAL FOUNDATION DESIGN LOADS: DEAD LOAD: WEIGHT OF MECHANICAL COMPONENTS AND FOUNDATION
2.3 GEOTECHNICAL INFORMATION BASED ON GEOTECHNICAL REPORT DONE BY ROCK ENGINEERING AND TESTING (REPORT No. G322264) EFFECTIVE PLASTICITY INDEX = 25, BASED ON A MINIMUM OF 1FT. SOIL EXCAVATION, PRV< 1-1/2" AND REPLACE WITH SELECT FILL.

DEAD LOAD:
BLOWERS: 201 PSF
PUMPS: 185 PSF
HEAD WORKS: 290 PSF

LIVE LOAD:
MECHANICAL - 150 PSF

SEISMIC:
RISK: II SS: 0.051 SDS: 0.045
SITE CLASS: D S1: 0.028 SD1: 0.028

3.0 SITE PREPARATION AND DRAINAGE

3.1 REMOVE EXISTING SITE NATIVE SOILS, AND PLACEMENT AND COMPACTION OF SELECT STRUCTURAL FILL PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
3.2 IT IS THE ENGINEER'S RECOMMENDATION THAT IN ACCORDANCE WITH ANY GEOTECHNICAL REPORT, OR IN THE ABSENCE THEREOF, SELECT STRUCTURAL FILLS BE PROVIDED AT THE LOCATION OF PROPOSED FOUNDATION CONSTRUCTION. A MINIMUM DEPTH OF FILL MATERIAL SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT, OR EQUAL TO THE DEPTH OF SURFACE SOILS EXCAVATION. THEREAFTER, ADDITIONAL FILL MATERIAL SHALL BE PROVIDED TO FORM A STRUCTURAL BASE AT THE GREATER OF A MINIMUM OF 12" IN HEIGHT, OR AS REQUIRED FOR PROPER FOUNDATION EXPOSURE. THE STRUCTURAL FILL SHALL CONSIST OF TYPE A CRUSHED LIMESTONE, OR TYPE B CLAYEY CRUSHED GRAVEL, IN ACCORDANCE WITH TXDOT SPECIFICATION ITEM 247 FOR GRADE 1 FILL MATERIALS. STRUCTURAL FILL SHALL BE PLACED IN LIFTS OF 8 INCHES, AND COMPACTED IN ACCORDANCE WITH TXDOT SPECIFICATION TEX-113-E, WITH MOISTURE CONTENT CONTROLLED TO CONFORM TO TXDOT SPECIFICATION ITEM 204 "SPRINKLING".
3.3 TREES WITHIN A DISTANCE TO THE FOUNDATION OF ONE TIMES THE MATURE TREE HEIGHT MAY DAMAGE THE FOUNDATION. EXISTING AND NEWLY PLANTED TREES WITHIN ONE TIMES THE MATURE TREE HEIGHT TO THE FOUNDATION PERIMETER ARE AT THE RISK OF BUILDER AND/OR OWNER AND MUST HAVE A PROPERLY DESIGNED AND PLACED ROOT SHIELD (ROOT BARRIER), DESIGNED BY AN ARBORIST OR TREE EXPERT, TO INHIBIT TREE ROOT GROWTH TOWARD AND UNDER THE FOUNDATION.
3.4 VOIDS (HOLES) CREATED AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, TREES, AND OTHER EXISTING OBJECTS SHALL BE FILLED WITH WELL COMPACTED SELECT FILL MATERIAL. THIS IS USUALLY DONE BY LAYERING THE HOLE WITH SELECT FILL MATERIAL APPLYING WATER AND COMPACTING EACH LAYER, COMPACTING WITH HEAVY EARTH MOVING EQUIPMENT OR A HEAVY TRUCK. CONTINUE THIS PROCESS UNTIL THE HOLE IS FILLED.
3.5 SITE SURFACE DRAINAGE DURING CONSTRUCTION IS VERY IMPORTANT IN CONTROLLING MOISTURE PROBLEMS ASSOCIATED WITH THE BELOW SLAB FILL, LOT FILL MATERIAL, AND SUB-GRADE SOILS. BUILDER SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE FOUNDATION. THE BUILDER IS RESPONSIBLE FOR THE INSTALLATION OF BERMS OR SWALES ON THE UPHILL SIDE OF THE CONSTRUCTION AREA TO DIVERT SURFACE RUNOFF AWAY FROM THE FOUNDATION AREA DURING CONSTRUCTION.
3.6 THE BUILDER IS RESPONSIBLE FOR LOCATION OF WATER-BEARING UTILITIES, ROOF DRAINAGE OUTLETS, AND IRRIGATION SPRAY HEADS OUTSIDE OF THE FOUNDATION PERIMETER DRAIN BOUNDARIES.
3.7 THE BUILDER IS RESPONSIBLE FOR CONSTRUCTION OF FINAL SURFACE DRAINAGE PATTERN TO PREVENT PONDING AND LIMIT SURFACE WATER INFILTRATION AT THE FOUNDATION PERIMETER. THE GROUND ADJACENT TO THE FOUNDATION SHALL SLOPE DOWN AND AWAY A MINIMUM OF SIX PERCENT IN THE FIRST 10FEET.

4.0 FOUNDATION CONSTRUCTION

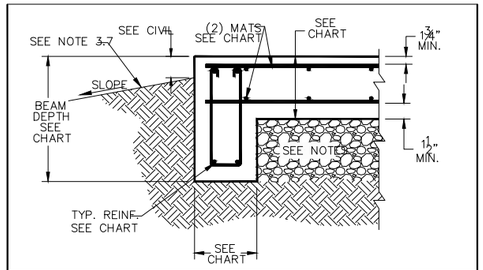
4.1 FILL MATERIAL PLACED BENEATH THE FOUNDATION SLAB AREAS (SLAB FILL MATERIAL) SHALL BE WELL GRADED GRANULAR LOW PLASTICITY SELECT FILL MATERIAL HAVING A PI OF 5 TO 20 WITH A LIQUID LIMIT NOT EXCEEDING 40 PERCENT. THE FILL MATERIAL SHOULD BE FREE OF ORGANICS, TRASH, RUBBLE, OR OTHER DELETERIOUS MATERIALS AND SHALL HAVE NO PARTICLE SIZE GREATER THAN 3 INCHES IN DIAMETER. CRUSHED LIMESTONE OR CRUSHED AND UNCRUSHED GRAVEL MATERIAL MEETING THE REQUIREMENTS OF TXDOT ITEM 247, TYPE A, GRADE 1 OR 2, UNLESS OTHERWISE SPECIFIED IN THE GEOTECHNICAL REPORT.
4.2 SOIL FROM BEAM EXCAVATION AND OTHER SITE EXCAVATIONS SHALL NOT BE USED AS SLAB FILL MATERIAL.
4.3 SLAB FILL MATERIAL SHALL BE COVERED AND PROTECTED FROM GETTING WET PRIOR TO PLACEMENT IN THE FOUNDATION SLAB AREAS AND AFTER PLACEMENT IN THE FOUNDATION SLAB AREAS.
4.4 THE SLAB FILL MATERIAL SHALL BE A MINIMUM OF (12) TWELVE INCHES THICK BENEATH ALL FOUNDATION SLAB AREAS AND PLACED TO A FINISH GRADE ELEVATION EQUAL TO THE GRADE ELEVATION OF THE BOTTOM OF THE SLAB. THE SLAB FILL MATERIAL SHALL BE PLACED IN MAXIMUM 6 INCH LIFTS AND MACHINE TAMPED TO REDUCE FILL SETTLEMENT.
4.5 TRENCHING OF GRADE BEAMS SHALL BE EXCAVATED TO PROVIDE THE BEAM CROSS SECTION INDICATED. BEAM AND SLAB DEPTHS AND WIDTHS AS INDICATED ARE MINIMUM ACCEPTABLE SIZES. LARGER SIZE BEAMS AND SLABS FORMED BY LESS ACCURATE TRENCHING MAY REQUIRE ADDITIONAL REINFORCING NOT SHOWN WHICH SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION REVIEW. ALL LOOSE DIRT FROM SIDES AND BOTTOMS OF TRENCHES SHALL BE REMOVED. HAUNCHES SHALL BE CUT ON EACH SIDE OF TRENCHES OF ADEQUATE SIZE TO MAINTAIN THE VERTICAL SIDES OF THE TRENCH.
4.6 NOT USED
4.7 IN DEEP SLAB FILL AREAS, BAGGED FILL TO FORM THE WALLS OF BEAM TRENCHES SHALL BE PROHIBITED.
4.8 THE CONTRACTOR AND/OR BUILDER IS RESPONSIBLE FOR THE STABILITY OF ALL SLAB FILL MATERIAL.
4.9 NOT USED
4.10 ALL EXTERIOR FOUNDATION BEAMS ARE TO BE EXCAVATED AND EMBEDDED INTO UNDISTURBED SOIL OR PROPERLY COMPACTED LOT FILL MATERIAL TO A MINIMUM DEPTH OF 6 INCHES OR AS NOTED IN THE DETAILS AND DESIGN CHART ON THIS DRAWING, WHICHEVER IS GREATER, OR INTO BEDROCK TO A MINIMUM DEPTH OF 6 INCH.
4.11 REMOVE FREE WATER FROM BEAM TRENCHES AND ALL OTHER EXCAVATIONS BEFORE PLACING CONCRETE. CLEAN BOTTOM OF BEAM TRENCHES OF LOOSE SOIL, ROOTS, GRAVEL, AND ALL DEBRIS PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE PLACED ON SOILS THAT HAVE BEEN DISTURBED BY RAINFALL OR WATER SEEPAGE.
4.12 FORMWORK SHORING SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) ACI 347, "STANDARD FOR DESIGN AND PLACEMENT OF CONCRETE FORMWORK",
4.13 ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 302.1R.
4.14 PROPER CURING OF ALL CONCRETE SURFACES SHALL BE PROVIDED BY THE BUILDER AND IN ACCORDANCE WITH THE LATEST EDITION OF ACI 308, "STANDARD PRACTICE FOR CURING CONCRETE." IF SPRAY-ON CURING COMPOUNDS ARE USED, THEY NEED TO BE COMPATIBLE WITH SUBSEQUENT FINISH APPLICATIONS.
4.15 DO NOT PLACE CONCRETE WHEN TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT UNLESS COLD WEATHER CONCRETE PROCEDURES ARE FOLLOWED. CALCIUM CHLORIDE SHALL NOT BE USED. PROVIDE SPECIAL CARE TO PREVENT HIGH TEMPERATURES DURING HOT WEATHER CONDITIONS IN FRESH CONCRETE. USE WATER REDUCING SET RETARDING ADMIXTURES IN SUCH QUANTITIES AS SPECIFICALLY RECOMMENDED BY THE MANUFACTURER TO ASSURE THE CONCRETE REMAINS WORKABLE. DO NOT PLACE CONCRETE IF FREEZING TEMPERATURES ARE PREDICTED WITHIN 7 DAYS OF CONCRETE PLACEMENT. DURING HOT WEATHER CLIMATE CONDITIONS CONTRACTOR IS RESPONSIBLE FOR REDUCING THE SPEED OF HYDRATION TO PREVENT SURFACE CRACKS WITH IN THE SLAB.
4.16 SCHEDULING OF CONCRETE DELIVERY SHALL BE SUCH TO PREVENT PLACED CONCRETE FROM HARDENING PRIOR TO PLACEMENT OF ADDITIONAL FRESH CONCRETE. NO HORIZONTAL JOINTS WILL BE PERMITTED IN THE CONCRETE EXCEPT AS NOTED. THE BUILDER SHALL CONTACT LSS PRIOR TO PLACING ANY CONCRETE IF CONSTRUCTION JOINTS ARE REQUIRED.
4.17 SLAB FINISH TOLERANCES SHALL BE TRUE PLANES WITHIN 1/8 INCH IN 10 FEET AS DETERMINED BY A 10 FOOT DIRECTION.
4.18 PROVIDE EXPANSION JOINT MATERIAL BETWEEN BUILDING FOUNDATIONS AND ADJACENT CONCRETE WALKS AND PAVEMENT, 1/2 INCH MIN BY DEPTH OF WALK. SEAL EXPANSION JOINTS WITH FLEXIBLE SEALANT BY SIKA CORP. UNLESS NOTED OTHERWISE. PROVIDE SMOOTH DOWELS 1/2 INCH BY 16 INCHES LONG AT 18 INCHES ON CENTER ALONG ALL ENTRIES. LOCATE DOWELS BELOW FOUNDATION TOP BEAM OR SLAB REINFORCEMENT.

5.0 CONCRETE AND REINFORCING STEEL

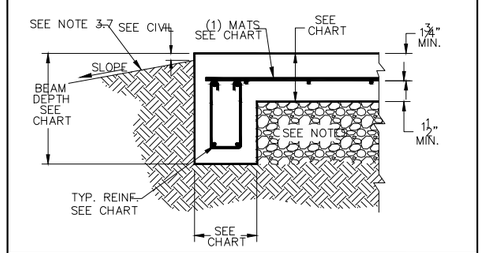
5.1 ALL CONCRETE AND REINFORCING STEEL SHALL MEET LATEST EDITION OF ASTM A615 AND ACI 117 "STANDARD TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".
5.2 WHILE SOME SHRINKAGE CRACKING IS TO BE EXPECTED IN THE CONCRETE, IT HAS BEEN SHOWN TO BE SIGNIFICANTLY REDUCED THROUGH PROPER CURING PROCEDURES AND PROPER CONTROL OF ADMIXTURES. ONLY THOSE ADMIXTURES HAVING SPECIFIC WRITTEN AUTHORIZATION OF THE DESIGN ENGINEER SHALL BE INTRODUCED WITH THE CONCRETE MIX.
5.3 TESTING SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDER, AND ANY SUBSTANDARD STRENGTHS SHALL BE REPORTED TO TDS.
5.4 CONCRETE SHALL BE PLACED IN ACCORDANCE WITH LATEST EDITION OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
5.5 CONCRETE COMPRESSIBLE STRENGTH SHALL BE 4000 PSI MINIMUM STRENGTH AT 28 DAYS.
5.6 CEMENT SHALL BE TYPE 1 (GRAY) PORTLAND. MAXIMUM WATER CEMENT RATIO SHALL BE 0.5 AND A SLUMP RANGE OF 2 TO 4 INCHES. CONTRACTOR SHALL SATISFY HIMSELF THAT THE MIX DESIGN IS ACCEPTABLE FOR ITS INTENDED PURPOSE.
5.7 REINFORCING STEEL SHALL MEET LATEST EDITION OF ASTM A-615, GRADE 60 DEFORMED BARS. #3 BARS MAY BE GRADE 40.
5.8 WELDED WIRE MESH (WWM) SHALL MEET LATEST EDITION OF ASTM A-185 OR ASTM A-497. USE FLAT SHEETS ONLY. ALL LAPS TO BE 2 FULL SQUARES.
5.9 ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED AT 48" O.C. TO PREVENT VERTICAL AND HORIZONTAL MOVEMENT DURING THE PLACEMENT OF CONCRETE. METAL, PLASTIC, CONCRETE, OR MASONRY CHAIRS MAY BE USED TO SUPPORT REINFORCEMENT. SLAB REINFORCING SHALL BE CENTERED IN CONCRETE SLAB THICKNESS. 5.10 SLAB REINFORCING BARS SHALL BE TIED AT EVERY OTHER INTERSECTION AND SUPPORTED AT 48 INCHES O.C. WITH METAL, PLASTIC, CONCRETE, OR MASONRY CHAIRS. EVERY STIRRUP BAR SHALL BE TIED AT BOTH TOP AND BOTTOM BEAM REINFORCING BAR LOCATION. STIRRUPS ARE TO BE INSTALLED VERTICALLY. ANGLED STIRRUPS ARE NOT PERMITTED.
5.11 ALL BEAM REINFORCING BARS SHALL HAVE A MINIMUM CLEAR COVER OF 3 INCHES FROM THE BOTTOM OF THE BEAM AND 2 INCHES FROM THE TOP AND SIDES OF THE BEAM.
5.12 REINFORCING STEEL LAPS AND SPLICES SHALL BE A MINIMUM OF 30 BAR DIAMETERS, BUT NO LESS THAN 12 INCHES. SPLICES OF THE TOP AND BOTTOM BEAM REINFORCEMENT SHALL BE STAGGERED A MINIMUM OF 5 FEET.
5.13 ALL BEAM SIZES, SLAB THICKNESS, AND REINFORCING SIZES ARE A MINIMUM AND SHALL NOT BE DECREASED WITHOUT PRIOR APPROVAL BY ENGINEER.
5.14 ALL BEAM SPACING ARE MAXIMUM AND SHALL NOT BE INCREASED OR RELOCATED WITHOUT APPROVAL BY ENGINEER.
5.15 FOR EXTERIOR BEAMS REQUIRING DEPTHS EXCEEDING 3 FEET DUE TO GRADE CONDITIONS, PROVIDE 2-#4 INTERMEDIATE HORIZONTAL BARS AT 18" CENTERS IN ADDITION TO REINFORCING NOTED ABOVE. BEAMS GREATER THAN 6 FEET DEEP REQUIRES STIRRUP SPACING @ 18" O.C. MAX.
5.16 WHERE ROCK IS ENCOUNTERED SHALLOWER THAN THE DETAILED BEAM DEPTH, THE BEAM MAY BE REDUCED IN DEPTH TO A MINIMUM OF 16" DEEP INTERIOR, 20" EXTERIOR.
5.17 ALL EXTERIOR BEAMS SHALL EXTEND AT LEAST SIX (6) INCHES INTO UNDISTURBED SOIL UNLESS FILL HAS BEEN TESTED AND CERTIFIED TO HAVE BEEN PLACED IN COMPLIANCE WITH F.H.A. DATA SHEET 79-G. TEST DATA SHALL ALSO INDICATE THE PLASTICITY INDEX OF FILL MATERIAL. A REDESIGN OF THE FOUNDATION WILL BE REQUIRED IF FOREIGN MATERIAL WITH A PLASTICITY INDEX GREATER THAN 10 ABOVE THE DESIGN STANDARD IS USED FOR FILL MATERIAL.

6.0 NOT USED

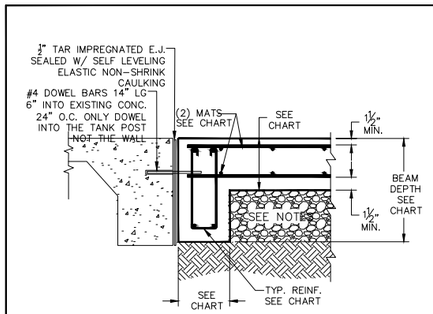
7.0 ANCHOR BOLTS:
7.1 REFER TO BUILDING AND EQUIPMENT MANUFACTURER FOR REQUIRED ANCHORING.



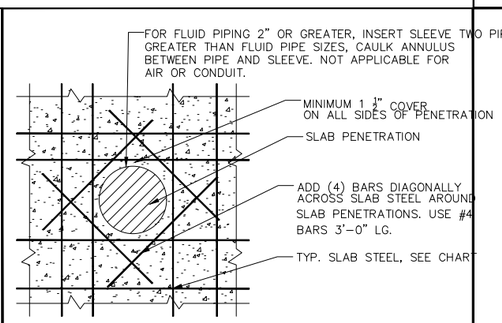
1 TYP. EXT. BEAM DOUBLE SLAB MATS NTS



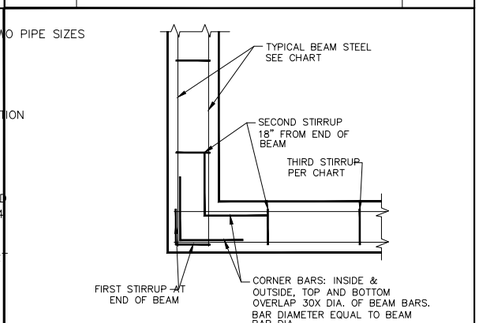
2 TYP. EXT. BEAM SINGLE SLAB MATS NTS



3 TYP. DOWEL DETAIL NTS



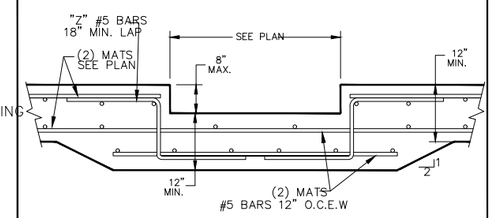
4 TYP. PENETRATION DETAIL NTS



5 TYP. BEAM CORNER DETAIL NTS

FOUNDATION SCHEDULE, UNLESS NOTED									
	MINIMUM HEIGHT ABOVE GRADE	MINIMUM BEAM WIDTH	MINIMUM BEAM DEPTH	MINIMUM BEAM DEPTH IN GRADE	BEAM BARS T & B	SLAB BARS	SLAB THICKNESS	BEAM STIRRUPS	
								BEAM DEPTH	STIRRUP SPACING
SLAB-1	EXT: 6"	EXT: 12"	EXT: 30"	24"	TOP: (2) #5 BTM: (2) #5	(2) MATS #5 @ 12" O.C.E.W. T&B	12"	18"-24"	#3 @ 16"
								>24"	#3 @ 24"
SLAB-2,3,4 5,6,7,8,9 and 10	EXT: 3"	EXT: 12"	EXT: 15"	12"	#5	#5 @ 12" O.C.E.W.	6"	12"	#3 @ 24"

NOTE:
1: BUILDER/ CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DROPS, FLOOR PENETRATIONS, AND BLOCK-OUT LOCATIONS ON SITE.



6 DOUBLE SLAB MAT THICKENED SLABS

INTEGRATED WATER SERVICES, INC. FIRM #15328

DOUBLE L RANCH
RECLAIMED WATER PRODUCTION FACILITY
NOTES

DATE:	7/25/24
DESIGNED BY:	MR
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CHECKED BY:	SR

PROJECT START DATE:	SEP 2024
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REVISIONS				
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A	ISSUED FOR BIDDING	MS	9/06/24	JS

Jeffrey Snyder 144076 LICENSED PROFESSIONAL ENGINEER 9/06/24

S-002

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

This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated into a project. It should also be noted that the timing and procedures presented herein are general guidelines. Adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions but may not be altered without TCEQ approval.

Vegetative Filter Strips:

Inspection of the VFS for erosion and damage to vegetation should occur at least twice per year; additional inspection periods, however, should occur after heavy rainfall. The BMPs should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. If areas are found that have bare spots or that need restoration, those areas should be replanted to meet the TCEQ requirements.

Inspections for debris and litter removal should be performed twice per year, at the minimum. Routine periodic checks are preferred. The filter strips should be kept free of obstructions and debris to allow for proper usage and minimal blockage. Additionally, monitoring to ensure channels and preferential flow paths have not developed should be conducted during routine inspection.

Vegetative Filter Strips must be mowed at least twice per year to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed. Regular mowing should also include weed control practices; herbicide usage, however, should be kept to a minimum.

*All inspection and maintenance records must be kept at the office of the operator for the previous three years.

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners association covenants, or other binding document.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

An amended copy of this document will be provided to the TCEQ within thirty (30) days of any changes in the following information.

Responsible Party: Double L Development, LLC.

Mailing Address: 1600 West Loop South, Suite 2600

City, State, Zip: Houston, Texas 77027-3051

Telephone: (713) 623-2466

(Signature of Responsible Party)

Agent/Engineer: Stacy Mulholland, P.E. – Brown & Gay Engineers, Inc.

Mailing Address: 7330 San Pedro Ave, Suite 202

City, state, Zip: San Antonio, Texas 78216

Telephone: (210) 581-3637

(Signature of Agent/Engineer)

Attachment O – Pilot-Scale Field Testing Plan

Not applicable to this project.

Attachment P – Measures for Minimizing Surface Stream Contamination

The site will be stabilized using silt fence. All of the stabilization will be installed prior to construction and will be removed after construction has been completed. These methods will minimize any increases in erosion caused by construction. Additionally, the proposed permanent BMPs will treat any stormwater passing through the site prior to that stormwater's returning to existing drainage patterns and eventually flowing to surface streams. There will be no increase to flow off-site.

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Stacy Mulholland, P.E.

Date: 9/26/2025

Signature of Customer/Agent:

Regulated Entity Name: Double L Ranch Reclaimed Water Production Facility

Project Information

Potential Sources of Contamination

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

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

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

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

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

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

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

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

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

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Little Barton Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☐ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

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

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

Attachment A – Spill Response Action

No spills of hydrocarbons or hazardous substances are expected. However, in the event that such an incident does occur, the contractor should carefully follow the following TCEQ guidelines:

Cleanup:

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

Minor Spills:

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

Semi-Significant Spills:

Semi-significant spills can still be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately, using the following practices:

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

Significant/Hazardous Spills:

Summarized in the table below are Reportable Quantity threshold numbers for certain kind of spills.

REPORTABLE QUANTITY THRESHOLD	
Kind of Spill	RQ
Hazardous substance	Onto land – "Final RQ" in Table 302.4 Into water – "Final RQ" or 100 lbs, whichever is less
Any oil	Coastal waters – as required by the Texas General Land Office
Crude oil	210 gallons
Petroleum product	Onto land from an exempt PST facility – 210 gallons Onto land from a non-exempt PST facility – 25 gallons Directly into water – enough to create a sheen
Production of oil, gas, or geothermal	As required by the Railroad Commission of Texas
Industrial solid wastes or other substances	Into water – 100 lbs
Petroleum storage tanks, aboveground or underground	Into water – enough to create a sheen on water Onto land – 25 gallons
Substances causing pollution	Into water – 100 lbs

Only certified Haz-Mat teams will be responsible for handling the material at the site.

For significant or hazardous spills that are in reportable quantities:

1. Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site. Additionally, in the event of a hazardous material spill, local Williamson County and/or city of Liberty Hill police, fire, and potentially EMS should be contacted in order to initiate the hazardous material response team.
2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 191, and 302, the contractor should notify the National Response Center at (800) 424-8802.
3. Notification should first be made by telephone and followed up with a written report of which one copy is to be kept on-site in the report binder and one copy is to be provided to the TCEQ.

4. The services of a spill contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sherriff's Office, Fire Department, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tceq.state.tx.us/response/spills.html

Attachment B – Potential Sources of Contamination

No particular activity or process during construction of the project is anticipated to present a significant risk of being a potential source of contamination. However, during regular construction operations, several common and minor risks of contamination are anticipated. Should any unforeseen mishaps occur during construction, the contractor shall follow the guidelines set forth in "Attachment A – Spill Response Plan".

Potential sources of sediment to stormwater runoff:

- Clearing and grubbing
- Grading and excavation
- Vehicle tracking
- Topsoil stripping and stockpiling
- Landscaping

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Combined Staging Area – small fueling, minor equipment maintenance, sanitary facility.
- Materials Storage Area – solvents, adhesives, paving materials, aggregates, trash, etc.
- Construction Activities – paving, concrete pouring
- Concrete washout areas

Potential on-site pollutants:

- Fertilizer
- Concrete
- Glue, adhesives
- Gasoline, diesel fuel, hydraulic fluids, antifreeze
- Sanitary toilets

Attachment C – Sequence of Major Activities

1. Temporary erosion and sedimentation controls are the to be installed as indicated on the approved subdivision construction plans and in accordance with the stormwater pollution prevention plan (SWPPP) that is required to be posted on the site. Install tree protection and initiate tree mitigation measures.

2. The environmental project manager, and/or site supervisor, and/or designated responsible party, and the general contractor will follow the storm water pollution prevention plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with city inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion and sedimentation plan.

3. Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the storm water pollution prevention plan (SWPPP) posted on the site.

4. A sequence of major construction activities is listed below:

    I. Clearing and grubbing
    II. Grading and excavation for roadway
    III. Excavation for utilities
    IV. Construction of utilities
    V. Re-vegetation

5. Upon completion of construction and re-vegetation, the design engineer shall submit an engineer's letter of concurrence to the City of Dripping Springs indicating that construction, including re-vegetation, is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate city inspector.

6. After construction is complete and all disturbed areas have been re-vegetated per plan to at least 90 percent established, remove the temporary erosion and sedimentation controls and complete any necessary final re-vegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the permanent BMPs.

Attachment D – Temporary Best Management Practices and Measures

Prior to the commencement of any construction activity, the contractor shall install construction entrances, silt fence, tree protection, and concrete washout areas, per the Erosion and Sedimentation Control Plan. All temporary BMPs are to be installed per TCEQ and local requirements.

As surface water flows from and through disturbed areas, the proposed temporary BMPs will prevent pollution by filtering the increased sediment loads and other pollutant sources (listed in "Attachment B – Potential Sources of Contamination") prior to any runoff leaving the site. As shown in the attached site plan, silt fence will be utilized primarily along the border of the site to remove debris and sediment from construction activities in the area (activities here will primarily involve road grading and utility excavation).

In using the aforementioned treatment methods and maintaining natural drainage patterns downgradient of the proposed site, any flow to naturally occurring sensitive features, both known and unknown, will be maintained.

Attachment F – Structural Practices

The following temporary BMP structural practices will be employed on the site:

A. Silt Fence – Used for sediment filtration along the downslope perimeter of portions of the project, as well as to prevent runoff from storage of excavated materials during utility construction. The fence retains sediment primarily by retarding flow and promoting deposition of sediment on the uphill side of the slope. Runoff is filtered as it passes through the geotextile.

B. Construction Entrance – Stone pads will be constructed at entrances and exits to the project to prevent off-site transport of sediment by construction vehicles. The pads are a minimum of 50’ long and 8” deep. They will be graded to prevent runoff from leaving the site.

C. Concrete Washout Area – A washout area for concrete trucks will be provided onsite to prevent the discharge of pollutants to stormwater from offsite washouts. The concrete washout area will be constructed below grade and with a plastic lining material to retain discharge and prevent spills.

Attachment I – Inspection and Maintenance for BMPs

The inspection and maintenance of temporary BMPs will be made according to TCEQ RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.

Inspection Personnel:

Inspections shall be conducted by qualified representatives of the contractor acting on behalf of the owner or a designated party, if hired separately by the owner. Each operator must delegate authority to the specifically described position or person performing inspections, as provided by 30 TAC 305.128, as an authorized person for signing reports and performing certain activities requested by the director or required by the TPDES general permit. This delegation of authority must be provided to the director of TCEQ in writing and a copy shall be kept along with the signed effective copy of the SWPPP.

Inspection Schedule and Procedures:

An inspection shall occur weekly and after any rain event.

The authorized party shall inspect all disturbed areas of the site, areas used for storage of materials that exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.

Disturbed areas and areas used for storage of materials that are exposed to precipitation or within limits of the 1% annual chance (100 year) floodplain must be inspected for evidence of, or the potential for, pollutants entering the runoff from the site. Erosion and sediment control measures identified in the plan must be observed to ensure that they are operating correctly. Observations can be made during wet or dry weather conditions. Where discharge locations or points are accessible, they must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. This can be done by inspecting receiving waters to see where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

Based on the results of the inspection, the site description and the pollution prevention measures identified in the plan must be revised as soon as possible after an inspection that reveals inadequacies. The inspection and plan review process must provide for timely implementation of any changes to the plan within 7 calendar days of the inspection.

An inspection report shall be completed, which summarizes the scope of the inspection, name(s) and qualifications of personnel conducting the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP. Major observations shall include, as a minimum, location of discharges of sediment or other pollutants from the site, location of BMPs that need to be maintained, location of BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where BMPs are needed.

Actions taken as a result of the inspections must be described within, and retained as a part of, the SWPPP. 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 SWPPP and the TPDES general permit. The report must be signed by the authorized representative delegated by the operators in accordance with TAC 305.128.

Maintenance and Corrective Actions – Maintenance of erosion control facilities shall consist of the minimum requirements as follows:

A. In ongoing construction areas inspect erosion control improvements to confirm facilities are in place and operable. Where facilities have been temporarily set aside or damaged due to construction activity, place facilities in service before leaving job site.

B. If weather forecast predicts possibility of rain, check entire facilities throughout site to ensure that they are in place and operable. If job site weather conditions indicate high probability of rain, make special inspection of erosion control facilities.

C. After rainfall events, review erosion control facilities as soon as site is accessible. Clean rock berms, construction entrances, and other structural facilities. Determine where additional facilities or alternative techniques are needed to control sediment leaving site.

D. After portions of site have been seeded, review these areas on regular basis in accordance with project specifications to assure proper watering until grass is established. Re-seed areas where grass is not well-established.

E. Spills are to be handled as specified by the manufacturer of the product in a timely and safe manner by qualified personnel. The site superintendent will be responsible for coordinating spill prevention and cleanup operations.

F. Concrete trucks will discharge extra concrete or wash out drum only at an approved location on site. Residual product shall be properly disposed of.

G. Inspect vehicle entrance and exits for evidence of off-site tracking and correct as needed.

H. Remove sediment from traps/ponds no later than when the design capacity has been reduced by 50%. Remove sediment from silt fence/rock berms when sediment has accumulated more than 6” up the BMP.

I. If sediment escapes the site, the contractor, where feasible and where access is available, shall collect and remove sedimentation material by appropriate non-damaging methods. Additionally, the contractor shall correct the condition causing discharges.

J. If inspections or other information sources reveal a control has been used incorrectly, or that control is performing inadequately, the contractor must replace, correct, or modify the control as soon as practical after discovery of the deficiency.

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

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

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

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

Inspector's Name _____ Inspector's Signature _____ Date _____

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date
Installation of BMPs	

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

Construction Activity	Date

Dates when stabilization measures are initiated:

Stabilization Activity	Date
Removal of BMPs	

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

The schedule of interim and permanent soil stabilization practices will be according to: Federal Register / Vol. 63, No. 31 (February 17, 1998).

Prior to Disturbance – Install all temporary erosion and sedimentation control features.

During Construction – Maintain all temporary erosion and sedimentation control structures. Inspect all temporary erosion and sedimentation control structures on a weekly basis and after rain events.

After Completion of Permanent Erosion and Sediment Controls – Stabilize and restore all areas disturbed during construction. Permanent seeding will be applied immediately after the final design grades are achieved on portions of the site but no later than 14 days after construction activities have permanently ceased. After the entire site is stabilized, any sediment that has accumulated will be removed and hauled off-site for disposal. Construction debris, trash, and temporary BMPs will also be removed and any areas disturbed during removal will be seeded immediately.

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

I Robert E. Fondren ,
Print Name

Manager ,
Title - Owner/President/Other

of Double L Development, LLC ,
Corporation/Partnership/Entity Name

have authorized Stacy Mulholland, P.E.
Print Name of Agent/Engineer

of BGE, 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

09/25/25
Date

THE STATE OF TEXAS §

County of HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Robert E. Fondrenknown 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 25thday of September, 2025

NOTARY PUBLIC

FRANCES K. ARD
My Notary ID # 4169161
Expires April 14, 2026

Frances K. Ard
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: April 14, 2026

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Double L Ranch Reclaimed Water Production Facility
Regulated Entity Location: 2.0 miles due North from the intersection of US 290 and Ranch Rd 12
Name of Customer: Double L Development, LLC
Contact Person: Robert E. Fondren Phone: (713) 623-2466
Customer Reference Number (if issued):CN ---
Regulated Entity Reference Number (if issued):RN ---
Austin Regional Office (3373)

☒ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ 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	7.406 Acres	$ 5,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 09/25/25

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

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

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

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

☐ Other

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 6060513		**RN**

SECTION II: Customer Information

4. General Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

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

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

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

If new Customer, enter previous Customer below:

Double L Development, 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)*
0802983550	32066782940	82-5526408	

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: LLC

12. Number of Employees

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

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

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

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

15. Mailing Address:	1600 West Loop South, Suite 2600						
	City	Houston	**State**	TX	**ZIP**	77027	**ZIP + 4**	3051

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(713) 623-2466		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Double L Ranch Reclaimed Water Production Facility

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

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

25. Description to Physical Location:	1.5 miles North of US 290 and Ranch Rd 12				
26. Nearest City			**State**	**Nearest ZIP Code**	
Dripping Springs			TX	78620	

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

27. Latitude (N) In Decimal:	30.22050446		**28. Longitude (W) In Decimal:**	-98.07264184	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	13	13.82N	98	4	21.51W

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1521	1611	236115	237210

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

Reclaimed Water Production Facility

34. Mailing Address:	**1600 West Loop South, Suite 2600**						
	City	**Houston**	**State**	**TX**	**ZIP**	**77027**	**ZIP + 4**	**3051**
35. E-Mail Address:							

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

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

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

SECTION IV: Preparer Information

40. Name:	Stacy Mulholland	**41. Title:**	Senior Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210 **)** 581-3637		**( )** -	smulholland@bgeinc.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:	BGE, Inc.	**Job Title:**	Senior Project Manager
Name *(In Print):*	Stacy Mulholland	**Phone:**	**(** 210 **)** 581- **3637**
Signature:		**Date:**	9/26/2025

AMENDED AND RESTATED DEVELOPMENT AGREEMENT FOR ANARENE INVESTMENTS TRACT

STATE OF TEXAS §
§
COUNTY OF HAYS §

This Amended and Restated Development Agreement (the "Agreement") is between the City of Dripping Springs, (the "City"); ANARENE INVESTMENTS, LTD, a Texas limited partnership ("Anarene" or "Owner"); DOUBLE L DEVELOPMENT, LLC, a Texas limited liability company, as successor in interest to ANARENE INVESTMENTS, LTD, a Texas limited partnership ("Developer" or "Owner"); LL RANCH INVESTMENTS, LP, a Texas limited partnership ("LL Ranch" or "Owner"); Melinda Hill Perrin ("Perrin" or "Owner"); and John Graham Hill ("Hill" or "Owner") (LL Ranch, Anarene, Perrin and Hill are sometimes collectively referred to as the "Landowners"). In this Agreement, the City and Owner are sometimes individually referred to as a "Party," and collectively referred to as the "Parties".

RECITALS:

WHEREAS, Anarene and the City entered into that certain Development Agreement effective as of October 17, 2012 (the "Original Agreement"), which was recorded in Volume 4466, Page 327 of the Official Public Records of Hays County, Texas; and

WHEREAS, the City and Anarene entered into an Amended and Restated Development Agreement for Anarene Investments Tract (the "Development Agreement") effective August 13, 2015; and

WHEREAS, Anarene assigned its rights, title and interest in the Development Agreement to the Developer pursuant to that Assignment and Assumption Agreement effective September 25, 2019; and

WHEREAS, the Landowners own a portion of the Land that is subject to the Development Agreement and agree to subject the Land to the terms and conditions of the Development Agreement; and

WHEREAS, the Parties now wish to amend and restate the Development Agreement; and

WHEREAS, the City is authorized to enter into this Agreement pursuant to Section 212.172 of the Texas Local Government Code, and the City and Owners are proceeding in reliance on the enforceability of this Agreement;

NOW, THEREFORE, for a good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the Parties hereto, the City, Developer, and Landowners hereby agree as follows:

ARTICLE 1. DEFINITIONS

1.1 Act: House Bill 4183 of the 84th Legislature, Regular Session, codified as Chapter 7916 of the Texas Special District Local Laws Code.

1.2 Agreement: This contract between the City of Dripping Springs, Texas and Owners, including exhibits.

1.3 Applicable Rules: The City Rules, as defined herein will be applicable to the development of the Land for the term of this Agreement. This term does not include applicable Zoning, Building Codes, Landscaping, Lighting, Sign, or Exterior Design standards, as those ordinances may apply or hereafter be applied to residential and nonresidential properties. This term does not include regulations mandated by state law, or that are necessary to prevent imminent harm to human safety or property, which may be modified and made applicable to the Project even after the Effective Date.

1.4 City: The City of Dripping Springs, an incorporated Type A, general-law municipality located in Hays County, Texas.

1.5 City Council: The governing body of the City of Dripping Springs, Texas.

1.6 City Engineer: The person or firm designated by the City Council as the engineer for the City of Dripping Springs, Texas.

1.7 City Rules: Ordinance No. 2019-29 (Subdivision Ordinance), Lighting Ordinance as it may be amended from time to time and except as modified herein; Ordinance No. 3500.11(Water Quality Protection), Ordinance No. 2020-12 (Sign Ordinance), Ordinance No. 2019-39 (Dripping Springs Technical Criteria), the ordinances in effect as of the Effective Date identified on **Exhibit J,** all as modified by Project Approvals and variances granted concurrent with this Agreement including the variances listed in **Exhibit E**.

1.8 County: Hays County, Texas.

1.9 District or Districts: Any conservation and reclamation district(s) authorized pursuant to Texas Constitution Article III, Section 52 and Article XVI Section 59, including Hays County Municipal Utility District No. 7, that includes the Land or portions thereof and any subsequent district or districts that may be created by division of such district or districts.

1.10 Dripping Springs Technical Criteria: The criteria adopted in Article 28.07 of the City of Dripping Springs Code of Ordinances that includes technical criteria standard specifications and adopted in Ordinance 2019-39 and as modified by this Agreement including the variances in **Exhibit E**.

1.11 Effective Date: October 17, 2012.

1.12 Homeowners Association (HOA): is an organization created by a real estate developer for the purpose of controlling the appearance and managing any common-area assets during the marketing, managing, and selling of homes and sites in a residential subdivision. It grants the developer privileged voting rights in governing the association, while allowing the developer to exit financial and legal responsibility of the organization, typically by transferring ownership of the association to the homeowners after selling off a predetermined number of lots.

1.13 Impervious Cover Percentage: The percentage calculated by dividing the total acres of impervious cover on the Land by the total number of acres included in the Land.

1.14 Impervious Cover: As defined by the TCEQ, currently 30 Texas Administrative Code 213.3 (17) and as defined in the Dripping Springs Code of Ordinances Section 22.05.016(c) except swimming pools shall not be considered as impervious cover if they comply with freeboard requirements to capture the water quality volume for the surface area as required by the TCEQ. For residential tracts, Single Family Lot Impervious Cover Assumptions, as set forth in **Exhibit H**, shall be utilized to determine impervious cover on residential lots.

1.15 Land: Approximately 1675.094 acres of land, in Hays County, Texas, more fully described on **Exhibit A**, attached, and the approximately 2.066 acres described in **Exhibit A-1** in the event such land is acquired by one or more Owners.

1.16 Living Unit Equivalent (LUE): A single unit of service consists of the typical flow that would be produced by a single-family residence located in a typical subdivision served by the City.

1.17 Master Plan: The master plan of the City, originally presented in 1984, as may be amended, modified or supplemented by the City, in conjunction with the Comprehensive Plan.

1.18 Maximum Impervious Cover: The maximum impervious cover per residential lot shall be in accordance with **Exhibit I**.

1.19 Owner: One or more Owner listed above and any subsequent Owner, as assigned.

1.20 Phase 1 Road: The four-lane arterial, which will include a five-foot sidewalk, and shared-use path (8' or 10' depending on width of connecting path), as shown generally by red dashed line on **Exhibit G-1** within the area outlined in blue on **Exhibit G-1**.

1.21 Phase 2 Road: (i) The four-lane arterial, which will include a five-foot sidewalk, and shared-use path, 10' width , as shown generally by teal dashed line on **Exhibit G-1**, and (ii) the two-lane roadway extension to the boundaries of Cynosure (also known as "Wild Ridge"), as shown generally by green dashed line on **Exhibit G-1**, and to Big Sky Ranch, as shown generally by brown dashed line on the **Exhibit G-1**, all within the area outlined in yellow on **Exhibit G-1**.

1.22 Phase 3 Road: An additional two-lane expansion to the Phase 2 Road two-lane road to the boundary of Cynosure ("Wild Ridge"), as shown generally by purple dashed line on **Exhibit G-1** within the area outlined in orange on **Exhibit G-1**.

1.23 Project: The term as defined by Texas Local Government Code Chapter 245, as may be amended. The term refers to a specific property use and/or improvement undertaken on the Land, as documented in a manner that provides the City with fair notice.

1.24 Project Approvals: All aspects of the Project outside the current scope of work will require prior approval by the City Council.

1.25 Parkland: Parkland is a platted tract of land designated and used for recreation or open space.

1.26 Shared Use Path: a multi-use path (10') to be constructed within the Phase 1 Road and Phase 2 Road right of way.

1.27 Single Family Lot Impervious Cover Assumptions: As stated in **Exhibit H**.

1.28 TCEQ: Texas Commission on Environmental Quality, or its successor agencies.

1.29 TxDOT: Texas Department of Transportation, or its successor agencies.

1.30 WTCPUA: West Travis County Public Utility Authority, or its successor agencies.

ARTICLE 2. PUBLIC BENEFITS, INFRASTRUCTURE & AMENITIES

2.1 Purpose: The development of the Land under this Agreement is intended to: (a) allow housing and commercial development within the City's ETJ to occur in an orderly manner in order to protect the health, safety and welfare of the City's present and future citizens; (b) promote the aesthetic enhancement of the City and its ETJ; and (c) promote a safe and attractive self-sustaining community.

2.2 Environmental Protection: Developer will implement compliance with the following natural resource laws and regulations, to the extent applicable:

2.2.1 Aquifer Protection: Developer will comply with all applicable TCEQ regulations. Developer shall also take reasonable measures to protect the Trinity Aquifer, including at a minimum adherence to the Edwards Aquifer Rules for the Contributing Zone. If the development is a low-density development (less than fifteen (15%) Impervious Cover), no structural water quality controls will be required.

2.2.2 Land Application Restrictions: If the Project utilizes individual onsite sewage disposal and if treated sewage effluent is disposed of through irrigation, property owners within the Project shall comply with the applicable City, County, and TCEQ permit for the lot or lots that are utilizing individual onsite sewage disposal. The City reserves the right to comment on any permit application submitted by an Owner.

2.2.3 Waterway Protection: Developer shall obtain authorization from and comply with applicable rules and regulations established by federal, state, and local governmental entities regarding waterway protection.

2.2.4 Stormwater Controls: Developer will prepare and implement a stormwater pollution prevention plan in compliance with the TCEQ's Texas Pollution Discharge Elimination System stormwater general permit for construction-related stormwater discharges. Owner will comply with the applicable Water Quality Controls as outlined in 2.2.8.

2.2.5 Endangered Species: Developer agrees to comply with the federal Endangered Species Act. City agrees that the TCEQ optional enhanced measures Appendix A and Appendix B to RG-348 are an approved regional plan acceptable to the United States Fish and Wildlife Service ("USFWS"). The City and Developer agree that by Developer complying with the TCEQ enhanced measures under RG-348, Developer is also in compliance with WTCPUA rules and policies related to the Endangered Species Act.

2.2.6 Water Conservation Plan: Developer shall comply with the current City plan, which has been approved by the WTCPUA.

2.2.7 Application Submittal: Developer shall submit all permit applications required under Section 2.2 to the City prior to applying to the relevant authority.

2.2.8 Water Quality Controls: Water quality best management practices ("BMPs") will be designed to meet those established by TCEQ publication RG 348, Appendix A.

2.3 Parkland: In addition to the 25.7 acres previously donated to the City of Dripping Springs (25.7 acres parkland), an additional 345.0 acres of Parkland will be provided out of the approximately 474 acres of open space, with 80.76 acres being within the floodplain, reflected on the Concept Plan, **Exhibit D**, and the Master Plan for Parkland for the Land, **Exhibit B**. This dedication shall fulfill all parkland dedication requirements on the Project, including but not limited to the requirements of Article 28.03 (Parkland Dedication) of the City's Code of Ordinances in effect as of the Effective Date of the Original Agreement, and no further dedication or payment will be required related to Parkland Dedication Fees other than that listed in this Agreement. Parkland will be dedicated in accordance with Section 28.03.006 of the Dripping Springs Code of Ordinances in effect as of the Effective Date of the Original Agreement and the attached **Exhibit B** Master Plan for Parkland for the Land.

At the discretion of Developer, portions may be dedicated to the City, with the City's acceptance and approval, the County, a homeowner's association, or the District. Developer shall not be required to submit park plans for each phase of development to the City's Parks and Recreation Commission if Developer develops Parkland in accordance with the attached **Exhibit B**.

2.4 Trails and Accessibility: Developer agrees to work with the City to establish and locate mutually acceptable trail systems within the Land. Developer intends to construct a pervious maintenance road adjacent to certain detention and drainage facilities, which may serve the dual purpose of (i) providing access to, and the ability to maintain, detention and drainage facilities, and (ii) providing a public trail through the Project, as shown on **Exhibit B** attached hereto as the "Public Trail Through Double L" (the "Trail"). The Trail will meet TCEQ standards for construction within a buffer zone and the District's standards for access and maintenance of its drainage and detention facilities. The City may further improve the Trail, subject to a separate written agreement with the District. The Developer agrees to work with the City to allow the City to construct public trail connections extending from the Trail to Dripping Springs Ranch Park and Rathgeber Natural Resource Park. The Developer agrees to pay Park Development Fees in the amount of $648 per residential unit for senior living multi-family and for residential lots of 40' wide or smaller (the "Garden Home Product"). The Developer further agrees to pay Park Development Fees in the amount of $648 per single-family residential unit (excluding Garden Home Product) that results in the number of platted single-family lots (excluding the Garden Home Product) within the Project exceeding 1,710 single-family residential units ("Additional Lots"). Provided, however, the City agrees to offset the amount of Park Development Fees otherwise owed under this Section 2.4 for Additional Lots by (i) the costs incurred by the Developer to construct the Trail or other trail facilities open to the general public except for the Shared Use Path, and (ii) the dollar amount of any private contribution by Owner for any grant application for parks. Park Development Fees for senior living multi-family, Garden Home Product and the Additional Lots shall be due and payable, in phases, to the City at the time such senior living multi-family, Garden Home Product and Additional Lots are platted or at the time of final platting of a phase of development that includes senior living multi-family, Garden Home Product and Additional Lots, whichever comes first, based on the number of senior living multi-family, Garden Home Product and Additional Lots included in the plat.

2.5 Hilltop Preservation: Developer shall preserve each of the six (6) hilltops as depicted in **Exhibit C** attached hereto and incorporated herein for all purposes. Building heights on such hills shall be limited to twenty (20) feet greater than the top of the corresponding hilltop; Developer will dedicate land for one water storage tank which may be located on one of the hilltops. Provided, however, nothing in this Section 2.5 will prevent Developer from conveyance of land for, or construction of water storage tanks on any of the four (4) hills, if required by the WTCPUA. Developer will endeavor to have the color of such tanks blend into the natural settings, however, the parties acknowledge that the color of such tanks may ultimately be determined by the WTCPUA.

2.6 Lighting: Developer, or an electric utility designated by Developer, will construct all illumination for street lighting, signage, security, exterior landscaping, and decorative facilities for the Project in accordance with the City Rules, including the Lighting Ordinance then in effect; provided however, the City agrees that the applicable lighting rules and regulations shall be no less favorable than those applicable to any other similarly situated development within the City's boundaries or its ETJ. Notwithstanding the foregoing, construction of street lighting shall be vested under the rules and regulations set forth in the Lighting Ordinance in effect at the time of execution of this Agreement unless otherwise agreed to, in whole or in part, by the Developer. District(s) will be required to operate and maintain the lighting within its boundaries according to City Rules. Owners agree that all restrictive covenants for the Project shall reinforce this provision and be applied to all construction and builders.

2.7 Landscaping: Developer shall comply with the City's Landscaping Ordinance (Ordinance No. 6300.10) in effect as of the Effective Date, as amended by this Agreement, in all commercial areas. Residential areas shall only be required to comply with the tree plan set forth in Exhibit L; provided, however, existing trees on an individual lot of at least three caliper inches may be used to satisfy the tree requirements set forth therein. Landscape design and vegetation along arterial roadways, will be a combination of native shade trees and ornamental trees along with clusters of native or adaptive shrubs and grasses at regular intervals along or within the right of way. Developer agrees that the use of native species of plant materials will be utilized throughout the Project attached as **Exhibit F**. Turf grasses on any lot within the Project shall be limited to Zoysia, Buffalo or Bermuda grasses. Other grasses may be approved by the City Administrator for lots utilizing drip irrigation systems. In no event may St. Augustine grass be used. The plant list attached as **Exhibit F** is approved.

2.8 Exterior Design & Architectural Standards: Within the commercial area, Developer shall comply with the City's Exterior Design & Architectural Standards Ordinance, as may be amended.

ARTICLE 3. PROPERTY DEVELOPMENT

3.1 Governing Regulations: For purposes of any vesting analysis, the Parties agree that the Effective Date shall be construed as the date upon which the Original Agreement was approved by the City Council of Dripping Springs. The Applicable Rules shall govern the Project, unless otherwise expressly provided for in this Agreement. For the term of this Agreement, the development and use of the Land will be controlled by the terms of this Agreement, the Project Approvals, and the Applicable Rules. If there is any conflict with the terms of this Agreement and the Applicable Rules, the terms of this Agreement will control. If there is a conflict between the terms regarding construction of water and wastewater facilities under this Agreement and the Agreement for the Provisions of Nonstandard Wholesale and Retail Water Service, as amended, and the Wastewater Utility Service and Fee Agreement, as amended (collectively, the "Utility Agreements"), the terms regarding construction of water and wastewater facilities under the Utility Agreements shall

control if there is an unavoidable conflict in terms that cannot be resolved by harmonizing the intent of this Agreement and the Utility Agreements. Notwithstanding anything contained herein to the contrary, the variances described on **Exhibit E** to the Development Agreement are approved.

3.1.1 Residential Density: (a) The maximum number of single-family residential dwelling units that may be developed on the Land shall be 2,231 single-family units with lot allowances as set forth in Exhibit N, provided, however, there shall be a maximum of 73 thirty-five (35') lots, 96 forty (40') lots, and 110 forty-five (45') lots and (b) the maximum number of senior living multi-family units shall be 250 units.

3.1.1.1 Residential Lot Size: The minimum size for any lot shall be 3,500 square feet. See **Exhibit K** for all lot sizes.

3.1.2 Water Service: The Land shall be entitled to receive water service in accordance with the Agreement for the Provision of Nonstandard Wholesale and Retail Water Service between the City and Double L Development, LLC (the "Water Service Agreement"), in an amount not to exceed 3,393 Living Unit Equivalents ("LUEs"). The Parties agree water service may be provided by a third-party utility provider, including, but not limited to, a special purpose district. Any area that is not provided water service by the West Travis County Public Utility Agency ("PUA") shall not be subject to the memorandum of understanding between USFWS and LCRA, as predecessor to the PUA ("MOU"), or the PUA Service and Development Policies related to compliance with the MOU. The Water Service Agreement is hereby modified to increase the LUEs available to serve the Land to 3,393 LUEs.

3.1.2.1 Service Extension Request. The City agrees to submit a service extension request ("SER") to the PUA for reservation of an additional 1,683 LUEs for the Land within thirty (30) days of the Developer submitting the request to the City. Such 1,683 LUEs will be in addition to the 1,710 LUEs previously approved by the PUA that is reserved to serve the Land.

3.1.3 Wastewater Service: The Land shall be entitled to receive wastewater service in accordance with the Wastewater Utility Service and Fee Agreement between the City and Double L Development, LLC (the "Wastewater Agreement"), in an amount not to exceed 3,393 LUEs. The Parties agree wastewater service may be provided by a third-party utility provider, including, but not limited to, a special purpose district. The Wastewater Service Agreement is hereby modified to increase the LUEs available to serve the Land to 3,393 LUEs.

3.1.3.1 Reuse Water. The City agrees to approve and execute an Application for Reclaimed Water Production Authorization under 30 TAC Chapter 321 (the "321 Application"), within 10 days of receipt of a completed 321 Application from the Developer, or its representatives, for an amount up to half of the permitted rated

capacity of the City's wastewater treatment plant. The District will be entitled to all reuse water from the 321 plant to serve the Land.

3.1.4 Impervious Cover: Developer may develop the Project with an Impervious Cover Percentage that does not exceed thirty-five percent (35%) over the entire Project. Developer shall have the right to apportion impervious cover limits on a lot by lot or use by use basis not to exceed the applicable maximum impervious cover percentage shown in **Exhibit I** on each residential lot, and for the commercial portion of the Project as set forth in Section 3.1.4.1. Developer may apportion such limits as it deems desirable so long as the overall limitation herein specified is not exceeded. Developer may count in density and impervious cover calculations the gross area of the Land, including but not limited to, land designated as greenbelt, open space, mitigation or similar designation.

3.1.4.1 Nonresidential Impervious Cover: Commercial and multifamily impervious cover may reach a maximum of seventy percent (70%) of any given commercial or multifamily tract, provided that the maximum impervious cover for the Land does not exceed thirty-five percent (35%) of the gross area of the Land.

3.1.5 Water Quality Buffer Zones: Development on the Land shall comply with the stream buffers as required per the TCEQ Optional Enhanced Measures (OEM). These buffers will govern over the City of Dripping Springs Water Quality Buffers.

3.2 Project Approvals & Entitlements:

3.2.1 Concept Plan: The City confirms that the Concept Plan and Roadway Connectivity Plan attached as **Exhibit D** and **Exhibit G**, respectively, comply with the City's Comprehensive Plan, and that the Concept Plan has been approved by all requisite City departments, boards, and commissions and by the City Council. The City approves the land uses, densities, and reservations of land for public purposes on the Concept Plan. The City's execution of this Agreement shall be deemed to be the approval of the Concept Plan and Roadway Connectivity Plan, as shown on **Exhibit D** and **Exhibit G**, respectively, on which land uses, densities, and reservations of land for public purposes during development of the Land will be based. Notwithstanding the above, there must be a fifty (50) foot separation between commercial and residential development, measured from vertical building improvements.

3.2.1.1 Buffer Areas: For residential lots within the Project that are adjacent to the following subdivisions, there shall be minimum open space buffers, with allowance for above ground drainage facilities to protect adjacent property and control stormwater run-off, as follows:

Legacy Trails: 45 feet
Founders Ridge: 35 feet

Springlake Estates: 25 feet
Shelton Ranch Road: 25 feet

The above-referenced buffers shall be owned and maintained by the District and/or a homeowners association. The buffer areas, including for lots adjacent to Founders Ridge, Springlake Estates, Shelton Ranch Road, and Legacy Trails, are shown generally on **Exhibit M**.

3.2.2 Phasing of Development: The calculation of impervious cover, lot averaging, and similar requirements shall be determined and calculated on a whole project basis. An impervious cover exhibit shall be submitted concurrently with each plat filed indicating the amount of proposed impervious cover; the amount associated with prior platted areas and the amount associated with the area subject to such plat, all as set forth in **Exhibit H**. The chart shall also show the average lot size computation for the Land as a whole and resulting from the plat and prior platted areas. Any portion of the Land may be re-platted to change the use or designation of that previously platted portion so long as the entire platted portion of the Land meets the requirements of this Agreement, including impervious cover, lot averaging and similar requirements herein. So long as this Agreement remains in effect, such re-platting shall be deemed controlled by this Agreement as if the same were an original platting of such re-platted portions.

3.2.3 Project Approvals: The Project Approvals and variances set forth in **Exhibit E** and the Concept Plan attached to this Agreement as **Exhibit D** have been approved by all required City boards and commissions and the City Council and are granted by the City with respect to the development of the Land.

Since the project comprises a significant land area and its development may occur in phases over several years, modifications to the Concept Plan may become necessary due to changes in market conditions or other factors.

In order to provide flexibility with respect to certain details of the development of the Project, Owner may seek changes in the location and configuration of the residential, commercial, and parkland areas shown on the Concept Plan. Such changes will only require an administrative amendment to the Concept Plan so long as the Impervious Cover requirements herein are met, there are no reductions in lot sizes or increases in the overall density of the Project, and no net reduction in required Parkland for the Project. The City Administrator or designee shall be responsible for consideration and approval of such administrative amendments to the Concept Plan. The City Administrator may defer such approval to the City Council at their discretion, except that any decrease in residential lot sizes adjacent to a neighboring subdivision shall not be a minor amendment and must be brought before City Council for review and action. All the variations from the Concept Plan not deemed minor shall require a Concept Plan amendment approved by the City Council.

3.2.4 Signage: Developer will submit a Master Signage Plan for approval by City Council prior to construction of any signage structure or sign within the project. All signage will comply with the Sign Ordinance except as modified by this Agreement or the approved Master Signage Plan.

3.3 Further Approvals: Upon the Effective Date of this Agreement, Developer may develop the Land consistent with this Agreement. Any future approvals granted in writing by the City for such development will become a part of the Project Approvals.

3.4 Standard for Review: The City's review and approval of any submissions by Developer will not be unreasonably withheld or delayed. The City will review any plans, plat or other filing by Developer in accordance with the applicable City's ordinances, state law and this Agreement. If any submittal is not approved, the City will provide written comments to Developer specifying in detail all of the changes that will be required for the approval of the submittal.

3.5 Approvals & Appeals: The City acknowledges that timely City reviews are necessary for the effective implementation of Developer's development program. Therefore, the City agrees that it will comply with all statutory and internal City time frames for development reviews. The City further agrees that if, at any time, Developer believes that an impasse has been reached with the City staff on any development issue affecting the Project or if Developer wishes to appeal any decision of the City staff regarding the Project; then Developer may promptly appeal in writing to the City Council requesting a resolution of the impasse at the next scheduled City Council meeting, subject to compliance with all timetables required by the open meeting laws.

3.6 Concept Plan Amendments:

3.6.1 Due to the fact that the Project comprises a significant land area and its development will occur in phases over a number of years, modifications to the Concept Plan may become necessary due to changes in market conditions or other factors. In order to provide flexibility with respect to certain details of the development of the Project, Developer may seek changes in the location and configuration of the residential and/or commercial use lots shown on the Concept Plan, including changes within the proposed residential, commercial, or open space areas shown on the Concept Plan. Such changes will only require an administrative amendment to the Concept Plan so long as the Impervious Cover limitations are met and there are no increases to the residential or commercial density of the Land or adverse impacts to traffic, utilities, stormwater discharges, or water quality.

3.6.2 The City Administrator shall be responsible for consideration and approval of such administrative amendments to the Concept Plan. The City Administrator may defer such approval to the Planning and Zoning Commission and the City Council at the City Administrator's discretion. Further, minor changes that may impact traffic, utilities and stormwater discharges, and water quality, that are proposed for the

Concept Plan that do not result in an increase in the overall density of development of the Land and which otherwise comply with the Applicable Rules and this Agreement may be approved by the City Administrator. Similarly, minor variations of a preliminary plat or final plat from the Concept Plan that are approved by the City Administrator that do not increase the overall density of development of the Land or increase the overall Impervious Cover limit of thirty-five percent (35%), and which otherwise comply with the Applicable Rules, and this Agreement will not require an amendment to the Concept Plan.

3.7 Term of Approvals: The Concept Plan and any preliminary plat or final plat approved pursuant to this Agreement will be effective for the longer of (i) the term of this Agreement unless otherwise agreed by the Parties or (ii) the term contained in the applicable subdivision ordinance.

3.8 Extension of Permits & Approvals: Any permit or approval under this Agreement shall be extended for any period during which performance by any Owner is extended or delayed but in no instance shall any permits or approvals be extended beyond the term of this Agreement.

3.9 Initial Brush Removal: Developer may mechanically remove brush with practices to include uprooting or stump grinding without materially disrupting soil surface prior to receiving approval of a plat(s) for that portion of the Land in order to determine the location of roads, lots, utilities and drainage areas with regard to preservation of environmental features. This Section 3.9 will not prevent Developer from removing brush in accordance with any federal programs, including the United States Department of Agriculture Natural Resources Conservation Service's Environmental Quality Incentives Program. Owner shall not use burning as a method of removal of brush for clearing purposes for residential development; provided, however, burning may be used for removal of brush in connection with agricultural and wildlife practices.

3.10 Building Code: Developer agrees that all habitable buildings shall be constructed in accordance with all building or construction codes that have been adopted by the City. Fees for all building permits or building inspections by the City or the City's designee under this section shall be paid by builders. Building permit and building inspection fees are not included among the fees specifically listed in this Agreement. Regardless of this development's location in the extraterritorial jurisdiction, building permits are required for all structures.

3.11 Fiscal Security for Public Improvements: All public improvements shall be completed or supported by fiscal security in accordance with approved construction plans prior to submittal of final plat. A final plat shall not be filed for recordation until all public improvements and/or fiscal security has been accepted by the City. Developer will not be required to post fiscal security for the cost of public improvements that have been completed and, for partially completed public improvements, shall only be required to post fiscal security for the remaining estimated construction costs to complete such

improvements. The amount of the fiscal security shall equal one hundred percent (100%) of the remaining estimated construction costs to complete the public improvements not completed at the time of plat recordation. The District's engineer shall provide the cost estimate of the public infrastructure not completed at the time of the plat recordation to the City.

3.12 Deed Restrictions: Developer agrees that all restrictive covenants for the Project shall reinforce the provisions of this section and be applied to all builders and subsequent buyers and shall be appropriately drafted and filed to effectuate this intent and Agreement.

3.13 Fire Protection: Developer, and upon creation, each District, to the extent allowed by law, may pursue required approvals for, and implement and finance a fire protection plan to provide fire protection services within the Project's boundaries, in accordance with Hays County Emergency Services District No. 6 requirements.

3.14 Infrastructure Construction & Inspections: Developer, and upon creation, each District will be responsible for construction, operation and maintenance of all water, wastewater and drainage infrastructure within its boundaries except as provided in this Agreement, the Water Service Agreement or Wastewater Agreement or as otherwise agreed to by District, Owners and the City. The City will have the right to review and approve all plans and specifications for water and wastewater infrastructure, and to inspect all such water and wastewater infrastructure during construction and prior to acceptance for operation and maintenance. A copy of each set of approved plans and specifications and a copy of all inspection certificates will be filed with the City. All water and wastewater infrastructure within the Land shall be designed and built-in accordance with the rules, regulations, and specifications of the City and the TCEQ. All water and wastewater infrastructure within the Land shall be subject to City inspections and compliance with City Rules and TCEQ rules. In case of a conflict, the stricter provision shall prevail, unless TCEQ approval requires a different result. Reasonable and necessary fees incurred by the City for review of plans and specifications and inspections under this section shall be paid by the Developer or District(s).

3.15 Roadway Access: All streets and driveways within the Land shall be subject to the approval of the Texas Department of Transportation ("TxDOT") and/or Hays County, as applicable. City will review all streets and driveways when reviewing any plat, construction plan, and site plan.

3.16 Roads. The City agrees that the vehicular connections depicted in **Exhibit G** are hereby approved and shall be added to the City's Transportation Master Plan as necessary, including the loop road, shown on **Exhibit G**, as may be amended, to be added to the City's TMP. A Traffic Study has been completed for phase 1 of the Project. Phase 1 includes 244 single family homes. The Parties agree that, prior to final approval of a preliminary plat for phase 2 of the Project, a Traffic Impact Analysis ("TIA") for the entire Project will be approved by the City, Hays County, and TxDOT.

3.17 Connectivity. Developer shall use commercially reasonable efforts to start and diligently pursue the construction of the Phase 1 Road, Phase 2 Road, and Phase 3 Road generally depicted on **Exhibit G-1** by the following dates, subject to the terms and conditions contained herein, including the City's conditions precedent:

Phase 1 Road Start Date: December 2021

Phase 2 Road Start Date: February 2024

Phase 3 Road Start Date: February 2025

3.17.1 City shall require construction of two lanes of the four-lane offsite road, to be constructed by others, extending from Highway 290 to the southern boundary of the Project (hereinafter the "Southern Offsite Road"), to commence no later than June 1, 2023. In the event construction of two lanes of the Southern Offsite Road is not commenced by June 1, 2023, the committed Phase 2 Road Start Date of February 2024, shall be extended by the same number of days that commencement of the Southern Offsite Road is delayed beyond June 1, 2023. Further, the Developer shall not be obligated to commence construction of the Phase 3 Road two-lane expansion unless and until all four lanes of the Southern Offsite Road are complete. Developer will implement a traffic control plan for the Phase 3 Road to minimize disruption of traffic. The traffic control plan will be filed with application for the preliminary plat. Developer may build the Phase 2 Road two-lane roadway extension with open ditch, with the storm sewer to be added at the time of construction of the Phase 3 Road two-lane expansion.

3.17.2 City agrees to fulfill all the following obligations as conditions precedent to Developer's obligation to construct Phase 2 roads and Phase 3 two-lane expansion. The City agrees to complete the following items by November 1, 2021. For every day that one or more of the City's obligations remain incomplete beyond November 1, 2021, the Start Dates shall be extended by the same number of days: 1) execute and approve submission of the 321 Application for the Land; 2) approve nonstandard wholesale service agreement with the WTCPUA for 1,750 LUEs; 3) approve and submit service extension request (SER) for the remaining LUEs to serve the Land; 4) approve a raw water contract with Lower Colorado River Authority and reservation to the District for the total number of LUEs in the combined SERs; and 5) provide a copy of the Resolution consenting to creation of the District.

3.17.3 City further agrees to approve a nonstandard wholesale service agreement with the WTCPUA for the remaining LUEs included in the SER within 60 days of approval by the WTCPUA. The start dates set forth in Section 3.17 shall be extended by the same number of days that the nonstandard wholesale service agreement with the WTCPUA is not approved following such 60-day period.

3.17.4 Developer shall not be in default if the performance of its obligations is delayed, disrupted, or becomes impossible because of an act of God, war, earthquake, fire, pandemic, strike, work stoppages, shortage of materials, price increases in materials due to defined force majeure event, accident, civil commotion, epidemic, environmental litigation, act or inaction of government, its agencies, or offices, or any other similar cause. Upon occurrence of any such force majeure event, Developer shall notify the City, in writing, in accordance with Section 6.18.

3.17.5 Notwithstanding the other terms and conditions in this Agreement, the remedy for Developer's failure to comply with the road construction obligations is withholding approval of new plats, until such obligation has commenced, and specific performance. Building permits cannot be denied or delayed on platted and approved or accepted sections. Construction of improvements and acceptance thereof cannot be delayed or denied.

3.17.6 Section 5.4 regarding Right to Continue Development and Section 5.6 regarding Cooperation apply to the parties' agreement regarding roads contained in this Section 3.17.

3.18 Sidewalks. Developer shall construct or cause to be constructed five (5) foot sidewalks on each side of local residential streets. Arterial roads, as depicted on Exhibit G-1, will include, inside the right-of-way, a shared use path (8' or 10' depending on width of connecting path) on one side of the road and a five (5) foot sidewalk on the other side of the road.

ARTICLE 4. FINANCING DISTRICT

4.1 Consent to Creation of District: In accordance with Texas Local Government Code, Section 42.042, the City has consented to the creation of the Districts, including Hays County Municipal Utility District No. 7, covering all or portions of the land described in Exhibits A and A-1. The Developer may not add additional land to the District or Districts which is not already included in the Land without approval by the City, which shall not be unreasonably withheld. The City consents to forming additional Districts and annexing or de-annexing land between the Districts from the land already included in a District and included in this Agreement and no further approval of the City or City Council is required when a District is annexing or de-annexing land between Districts from land already included in a District and in this Agreement. The City agrees that any District may exclude land and may annex land owned by any Owner that is located within the boundaries of the Project and the City's ETJ and may be divided in accordance with the Act, in furtherance of Developer's development goals pursuant to this Agreement, and no further approvals of the City or City Council is required provided, however, City agrees to provide any additional documentation evidencing such consent as may be requested or required by Owner or the District.

4.2 Consent to Wastewater Treatment Facilities: The City understands that the District(s), or Developer, will prepare an application to the TCEQ, or its successor agency, for a Chapter

321 authorization to treat and dispose wastewater generated by the development that is subject to this Agreement. The City will submit the application to the TCEQ.

ARTICLE 5. AUTHORITY

5.1 Term:

5.1.1 Initial Term. This term of this Agreement will continue for twenty (20) years from the date of the last signature on this Agreement ("Initial Term"), unless sooner terminated per the terms of this Agreement. An extension not to exceed (10) years may be requested in writing to City Council and granting of the extension by City Council shall not be unreasonably withheld, conditioned, delayed, or require amendment to other terms of this Agreement.

5.1.2 Expiration. After the expiration of the Initial Term and any extension, this Agreement, will be of no further force and effect, except that termination will not affect any right or obligation previously granted.

5.1.3 Termination or Amendment. This Agreement may be terminated or amended as to all of the Land at any time by mutual written consent of the City and Owners or may be terminated or amended only as to a portion of the Land by the mutual written consent of the City and Owners of only the portion of the Land affected by the amendment or termination.

5.2 Authority: This Agreement is entered under the statutory authority of Chapter 212, Subchapter G, Texas Local Government Code. The Parties intend that this Agreement guarantee the continuation of the extraterritorial status of portions of the Land as provided in this Agreement; authorize certain land uses and development on the Land; provide for the uniform review and approval of plats and development plans for the Land; provide exceptions to certain ordinances; and provide other terms and consideration, including the continuation of land uses and zoning upon annexation of any portion of the Land to the City.

5.3 Applicable Rules: As of the Effective Date, Developer has initiated the subdivision and development permit process for the Project. The City agrees that, in accordance with Chapter 245, Texas Local Government Code, the City will consider the approval of any further approvals necessary for the Project based solely on the Applicable Rules, as modified by the Project Approvals, variances and this Agreement. Further, the City agrees that, upon the Effective Date, Developer has vested authority from the date of the Original Agreement to develop the Land in accordance with the Applicable Rules, as modified by any exceptions contained in the Project Approvals, variances, and this Agreement. In accordance with Chapter 245, Local Government Code, Owner may choose to apply changes in law, rules, regulations or ordinances of the City that enhance or protect the Project.

5.4 Right to Continue Development: In consideration of Owner's agreements hereunder, the City agrees that, during the term of this Agreement, it will not impose or attempt to impose: (a) any moratorium on building or development within the Project, or (b) any land use or development regulation that limits the rate or timing of land use approvals, whether affecting preliminary plans, final plats, site plans, building permits, certificates of occupancy or other necessary approvals, within the Project. No City-imposed moratorium, growth restriction, or other limitation affecting the rate, timing or sequencing of development or construction of all or any part of the Project will apply to the Land if such moratorium, restriction or other limitation conflicts with this Agreement or would have the effect of increasing Owner's obligations or decreasing Owner's rights and benefits under this Agreement. This Agreement on the part of the City will not apply to temporary moratoriums uniformly imposed throughout the City and ETJ due to an emergency constituting an imminent threat to the public health or safety, provided that the temporary moratorium continues only during the duration of the emergency.

5.5 Equivalent Substitute Obligation: If either Party is unable to meet an obligation under this Agreement due to a court order invalidating all or a portion of this Agreement, preemptive state or federal law, an imminent and bona fide threat to public safety that prevents performance or requires different performance, subsequent conditions that would legally excuse performance under this Agreement, or, the Parties agree to cooperate to revise this Agreement to provide for an equivalent substitute right or obligation as similar in terms to the illegal, invalid, or unenforceable provision as is possible and is legal, valid and enforceable, or other additional or modified rights or obligations that will most nearly preserve each Party's overall contractual benefit under this Agreement.

5.6 Cooperation:

5.6.1 The City and Owners each agree to execute such further documents or instruments as may be necessary to evidence their agreements hereunder.

5.6.2 The City agrees to cooperate with Developer in connection with any waivers or approvals Developer may desire or require to obtain from the County in connection with the development of the Land and a deferral of the County's plat and plan approval powers to the City for all plats and public infrastructure within the Project, other than roadway infrastructure that will be dedicated to the County for operation and maintenance after construction. Roads that will be dedicated to the County for operation and maintenance shall be subject to County review, inspection, and approval prior to dedication to the County.

5.6.3 The City acknowledges that the Developer, District, or HOA may in the future seek State or federal grant matching funds to finance certain park, recreational and environmental facilities within the Project. The City agrees to cooperate with and support these efforts to obtain grant funding that do not interfere with or conflict with the City's efforts to secure similar funding, including entering into joint use agreements with the Developer and HOA, in furtherance of the City's goal of making additional park, environmental and recreational facilities available to the

area. Provided, however, that the City will have no financial obligation associated with this activity.

5.7 Litigation: In the event of any third-party lawsuit or other claim relating to the validity of this Agreement or any actions taken by the Parties hereunder, Owners and the City agree to cooperate in the defense of such suit or claim, and to use their respective best efforts to resolve the suit or claim without diminution of their respective rights and obligations under this Agreement, The City's participation in the defense of such a lawsuit is expressly conditioned on budgetary appropriations for such action by the City Council. **Developer agrees, to the extent allowed by Texas law, to defend and indemnify the City for any reasonable and necessary litigation expenses, including court costs and outside attorney's fees, related to defense of this Agreement from third-party claims if the third-party claims arise from Developer's negligent acts or omissions or breach of this Agreement.** The filing of any third-party lawsuit relating to this Agreement, or the development of the Project will not delay, stop, or otherwise affect the development of the Project or the City's processing or issuance of any approvals for the Project, unless otherwise required by a court of competent jurisdiction.

ARTICLE 6. GENERAL PROVISIONS

6.1 Assignment & Binding Effect:

6.1.1 This Agreement, and the rights and obligations of Owners hereunder, may be assigned by one or more Owners to a subsequent purchaser of all or a portion of the undeveloped property within the Project provided that the assignee assumes all of the obligations hereunder. Any assignment must be in writing, specifically describe the property in question, set forth the assigned rights and obligations and be executed by the proposed assignee, A copy of the assignment document must be delivered to the City and recorded in the real property records as may be required by applicable law. Upon any such assignment, the assignor will be released of any further obligations under this Agreement as to the property sold and obligations assigned.

6.1.2 If an Owner assigns its rights and obligations hereunder as to a portion of the Project, then the rights and obligations of any assignee and Owner will be non-severable, and Owner will be liable for the nonperformance of the assignee and vice-versa. In the case of nonperformance by one developer, the City may pursue all remedies against that nonperforming developer, even if such remedies will impede development activities of any performing developer as a result of that nonperformance.

6.1.3 The provisions of this Agreement will be binding upon, and inure to the benefit of the Parties, and their respective successors and assigns. This Agreement will not, however, be binding upon, or create any encumbrance to title as to, any ultimate consumer who purchases a fully developed and improved lot within the Project.

6.2 Severability: If any provision of this Agreement is illegal, invalid, or unenforceable, under present or future laws, it is the intention of the Parties that the remainder of this Agreement not be affected, and, in lieu of each illegal, invalid, or unenforceable provision, that a provision be added to this Agreement which is legal, valid, and enforceable and is as similar in terms to the illegal, invalid or enforceable provision as is possible.

6.3 Governing Law, Jurisdiction & Venue: This Agreement shall be governed by and construed in accordance with the laws of the State of Texas, as it applies to contracts performed within the State of Texas and without regard to any choice of law rules or principles to the contrary, The parties acknowledge that this Agreement is performable in Hays County, Texas and hereby submit to the jurisdiction of the courts of that County, and hereby agree that any such Court shall be a proper forum for the determination of any dispute arising hereunder.

6.4 No Third-Party Beneficiary: This Agreement is not intended, nor will it be construed, to create any third-party beneficiary rights in any person or entity who is not a Party, unless expressly otherwise provided.

6.5 Mortgagee Protection: This Agreement will not affect the right of Owners to encumber all or any portion of the Land by mortgage, deed of trust or other instrument to secure financing for the Project. The City understands that a lender providing financing for the Project ("Lender") may require interpretations of or modifications to this Agreement and agrees to cooperate with Owners and their Lenders' representatives in connection with any requests for interpretations or modifications. The City agrees not to unreasonably withhold or delay its approval of any requested interpretation or modification if the interpretation or modification is consistent with the intent and purposes of this Agreement. The City agrees as follows:

6.5.1 Neither entering into this Agreement, nor any breach of this Agreement, will affect any lien upon all or any portion of the Land.

6.5.2 The City will, upon written request of a Lender, provide the Lender with a copy of any written notice of default given to Owners under this Agreement within ten (10) days of the date such notice is given to Owners.

6.5.3 In the event of default by an Owner under this Agreement, a Lender may, but will not be obligated to, cure any default during any cure period extended to Owner, either under this Agreement or under the notice of default.

6.5.4 Any Lender who comes into possession of any portion of the Land by foreclosure or deed in lieu of foreclosure will take such property subject to the terms of this Agreement. No Lender will be liable for any defaults or monetary obligations of an Owner arising prior to the Lender's acquisition of title, but a Lender will not be entitled to obtain any permits or approvals with respect to that property until all

delinquent fees and other obligations of Owners under this Agreement that relate to the property in question have been paid or performed.

6.6 Certificate of Compliance: Within thirty (30) days of written request by a Party given accordance with Section 6.18, the other Party or Parties will execute and deliver to the requesting Party a statement certifying that: (a) this Agreement is unmodified and in full force and effect or, if there have been modifications, that this Agreement is in full force and effect as modified and stating the date and nature of each modification; (b) there are no current uncured defaults under this Agreement, or specifying the date and nature of each default; and (c) any other information that may be reasonably requested. A Party's failure to deliver a requested certification within this 30-day period will conclusively be deemed to constitute a confirmation that this Agreement is in full force without modification, and that there are no uncured defaults on the part of the requesting Party. The City Administrator or Planning Director is authorized to execute any requested certificate on behalf of the City.

6.7 Default: If a Party defaults in its obligations under this Agreement, the other Party must, prior to exercising a remedy available to that Party due to the default, give written notice to the defaulting Party, specifying the nature of the alleged default and the manner in which it can be satisfactorily cured, and extend to the defaulting Party at least thirty (30) days from receipt of the notice to cure the default. If the nature of the default is such that it cannot reasonably be cured within the thirty (30) day period, the commencement of the cure within the thirty (30) day period and the diligent prosecution of the cure to completion will be deemed a cure within the cure period. The City may issue Stop Work Orders for violations arising under this Agreement or the regulations applied herein.

6.8 Remedies for Default: If a Party defaults under this Agreement and fails to cure the default within the applicable cure period, the non-defaulting Party will have all rights and remedies available under this Agreement or applicable law, including the right to institute legal action to cure any default, to enjoin any threatened or attempted violation of this Agreement or to enforce the defaulting Party's obligations under this Agreement by specific performance or writ of mandamus, or to terminate this Agreement. In the event of a default by the City, Owners will be entitled to seek a writ of mandamus, in addition to seeking any other available remedies. All remedies available to a Party will be cumulative and the pursuit of one remedy will not constitute an election of remedies or a waiver of the right to pursue any other available remedy.

6.9 Reservation of Rights: To the extent not inconsistent with this Agreement, each Party reserves all rights, privileges, and immunities under applicable laws.

6.10 Attorneys Fees: The prevailing Party in any dispute under this Agreement will be entitled to recover from the non-prevailing Party its reasonable attorney's fees, expenses and court costs in connection with any original action, any appeals, and any post-judgment proceedings to collect or enforce a judgment.

6.11 Waiver: Any failure by a Party to insist upon strict performance by the other Party of any provision of this Agreement will not, regardless of the length of time during which that failure continues, be deemed a waiver of that Party's right to insist upon strict compliance with all terms of this Agreement. In order to be effective as to a Party, any waiver of default under this Agreement must be in writing, and a written waiver will only be effective as to the specific default and as to the specific period of time set forth in the written waiver. A written waiver will not constitute a waiver of any subsequent default, or of the right to require performance of the same or any other provision of this Agreement in the future.

6.12 Entire Agreement: This Agreement contains the entire agreement of the Parties. This Agreement may be amended only by written agreement signed by the Parties. An amendment to this Agreement may only be approved by an affirmative vote of at least three of the five (3 of 5) members of the City Council.

6.13 Exhibits, Headings, Construction & Counterparts: All exhibits attached to this Agreement are incorporated into and made a part of this Agreement for all purposes. If a conflict exists between the terms in this Agreement and an Exhibit or Exhibits to this Agreement, the Parties will endeavor to resolve the conflict in accordance with the intent of the Parties. If an unresolvable conflict exists, the terms of this Agreement shall control over the Exhibit. The paragraph headings contained in this Agreement are for convenience only and do not enlarge or limit the scope or meaning of the paragraphs. Wherever appropriate, words of the masculine gender may include the feminine or neuter, and the singular may include the plural, and vice-versa. Each of the Parties has been actively and equally involved in the negotiation of this Agreement. Accordingly, the rule of construction that any ambiguities are to be resolved against the drafting Party will not be employed in interpreting this Agreement or its exhibits. This Agreement may be executed in any number of counterparts, each of which will be deemed to be an original, and all of which will together constitute the same instrument. This Agreement will become effective only when one or more counterparts, individually or taken together, bear the signatures of all the Parties.

6.14 Time: Time is of the essence of this Agreement. In computing the number of days for purposes of this Agreement, all days will be counted, including Saturdays, Sundays and legal holidays; however, if the final day of any time period falls on a Saturday, Sunday or legal holiday, then the final day will be deemed to be the next day that is not a Saturday, Sunday or legal holiday.

6.15 Authority for Execution: The City certifies, represents, and warrants that the execution of this Agreement has been duly authorized, and that this Agreement has been approved in conformity with City ordinances and other applicable legal requirements. Each Owner certifies, represents, and warrants that the execution of this Agreement is duly authorized in conformity with its authority.

6.16 Property Rights: Owners expressly and unconditionally waive and release the City from any obligation to perform a takings impact assessment under the Texas Private Real Property Rights Act, Texas Government Code Chapter 2007, as it may apply to this Agreement, the Land, and the Project so long as this Agreement is in effect.

6.17 Mandatory Disclosures: Texas law requires that contractors make certain disclosures. Prior to the effective date of this Agreement, the Owner has submitted to the City a copy of the Conflict of Interest Questionnaire form (CIQ Form) approved by the Texas Ethics Commission (Texas Local Government Code Chapter 176). Execution of this Agreement is agreeing that the Owner is compliant with the Prohibit on Contracts with Companies Boycotting Israel (Texas Government Code Chapter 2270). The Contractor must also fill out Form 1295, as required by the Texas Ethics Commission, and submit it to the City. The form may be found here: https://www.ethics.state.tx.us/whatsnew/elf info form 1295.htm

6.18 Notices: Any notices or approvals under this Agreement must be in writing and may be sent by hand delivery, facsimile (with confirmation of delivery) or certified mail, return receipt requested, to the Parties at the following addresses or as such addresses may be changed from time to time by written notice to the other Parties:

CITY:

Original: **City Administrator City of Dripping Springs**
P. O. Box 384
Dripping Springs, TX 78620

City Attorney
City of Dripping Springs
P.O. Box 384
Dripping Springs, TX 78620

OWNER:

Original: **Anarene Investments Ltd.**
c/o 1600 West Loop South, Suite 2600
Houston, TX 77027

DEVELOPER/
OWNER:

Original: **Double L Development, LLC**
1600 West Loop South, Suite 2600
Houston, TX 77027

Copy: **Allen Boone Humphries Robinson LLP**
Attn: Ryan Harper
1108 Lavaca Street, Suite 510
Austin, Texas 78701

OWNER:

Original: **LL Ranch Investment, LP**
1600 West Loop South, Suite 2600
Houston TX 77027

OWNER:

Original **Graham Hill**
c/o 1600 West Loop South, Suite 2600
Houston, TX 77027

OWNER:

Original: **Melinda Hill Perrin**
c/o 1600 West Loop South, Suite 2600
Houston, TX 77027

Either City or Owners may change their mailing address at any time by giving written notice of such change to all other Parties in the manner provided herein at least ten days prior to the date such change is affected. All notices under this Agreement will be deemed given on the earlier of the date personal delivery is affected or on the delivery date or attempted delivery date shown on the return receipt or facsimile confirmation.

6.19 Exhibits: The following exhibits are attached to this Agreement, and made a part hereof for all purposes:

Exhibit A	-	Description of the Land
Exhibit A-1	-	Description
Exhibit B	-	Master Plan for Parkland
Exhibit C	-	Hill Tops Preservation
Exhibit D	-	Concept Plan
Exhibit E	-	City of Dripping Springs Code Variances
Exhibit F	-	Approved Plant List
Exhibit G		Roadway Connectivity Plan
Exhibit G-1		Roadway Phasing Plan
Exhibit H		Single Family Lot Impervious Cover Assumptions
Exhibit I		Maximum Impervious Cover Per Residential Lot
Exhibit J		Vested Ordinances
Exhibit K		Lot Sizes

Exhibit L	Tree Plan
Exhibit M	Buffers
Exhibit N	Lot Allowances

CITY OF DRIPPING SPRINGS

By: _____
Bill Foulds, Jr., Mayor

This instrument was acknowledged on this 26 day of October, 2021 by Bill Foulds, Jr., Mayor of the City of Dripping Springs, Texas, a Texas general law municipality, on behalf of said municipality.

ANDREA CUNNINGHAM
My Notary ID # 131603237
Expires June 13, 2022

_____
Notary Public, State of Texas

RESPECTFULLY SUBMITTED this 28th day of October, 2021.

DOUBLE L DEVELOPMENT, LLC, a Texas limited liability company

By: _____

David A. Cannon, Manager

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

The foregoing instrument was ACKNOWLEDGED before me this 28th day of October, 2021, by David A. Cannon, in his capacity as Manager of Double L Development, LLC, a Texas limited liability company, on behalf of said limited liability company.

[SEAL]

FRANCES K. ARD
Notary ID #4169161
My Commission Expires
April 14, 2022

Notary Public, State of Texas _____

My Commission Expires: April 14, 2022

Frances K. Ard Printed Name of Notary Public

RESPECTFULLY SUBMITTED this 28th day of October, 2021.

LL RANCH INVESTMENTS, LP, a Texas limited partnership

By: Double L Ranch Management, LLC, a Texas limited liability company, its sole general partner

By: _____
David A. Cannon, Manager

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

The foregoing instrument was ACKNOWLEDGED before me this 28th day of October, 2021, by David A. Cannon, in his capacity as Manager of Double L Ranch Management, LLC, a Texas limited liability company, the sole general partner of LL Ranch Investments, LP, a Texas limited partnership, on behalf of said limited partnership.

[SEAL]

FRANCES K. ARD
Notary ID #4169161
My Commission Expires
April 14, 2022

Notary Public, State of Texas

My Commission Expires: April 14, 2022

Frances K. Ard Printed Name of Notary Public

RESPECTFULLY SUBMITTED this 29th day of October, 2021.

ANARENE INVESTMENTS, LTD., a Texas limited partnership

By: Anarene Management, LLC, a Texas limited liability company, its general partner

By: _____
John Graham Hill, Manager

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

The foregoing instrument was ACKNOWLEDGED before me this 29th day of October, 2021, by John Graham Hill, in his capacity as Manager of Anarene Investment, LLC, a Texas limited liability company, general partner of Anarene Investment, Ltd., a Texas limited partnership, on behalf of said limited partnership.

[SEAL]

FRANCES K. ARD
Notary ID #4169161
My Commission Expires
April 14, 2022

Notary Public, State of Texas _____

My Commission Expires: **April 14, 2022**

Frances K. Ard Printed Name of Notary Public

LANDOWNER

JOHN GRAHAM HILL

By: _____

Date: October 29, 2021

This instrument was acknowledged on this 29th day of October, 2021, by JOHN GRAHAM HILL.

_____
Notary Public, State of Texas

FRANCES K. ARD
Notary ID #4169161
My Commission Expires
April 14, 2022

LANDOWNER

MELINDA HILL PERRIN

By: _____

Date: October 29, 2021

This instrument was acknowledged on this 29th day of October, 2021, by MELINDA HILL PERRIN.

_____
Notary Public, State of Texas

FRANCES K. ARD
Notary ID #4169161
My Commission Expires
April 14, 2022

EXHIBIT A

DOUBLE L DEVELOPMENT, LLC
33.099 ACRES
JOB NO. 5955-00

DESCRIPTION OF A 33.099 ACRE TRACT OF LAND
HAYS COUNTY, TEXAS

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE ANTHONY G. DAVY SURVEY NO. 38, ABSTRACT NO. 148, SITUATED IN HAYS COUNTY, TEXAS; BEING ALL OF THAT CALLED 11.02 ACRE TRACT (TRACT 2), THAT CALLED 11.0 ACRE TRACT (TRACT 3) AND THAT CALLED 11.05 ACRE TRACT (TRACT 4) AS CONVEYED ANARENE INVESTMENTS, LTD., BY GENERAL WARRANY DEED RECORDED IN VOLUME 2639, PAGE 420 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

COMMENCING for POINT OF REFERENCE at a concrete monument found on the west right-of-way line of Ranch Road 12, (100' wide right-of-way), on the west line of a called 3.79-acre tract as conveyed to Douglas and Marnnie Boone, by general warranty deed recorded in Document No. 90031210 of the Official Public Records of Hays County, Texas, from which a 1/2-inch iron rod with cap stamp "BGE INC" set at the most easterly southeast corner of a called 139.16-acre tract (Tract 1) as conveyed Anarene Investments, Ltd., by the above described general warranty deed bears, N 30°25'01" E a distance of 5.84 feet; Thence with the west right-of-way line of said Ranch Road 12, S 30°12'30" W a distance of 1,614.33 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the southeast corner of a called 11.00-acre tract as conveyed to Joyce Sorenson by deed recorded in Volume 1438, Page 604 of the Official Public Records of Hays County, Texas, being the northeast corner of the above described Anarene Investments 11.02-acre tract (Tract 2), for the northeast corner and **POINT OF BEGINNING** of the herein described tract;

THENCE, with west right-of-way line of said Ranch Road 12, S 30°12'30" W a distance of 652.24 feet to a concrete monument found on the east line of the above described Anarene Investments 11.0-acre tract (Tract 3), at a point of curvature of a curve to the right;

THENCE, continuing with west right-of-way line of said Ranch Road 12, along said curve to the right an arc distance of 537.81 feet, having a radius of 1,378.00 feet, a central angle of 22°21'42" and a chord which bears S 41°21'35" W a distance of 534.41 feet to a concrete monument found on the east line of the above described Anarene Investments 11.05-acre tract (Tract 4);

THENCE, continuing with west right-of-way line of said Ranch Road, S 52°28'45" W a distance of 415.74 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set on the east line of said Anarene Investments 11.05-acre tract (Tract 4), at a point of curvature of a curve to the left, from which a concrete monument found bears, S 37°36'13" E a distance of 0.96 feet, also from which a concrete monument found on the east right-of-way line of said Ranch Road 12 bears, S 37°36'13" E a distance of 100.00 feet;

THENCE, continuing with west right-of-way line of said Ranch Road 12, along said curve to the left an arc distance of 259.34 feet, having a radius of 1,961.00 feet, a central angle of 07°34'38" and a chord which bears S 48°40'48" W a distance of 259.15 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the south corner of said Anarene Investments 11.05-acre tract (Tract 4), for the south corner of the herein described tract, from which a concrete monument found on the west right-of-way line of said Ranch Road 12 bears, along a curve to the left an arc distance of 537.69 feet, having a radius of 1,961.00 feet, a central angle of 15°42'36" and a chord which bears S 37°02'11" W a distance of 536.01 feet;

THENCE, leaving the west right-of-way line of said Ranch Road 12, with the westerly line of said Anarene Investments 11.05-acre tract (Tract 4), N 05°51'23" W pass a 1/2-inch iron rod found at a distance of 17.05 feet and continuing on for a total distance of 344.31 feet to a 1/2-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found, at an outside corner of said Anarene Investments 11.05-acre tract (Tract 4), for an outside corner of the herein described tract;

THENCE, continuing with the westerly line of said Anarene Investments 11.05-acre tract (Tract 4), N 40°40'07" E a distance of 111.95 feet to a to a 1/2-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found, at an outside corner of said Anarene Investments 11.05-acre tract (Tract 4), for an outside corner of the herein described tract;

THENCE, continuing with the westerly line of said Anarene Investments 11.05-acre tract (Tract 4), S 76°19'22" E a distance of 116.44 feet to a 1/2-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found, on the east line of a called 88-acre tract as conveyed to Donald and Donnie Wayne Bonham by trustee's distribution deed recorded in Document No. 80025837 of the Official Public Records of Hays County, Texas, at an inside corner of said Anarene Investments 11.05-acre tract (Tract 4), for an inside corner of the herein described tract;

THENCE, continuing with the westerly line of said Anarene Investments 11.05-acre tract (Tract 4) and the east line of said Bonham 88-acre tract, N 10°45'34" W a distance of 852.52 feet to a 1/2-inch iron rod found at the common west corner of said Anarene Investments 11.05-acre tract (Tract 4) and 11.0-acre tract (Tract 3);

THENCE, continuing with the westerly line of said Anarene Investments 11.0-acre tract (Tract 3) and the east line of said Bonham 88-acre tract, generally along a fence, N 10°44'40" W a distance of 550.56 feet to a 1/2-inch iron rod found at the common west corner of said Anarene Investments 11.0-acre tract (Tract 3) and 11.02-acre tract (Tract 2);

THENCE, continuing with the westerly line of said Anarene Investments 11.02-acre tract (Tract 2) and the east line of said Bonham 88-acre tract, generally along a fence, N 10°40'50" W a distance of 431.04 feet to a 1/2-inch iron rod found at the most westerly southwest corner of a called 11.00-acre tract as conveyed to Bill Ben Biggs by deed recorded in Document No. 16023996 of the Official Public Records of Hays County, Texas, being the northwest corner of said Anarene Investments 11.02-acre tract (Tract 2), for the northwest corner of the herein described tract;

THENCE, with the north line of said Anarene Investments 11.02-acre tract (Tract 2), S 59°47'50" E a distance of 1,615.72 feet to the **POINT OF BEGINNING** and containing 33.099 acres of land, more or less.

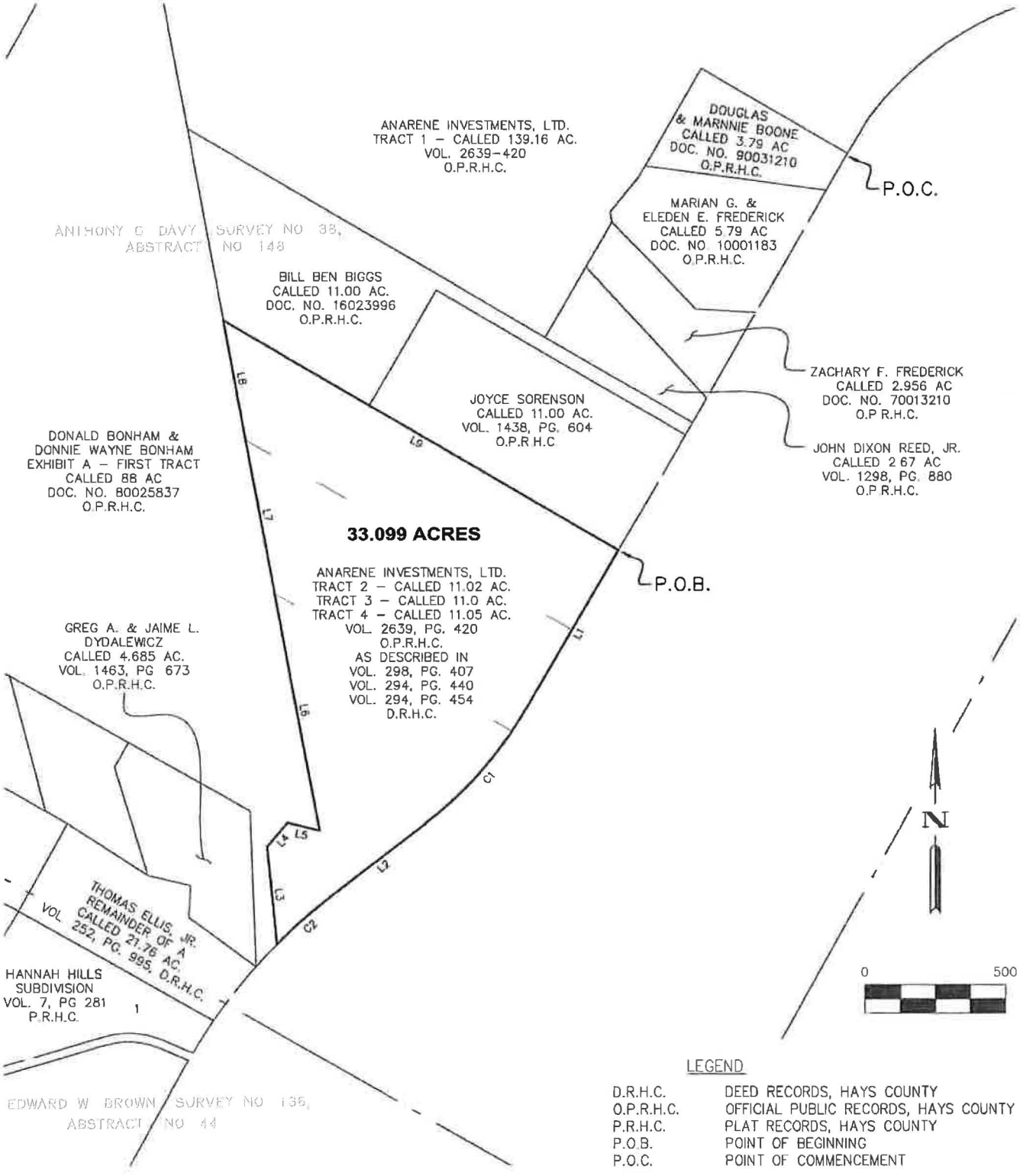
I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

Jonathan O. Nobles RPLS No. 5777
BGE, Inc.
7000 North Mopac, Suite 330
Austin, Texas 78731
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

12/12/2018
Date

Date: December 12, 2018
Project No.: 5955-00

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION



LEGEND

D.R.H.C.	DEED RECORDS, HAYS COUNTY
O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
P.R.H.C.	PLAT RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

BGE, Inc.
7000 North Mopac, Suite 330, Austin, TX 78731
Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying Firm No. 10106502

SCALE: 1"=500'

SHEET 4 OF 5

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	S 30°12'30" W	652.24'
L2	S 52°28'45" W	415.74'
L3	N 05°51'23" W	344.31'
L4	N 40°40'07" E	111.95'
L5	S 76°19'22" E	116.44'
L6	N 10°45'34" W	852.52'
L7	N 10°44'40" W	550.56'
L8	N 10°40'50" W	431.04'
L9	S 59°47'50" E	1,615.72'

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	537.81'	1,378.00'	22°21'42"	S 41°21'35" W	534.41'
C2	259.34'	1,961.00'	7°34'38"	S 48°40'48" W	259.15'

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Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying Firm No. 10106502

SCALE: 1"=500'

SHEET 5 OF 5

DESCRIPTION OF A 139.641 ACRE TRACT OF LAND
HAYS COUNTY, TEXAS

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE ANTHONY G. DAVY SURVEY NO. 38, ABSTRACT NO. 148, SITUATED IN HAYS COUNTY, TEXAS; BEING ALL OF THAT CALLED 139.16 ACRE TRACT (TRACT 1) AS CONVEYED ANARENE INVESTMENTS, LTD., BY GENERAL WARRANY DEED RECORDED IN VOLUME 2639, PAGE 420 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

COMMENCING for POINT OF REFERENCE at a concrete monument found on the west right-of-way line of Ranch Road 12, (right-of-way varies), on the west line of a called 3.79-acre tract as conveyed to Douglas and Marnnie Boone, by general warranty deed recorded in Document No. 90031210 of the Official Public Records of Hays County, Texas, from which a concrete monument found on the west right-of-way line of said Ranch Road 12 bears, S 30°12'30" W a distance of 2,266.57 feet; Thence with the west right-of-way line of said Ranch Road 12, N 30°25'01" E a distance of 5.84 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the most easterly southeast corner of the above described Anarene Investments 139.16-acre tract, for the most easterly southeast corner and **POINT OF BEGINNING** of the herein described tract, from which a 1/2-inch iron rod found bears, S 59°48'49" E a distance of 0.36 feet;

THENCE, leaving the west right-of-way line of Ranch Road 12, generally along a fence, with a south line of said Anarene Investments 139.16-acre tract, N 59°48'49" W a distance of 600.22 feet to a 1/2-inch iron rod found at the northwest corner of said Boone 3.79-acre tract, being an inside corner of said Anarene Investments 139.16-acre tract, for an inside corner of the herein described tract;

THENCE, with an easterly line of said Anarene Investments 139.16-acre tract, generally along a fence, the following four (4) courses:

1) S 30°11'19" W a distance of 445.90 feet to a 1/2-inch iron rod found on the west line of a called 5.79-acre tract as conveyed to Marian G. and Elden E. Frederick by warranty deed with vendor's lien recorded in Document No. 10001183 of the Official Public Records of Hays County, Texas;

2) S 38°52'56" W a distance of 156.72 feet to a 1/2-inch iron rod found on the west line of said Marian G. and Elden E. Frederick 5.79-acre tract;

3) S 09°02'34" E a distance of 37.18 feet to a 1/2-inch iron rod found at the common west corner of said Marian G. and Elden E. Frederick 5.79-acre tract and a called 2.956-acre tract as conveyed to Zachary F. Frederick by warranty deed with vendor's lien recorded in Document No. 70013210 of the Official Public Records of Hays County, Texas; and

4) S 30°13'06" W a distance of 469.75 feet to a 1/2-inch iron rod found on the north line of a 11.00-acre tract as conveyed to Bill Ben Biggs by deed recorded in Document No. 16023996 of the Official Public Records of Hays County, Texas, at the southwest corner of a called 2.67-acre tract as conveyed to John Dixon Reed, Jr. by general warranty deed recorded in Volume 1298, Page 880 of the Official Public records of Hays County, Texas, being the most southerly corner of said Anarene Investments 139.16-acre tract, for the most southerly corner of the herein described tract;

THENCE, with a southerly line of said Anarene Investments 139.16-acre tract, generally along a fence, N 59°46'29" W a distance of 1,465.41 feet to a 1/2-inch iron rod found on the east line of a called 88-acre tract as conveyed to Donald and Donnie Wayne Bonham by trustee's distribution deed recorded in Document No. 80025837 of the Official Public Records of Hays County, Texas, at the northwest corner of said Biggs 11.00-acre tract, being the most westerly southwest corner of said Anarene Investments 139.16-acre tract, for the most westerly southwest corner of the herein described tract;

THENCE with the west line of said Anarene Investments 139.16-acre tract, generally along a fence, the following five (5) courses:

1) N 10°38'24" W a distance of 909.58 feet to a cedar fence post found;

2) N 10°11'12" W a distance of 164.18 feet to a cedar fence post found on the east line of a called 204-acre tract as conveyed to said Donald and Donnie Wayne Bonham by said trustee's distribution deed, being the most westerly corner of said Anarene Investments 139.16-acre tract, for the most westerly corner of the herein described tract;

3) N 28°41'46" E a distance of 542.00 feet to a cedar fence post found;

4) N 28°47'55" E, pass a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found 0.60 feet right of line at a distance of 482.92 feet and continuing on for a total distance of 866.82 feet to a cedar fence post; and

5) N 28°54'55" E a distance of 529.61 feet to a calculated point at the approximate centerline of Barton Creek, on the southerly line of a called 104.491-acre tract as conveyed to Relentless Ranch, L.L.C. by correction general warranty deed recorded in Document No. 90012886 of the Official Public Records of Hays County, Texas, at the west end of a Boundary Agreement by and between Wiley Allen Haydon, John Hill and Peery-Flume Properties, Inc. recorded in Volume 402, Page 683 of the Deed Records of Hays County, Texas, being the northwest corner of said Anarene Investments 139.16-acre tract, for the northwest corner of the herein described tract;

THENCE, with the approximate centerline of said Barton Creek, being the northerly line of said Anarene Investments 139.16-acre tract, and the southerly lines of said Relentless Ranch, L.L.C. 104.491-acre tract and Barton Creek Ranch a subdivision as recorded in Volume 4, Page 183 of the Plat Records of Hays County, Texas, the following twenty-one (21) courses:

1) S 70°59'20" E a distance of 120.37 feet to a calculated angle point;

2) S 51°55'32" E a distance of 77.06 feet to a calculated angle point;

3) S 16°38'10" E a distance of 62.50 feet to a calculated angle point;

4) S 10°00'16" W a distance of 118.67 feet to a calculated angle point;

5) S 23°24'00" E a distance of 312.21 feet to a calculated angle point;

6) S 43°16'44" E a distance of 345.40 feet to a calculated angle point;

7) S 53°17'30" E a distance of 549.07 feet to a calculated angle point;

8) S 86°09'12" E a distance of 89.15 feet to a calculated angle point;

9) S 57°50'27" E a distance of 53.27 feet to a calculated angle point;

10) S 43°29'01" E a distance of 430.90 feet to a calculated angle point;

11) S 60°01'11" E a distance of 131.02 feet to a calculated angle point;

12) S 83°13'21" E a distance of 277.83 feet to a calculated angle point;

13) N 63°18'21" E a distance of 102.47 feet to a calculated angle point;

14) N 83°26'31" E a distance of 61.03 feet to a calculated angle point;

15) S 66°44'36" E a distance of 328.20 feet to a calculated angle point;

16) S 47°24'46" E a distance of 96.56 feet to a calculated angle point;

17) S 65°43'06" E a distance of 358.78 feet to a calculated angle point;

18) S 83°49'47" E a distance of 86.81 feet to a calculated angle point;

19) N 40°32'43" E a distance of 96.08 feet to a calculated angle point;

20) S 81°17'05" E a distance of 60.72 feet to a calculated angle point; and

21) S 57°50'06" E a distance of 333.80 feet to a calculated point on the curving west right-of-way line of said Ranch Road 12, at the northeast corner of said Anarene Investments 139.16-acre tract, for the northeast corner of the herein described tract;

THENCE, leaving the approximate centerline of said Barton Creek, with the west right-of-way line of said Ranch Road 12 and the east line of said Anarene Investments 139.16-acre tract the following five (5) courses:

1) Along a curve to the right, an arc distance of 535.20 feet, having a radius of 1,829.86 feet, a central angle of 16°45'28" and a chord which bears S 68°02'14" W a distance of 533.29 feet to a concrete monument found;

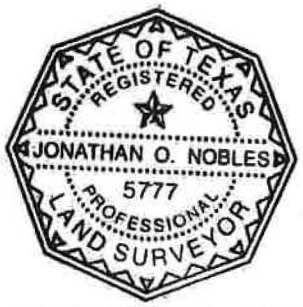
2) S 74°30'50" W a distance of 305.45 feet to a concrete monument found;

3) S 68°30'56" W a distance of 233.16 feet to a concrete monument found at a point of curvature of a curve to the left;

4) Along said curve to the left an arc distance of 584.98 feet, having a radius of 1,205.47 feet, a central angle of 27°48'14" and a chord which bears S 51°28'02" W a distance of 579.26 feet to a concrete monument found;

5) S 30°25'01" W a distance of 149.26 feet to the **POINT OF BEGINNING** and containing 139.641 acres of land, more or less.

I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

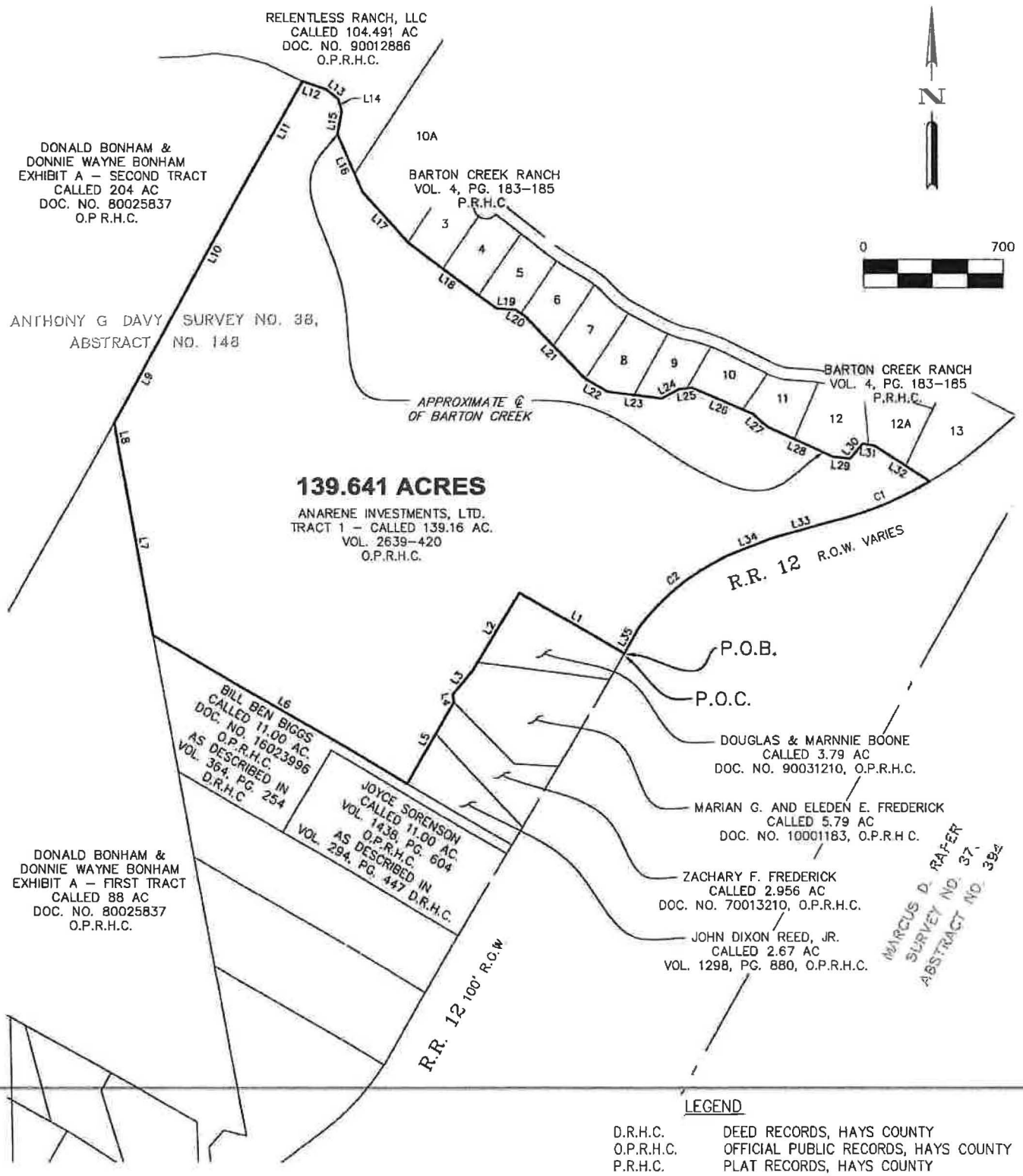


12/12/2018

Jonathan O. Nobles RPLS No. 5777 — Date
BGE, Inc.
7000 North Mopac, Suite 330
Austin, Texas 78731
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

Date: December 12, 2018
Project No.: 5955-00

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION



LEGEND

D.R.H.C.	DEED RECORDS, HAYS COUNTY
O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
P.R.H.C.	PLAT RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

BGE, Inc.
7000 North Mopac, Suite 330, Austin, TX 78731
Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying Firm No. 10106502

SCALE: 1"=700'

SHEET 5 OF 6

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	N 59°48'49" W	600.22'
L2	S 30°11'19" W	445.90'
L3	S 38°52'56" W	156.72'
L4	S 09°02'34" E	37.18'
L5	S 30°13'06" W	469.75'
L6	N 59°46'29" W	1,465.41'
L7	N 10°38'24" W	909.58'
L8	N 10°11'12" W	164.18'
L9	N 28°41'46" E	542.00'
L10	N 28°47'55" E	866.82'
L11	N 28°54'55" E	529.61'
L12	S 70°59'20" E	120.37'
L13	S 51°55'32" E	77.06'
L14	S 16°38'10" E	62.50'
L15	S 10°00'16" W	118.67'
L16	S 23°24'00" E	312.21'
L17	S 43°16'44" E	345.40'
L18	S 53°17'30" E	549.07'

LINE TABLE		
NUMBER	BEARING	DISTANCE
L19	S 86°09'12" E	89.15'
L20	S 57°50'27" E	53.27'
L21	S 43°29'01" E	430.90'
L22	S 60°01'11" E	131.02'
L23	S 83°13'21" E	277.83'
L24	N 63°18'21" E	102.47'
L25	N 83°26'31" E	61.03'
L26	S 66°44'36" E	328.20'
L27	S 47°24'46" E	96.56'
L28	S 65°43'06" E	358.78'
L29	S 83°49'47" E	86.81'
L30	N 40°32'43" E	96.08'
L31	S 81°17'05" E	60.72'
L32	S 57°50'06" E	333.80'
L33	S 74°30'50" W	305.45'
L34	S 68°30'56" W	233.16'
L35	S 30°25'01" W	149.26'

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	535.20'	1,829.86'	16°45'28"	S 68°02'14" W	533.29'
C2	584.98'	1,205.47'	27°48'14"	S 51°28'02" W	579.26'

BGE, Inc.
7000 North Mopac, Suite 330, Austin, TX 78731
Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying Firm No. 10106502

SCALE: 1"=700'

SHEET 6 OF 6

DESCRIPTION OF A 1,240.674 ACRE TRACT OF LAND
HAYS COUNTY, TEXAS

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE PHILIP A. SMITH SURVEY NO. 26, ABSTRACT NO. 415, THE MARCUS D. RAPER SURVEY NO. 37, ABSTRACT NO. 394, THE ANTHONY G. DAVY SURVEY NO. 38, ABSTRACT NO. 148 AND THE EDWARD W. BROWN SURVEY NO. 136, ABSTRACT NO. 44, SITUATED IN HAYS COUNTY, TEXAS; BEING A PORTION OF A CALLED 1,051.23 ACRE TRACT AS DESCRIBED IN GENERAL WARRANTY DEED CONVEYED TO ANARENE INVESTMENTS, LTD. AND A PORTION OF THAT CALLED 73.69 ACRE SAVE & EXCEPT TRACT AS DESCRIBED IN EXHIBIT A-1 OF SAID GENERAL WARRANTY DEED TO ANARENE INVESTMENTS, LTD., RECORDED IN VOLUME 2639, PAGE 418 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, SAID 73.69 ACRE SAVE & EXCEPT TRACT BEING A PORTION OF THAT CALLED 507.1 ACRE TRACT AS CONVEYED TO JOHN L. HILL BY DEED RECORDED IN VOLUME 212, PAGE 629 OF THE DEED RECORDS OF HAYS COUNTY, ALSO SAVE AND EXCEPT FROM SAID 1051.23 ACRE TRACT A CALLED 90,000 SQUARE FEET OF LAND AS CONVEYED TO DRIPPING SPRINGS INDEPENDENT SCHOOL DISTRICT BY DEED OF GIFT RECORDED IN VOLUME 1489, PAGE 61 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, BEING ALL OF THAT CALLED 29.78 ACRE TRACT AS CONVEYED TO ANARENE INVESTMENTS, LTD. BY GENERAL WARRANTY DEED RECORDED IN VOLUME 2639, PAGE 400 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, AND BEING ALL OF A CALLED 206.2 ACRE TRACT AS CONVEYED TO ANARENE INVESTMENTS, LTD. BY GENERAL WARRANTY DEED RECORDED IN VOLUME 2639, PAGE 403 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

BEGINNING at a 1/2-inch iron rod with cap stamp "BGE INC" set on the east right-of-way line of Ranch Road 12, (100' wide right-of-way), being the common most westerly corner of the above described Anarene Investments 1,051.23-acre tract and a called 21.126-acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 571, Page 307 of Real Property Records of Hays County, Texas, for the most westerly corner and **POINT OF BEGINNING** of the herein described tract, from which a 80-D nail found bears S 80°14'54" E a distance of 0.54 feet, and from which a concrete monument found on east right-of-way line of said Ranch Road 12 bears, S 14°28'39" W a distance of 350.43 feet;

THENCE, with the east right-of-way line of said Ranch Road 12 the following fourteen (14) courses:

1) N 14°28'39" E a distance of 1,624.68 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract at a point of curvature of a curve to the right;

2) Along said curve to the right an arc distance of 722.05 feet, having a radius of 2,896.00 feet, a central angle of 14°17'07" and a chord which bears N 21°49'46" E a distance of 720.18 feet to concrete monument found at the common most westerly south corner of said Anarene Investments 1,051.23-acre tract and the above described Hill 73.69-acre tract;

3) N 29°11'41" E a distance of 1,489.16 feet to a concrete monument found on the west line of said Hill 73.69-acre tract, at a point of curvature of a curve to the right;

4) Along said curve to the right an arc distance of 756.40 feet, having a radius of 1,861.00 feet, a central angle of 23°17'16" and a chord which bears N 40°49'43" E a distance of 751.20 feet to a concrete monument found on the west line of said Hill 73.69-acre tract;

5) N 52°28'45" E, pass a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found at the common most westerly north corner of said Hill 73.69-acre tract and said Anarene Investments 1,051.23-acre tract at a distance of 175.19 feet, and continuing on for a total distance of 415.50 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract, at a point of curvature of a curve to the left;

6) Along said curve to the left an arc distance of 576.84 feet, having a radius of 1,478.00 feet, a central angle of 22°21'42", and a chord which bears N 41°21'34" E a distance of 573.19 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract;

7) N 30°12'30" E a distance of 2,266.38 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract, at a point of curvature of a curve to the right;

8) Along said curve to the right an arc distance of 673.49 feet, having a radius of 1,096.00 feet, a central angle of 35°12'29", and a chord which bears N 47°48'39" E a distance of 662.94 feet to a concrete monument found (damaged) on the west line of said Anarene Investments 1,051.23-acre tract;

9) N 76°15'59" E a distance of 209.78 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract;

10) N 76°27'16" E a distance of 304.82 feet to a concrete monument found on the west line of said Anarene Investments 1,051.23-acre tract;

11) N 58°07'42" E a distance of 85.31 feet to a 5/8-inch iron rod found on the west line of said Anarene Investments 1,051.23-acre tract;

12) N 69°13'30" E a distance of 220.26 feet to a cotton spindle found in the northwest side of a 52" live oak, on the west line of said Anarene Investments 1,051.23-acre tract, from which a 1-1/2-inch iron pipe found bears N 09°17'07" W a distance of 0.64 feet;

13) N 74°01'48" E a distance of 195.37 feet to a 3/4-inch iron rod found on the west line of said Anarene Investments 1,051.23-acre tract, at a point of curvature of a curve to the left; and

14) Along said curve to the left an arc distance of 139.02 feet, having a radius of 1,979.86 feet, a central angle of 04°01'23", and a chord which bears N 59°58'27" E a distance of 138.99 feet to a 1-inch iron rod found on the west line of said Anarene Investments 1,051.23-acre tract, at the southwest corner of a called 0.112-acre tract as conveyed to Rella W. Brooks by deed recorded in Volume 224, Page 632 of the Deed Records of Hays County, Texas;

THENCE, leaving the east right-of-way line of said Ranch Road 12, with a north line of said Anarene Investments 1,051.23-acre tract, N 85°56'32" E a distance of 31.42 feet to a calculated point on the south line of said Rella Brooks 0.112-acre tract, at the approximate centerline of Barton Creek, for the most northerly corner of said Anarene Investments 1,051.23-acre tract, for the most northerly corner of the herein described tract;

THENCE, with the northerly and easterly lines said Anarene Investments 1,051.23-acre tract, along the approximate centerline of Barton Creek, the following twenty-one (21) courses:

1) S 54°06'53" E a distance of 416.52 feet to a calculated angle point;

2) S 43°31'40" E a distance of 320.98 feet to a calculated angle point;

3) S 71°33'35" E a distance of 162.29 feet to a calculated angle point;

4) S 80°15'23" E a distance of 359.62 feet to a calculated angle point;

5) N 89°12'39" E a distance of 268.06 feet to a calculated angle point;

6) N 71°48'37" E a distance of 226.20 feet to a calculated angle point;

7) N 75°52'56" E a distance of 471.86 feet to a calculated angle point;

8) S 76°44'48" E a distance of 149.76 feet to a calculated angle point;

9) S 51°55'11" E a distance of 99.32 feet to a calculated angle point;

10) S 31°00'27" E a distance of 192.83 feet to a calculated angle point;

11) S 04°33'09" E a distance of 253.81 feet to a calculated angle point;

12) S 08°46'56" W a distance of 358.50 feet to a calculated angle point;

13) S 15°06'53" W a distance of 362.97 feet to a calculated angle point;

14) S 27°05'38" W a distance of 330.40 feet to a calculated angle point;

15) S 44°01'50" W a distance of 364.58 feet to a calculated angle point;

16) S 23°23'55" W a distance of 114.84 feet to a calculated angle point;

17) S 12°27'30" W a distance of 299.12 feet to a calculated angle point;

18) S 07°06'56" W a distance of 132.91 feet to a calculated angle point;

19) S 10°50'48" E a distance of 166.36 feet to a calculated angle point;

20) S 24°03'53" E a distance of 134.10 feet to a calculated angle point; and

21) S 32°12'12" E a distance of 162.72 feet to a calculated point at inside corner of a called 46.53-acre tract as conveyed to Mary Taylor Henderson by general warranty deed with reservation of life estate recorded in Document No. 14038509 of the Official Public Records of Hays County, Texas, from which a 1-inch iron pipe found on the east bank of said Barton Creek bears, N 52°49'27" E a distance of 109.28 feet;

THENCE, leaving the approximate center line of said Barton Creek with a east line of said Anarene Investments 1,051.23-acre tract, S 55°46'32" W pass a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found on the west bank of said Barton Creek a distance of 31.68 feet and continuing on for a total distance of 276.23 feet to a 5/8-inch iron rod found at the most westerly southwest corner of said Henderson 46.53-acre tract, at an inside corner of said Anarene Investments 1,051.23-acre tract, for an inside corner of the herein described tract;

THENCE, generally along a fence, with a north line of said Anarene Investments 1,051.23-acre tract, S 61°20'17" E pass a 1/2-inch iron rod found at the common south corner of said Henderson 46.53-acre tract and a called 26.10-acre tract as conveyed to Virginia Taylor Buckley by Document No. 9921334 of the Official Public Records of Hays County, Texas, at a distance of 279.93 feet and continuing on for a total distance of 466.74 feet to a 1/2-inch iron rod found at an angle point in the south line of said Buckley 26.10-acre tract, for an angle point of the herein described tract;

THENCE, generally along a fence, continuing with a north line of said Anarene Investments 1,051.23-acre tract, S 57°09'59" E a distance of 511.67 feet to a 1/2-inch iron rod found at the south corner of said Buckley 26.10-acre tract, on a west line of a remainder of a called 1,364.31-acre tract as conveyed to Rathgeber Investment Company, Ltd. By special warranty deed with vendor's lien recorded in Document No. 04015659 of the Official Public Records of Hays County, Texas, at the most easterly corner of said Anarene Investments 1,051.23-acre tract, for the most easterly corner of the herein described tract;

THENCE, generally along a fence, with an east line of said Anarene Investments 1,051.23-acre tract and a west line of said Rathgeber Investment 1,364.31-acre remainder tract, S 28°53'40" W a distance of 4,426.46 feet to a 5/8-inch iron rod found at the north corner of a called 29.78-acre tract as conveyed to Anarene Investments. Ltd. by general warranty deed recorded in Volume 2639, Page 400 of the Official Public Records of Hays County, Texas, for an inside corner of the herein described tract;

THENCE, leaving the fenced east line of said Anarene Investments 1,051.23-acre tract, with the east line of said Anarene Investments 29.78-acre tract, S 30°03'24" E a distance of 931.08 feet to a 3/8-inch iron rod found with cap stamped "RPLS 4542" near a fence corner, on a west line of said Rathgeber Investment 1,364.31-acre remainder tract, at the north east corner of a called 291-1/3-acre tract as conveyed to Cynosure Corporation by deed recorded in Volume 258, Page 123 of the Deed Records of Hays County, Texas, for an outside corner of the herein described tract;

THENCE, leaving the west line of said Rathgeber Investment 1,364.31-acre remainder tract, generally along a fence, with the south line of said Anarene Investments 29.78-acre tract, S 60°08'25" W a distance of 1,550.88 feet to a 1/2-inch iron pipe found at the south corner of said Anarene Investments 29.78-acre tract, at the northeast corner of a called 206.2-acre tract as conveyed to Anarene Investments. Ltd. by general warranty deed recorded in Volume 2639, Page 403 of the Official Public Records of Hays County, Texas, being the northwest corner of said Cynosure Corporation 291-1/3-acre tract, for an inside corner of the herein described tract;

THENCE, generally along a fence, with the east line of said Anarene Investments 206.2-acre tract, S 25°43'41" E a distance of 46.72 feet to a 60-D nail found in the root of a dead tree, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 16°46'01" E a distance of 280.41 feet to a 60-D nail found in tree, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 16°48'27" E a distance of 182.38 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 05°13'03" W a distance of 104.30 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 03°37'02" E a distance of 55.04 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 13°33'24" W a distance of 70.61 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 06°06'34" W a distance of 154.54 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 05°52'30" W a distance of 263.33 feet to a disturbed 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 16°02'05" W a distance of 196.54 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 00°43'42" W a distance of 330.59 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 00°08'28" W a distance of 273.70 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 05°46'10" E a distance of 42.66 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 01°49'02" E a distance of 238.81 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 00°49'25" E a distance of 353.56 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the east line of said Anarene Investments 206.2-acre tract, S 00°12'27" E a distance of 706.00 feet to a 1-1/2-inch iron pipe found, on the west line of said Cynosure Corporation 291-1/3-acre tract, at the south east corner of said Anarene Investments 206.2-acre tract, being the northwest corner of a called 200-acre tract as conveyed to William R. Scott and Bessie E. Scott by deed recorded in Volume 717, Page 229 of the Deed Records of Hays County, Texas, for the most southerly corner of the herein described tract;

THENCE, generally along a fence, with the south line of said Anarene Investments 206.2-acre tract, N 88°40'21" W a distance of 482.13 feet to a 60-D nail found in a dead tree, for an angle point;

THENCE, generally along a fence, with the south line of said Anarene Investments 206.2-acre tract, N 86°02'12" W a distance of 425.10 feet to a 60-D nail found in a tree, for an angle point;

THENCE, generally along a fence, with the south line of said Anarene Investments 206.2-acre tract, N 85°57'22" W a distance of 589.22 feet to a 1/2-inch iron rod found on the north line of said Scott 200-acre tract, at the southeast corner of Lot 28, of the Replat of Lot 2E, Block C, Pound house Hills Section 2 as recorded in Document No. 17007517 of the Official Public Records of Hays County, Texas, for the most southerly southwest corner of the herein described tract, from which a 1-inch iron pipe found on the north line of said Scott 200-acre tract, at a angle point in the south line of said Lot 28 bears, N 85°57'56" W a distance 104.76 feet;

THENCE, generally along a fence, with the west line of said Anarene Investments 206.2-acre tract and the east line of said Replat of Lot 2E, Block C, Poundhouse Hills Section 2, N 36°39'47" W a distance of 483.70 feet to a 1/2-inch iron rod found, for an angle point;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 206.2-acre tract and the east line of said Replat of Lot 2E, Block C, Poundhouse Hills Section 2, N 36°33'08" W pass a 1/2-inch iron rod with cap stamped "4WARD BOUNDARY" at the south easterly terminus of Pecos River Crossing (60' wide right-of-way) as dedicated by said Replat of Lot 2E, Block C, Poundhouse Hills Section 2 at a distance of 581.20 feet, pass a 1/2-inch iron rod with cap stamped "4WARD BOUNDARY" at the north easterly terminus of said Pecos River Crossing at a distance of 641.20 feet and continuing on for a total distance of 778.20 feet to a 1/2" iron rod found at the northeast corner of Lot 35 of said Replat of Lot 2E, Block C, Poundhouse Hills Section 2, being the southeast corner of the remainder of a called 102.479-acre tract as conveyed to Taylor Morrison of Texas, Inc. by special warranty deed recorded in Doc. No. 14019631 of the Official Public Records of Hays County, Texas;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 206.2-acre tract and the east line of said Taylor Morrison 102.479-acre remainder tract, N 42°39'59" W pass a 1/2-inch iron rod with cap stamp "BGE INC" set at the south east corner of Founders Ridge, Section 2A, a subdivision as recorded in Document No. 17005751 of the Official Public Records of Hays County, Texas, being the south easterly terminus of Copper Canyon (60' wide right-of-way) as dedicated by said Founders Ridge, Section 2A at a distance of 1,466.18 feet, pass a 1/2-inch iron rod with cap stamp "BGE INC" set at the north easterly terminus of said Copper Canyon a distance of 1,526.18 feet, and continuing on for a total distance of 1,696.21 feet to a 1/2-inch iron rod found on the west line of said Founders Ridge, Section 2A;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 206.2-acre tract, and the east line of said Founders Ridge, Section 2A, N 42°57'34" W a distance of 763.97 feet to a 1/2-inch iron rod found;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 206.2-acre tract, and the east line of said Founders Ridge, Section 2A, and the east line of Founders Ridge, Section 1, a subdivision as recorded in Volume 18, Page 336 of the Plat Records of Hays County, N 42°27'07" W a distance of 437.18 feet to a 1/2-inch iron rod found at the northwest corner of said Anarene Investments 206.2-acre tract, at the northeast corner of Lot 3, Block A, of said Founders Ridge, Section 1, being on the south line of said Anarene Investments 1,051.23-acre tract, for an inside corner of the herein described tract;

THENCE, generally along a fence, with the south line of said Anarene Investments 1,051.23-acre tract, and the north line of said of said Founders Ridge, Section 1, S 89°37'16" W a distance of 133.08 feet to a 1/2-inch iron pipe found, for an angle point;

THENCE, generally along a fence, continuing with the south line of said Anarene Investments 1,051.23-acre tract, S 88°53'52" W a distance of 311.37 feet to a 3/4-inch iron bar found at the southwest corner of a called 12.22-acre tract as conveyed to J.F. Glosson, Jr. by deed recorded in Volume 207, Page 329 of the Deed Records of Hays County, Texas, at the most southerly southwest corner of said Anarene Investments 1,051.23-acre tract, for an outside corner of the herein described tract;

THENCE, generally along a fence, with a west line of said Anarene Investments 1,051.23-acre tract, and the east line of said J.F. Glosson, Jr. 12.22-acre tract, N 01°52'37" W a distance of 630.02 feet to a 3/4-inch iron rod found under a fence at the common east corner of said J.F. Glosson, Jr. 12.22-acre tract and a called 21.126-acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 571, Page 307 of Real Property Records of Hays County, Texas, for an outside corner of the herein described tract;

THENCE, generally along a fence, with a northerly line of said Anarene Investments 1,051.23-acre tract, and a southerly line of said D.S.I.S.D. 21.126-acre tract, N 75°23'13" E a distance of 295.08 feet to a 1/2-inch iron rod found, for an angle point;

THENCE, generally along a fence, continuing with a northerly line of said Anarene Investments 1,051.23-acre tract, and a southerly line of said D.S.I.S.D. 21.126-acre tract, N 65°41'55" E a distance of 427.16 feet to a disturbed 1/2-inch iron rod found at the most easterly south corner of said D.S.I.S.D. 21.126-acre tract, for an inside corner of the herein described tract;

THENCE, generally along a fence, with a west line of said Anarene Investments 1,051.23-acre tract, and an east line of said D.S.I.S.D. 21.126-acre tract, N 03°44'39" E a distance of 370.39 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the southwest corner of a 90,000-square foot tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 1489, Page 61 of Official Public Records of Hays County, Texas, for an outside corner of the herein described tract;

THENCE, leaving the fenced west line of said Anarene Investments 1,051.23-acre tract, crossing over and across said Anarene Investments 1,051.23-acre tract, with the south line of said D.S.I.S.D. 90,000 square foot tract, S 85°02'09" E a distance of 300.00 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the southeast corner of said D.S.I.S.D. 90,000 square foot tract, for an inside corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, with the east line of said D.S.I.S.D. 90,000 square foot tract, N 03°44'39" E a distance of 300.00 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the northeast corner of said D.S.I.S.D. 90,000 square foot tract, for an inside corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, with the north line of said D.S.I.S.D. 90,000 square foot tract, N 85°02'09" W, pass a 1/2-inch iron rod found in concrete near a fence corner at the common north corner of said D.S.I.S.D. 90,000 square foot tract and said D.S.I.S.D. 21.126-acre tract at a distance of 300.00 feet, and continuing on with the north line of said D.S.I.S.D. 21.126-acre tract and a south line of said Anarene Investments 1,051.23-acre tract for a total distance of 649.54 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the southeast corner of a called 0.138-acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by warranty deed recorded in Volume 626, Page 293 of the Real Property Records of Hays County, Texas, for an inside corner of the herein described tract, from which a 1/2-inch iron rod found at or near a fence corner bears, N 84°19'25" W a distance of 3.39 feet;

THENCE, with a west line of said Anarene Investments 1,051.23-acre tract, and the east line of said D.S.I.S.D. 0.138-acre tract, N 04°57'51" E a distance of 50.00 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at the northeast corner of said D.S.I.S.D. 0.138-acre tract, from which a 1/2-inch iron rod found at or near a fence corner bears, N 88°51'36" W a distance of 3.35 feet;

THENCE, with a south line of said Anarene Investments 1,051.23-acre tract, and a north line of said D.S.I.S.D. 0.138-acre tract, N 85°02'09" W a distance of 120.00 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set on the west line of said D.S.I.S.D. 21.126-acre tract, at the northwest corner of said D.S.I.S.D. 0.138-acre tract, from which a 1/2-inch iron rod found at or near a fence corner bears, N 89°05'52" W a distance of 3.40 feet;

THENCE, with a west line of said Anarene Investments 1,051.23-acre tract, and an east line of said D.S.I.S.D. 21.126-acre tract, N 04°57'51" E a distance of 39.82 feet to a 1/2-inch iron rod found near a fence corner, at an outside corner of said D.S.I.S.D. 21.126-acre tract;

THENCE, with a south line of said Anarene Investments 1,051.23-acre tract, and a north line of said D.S.I.S.D. 21.126-acre tract, N 85°02'09" W a distance of 418.62 feet to the **POINT OF BEGINNING.**

SAVE & EXCEPT THE FOLLOWING TRACT OF LAND:

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE PHILIP A. SMITH SURVEY NO. 26, ABSTRACT NO. 415, THE MARCUS D. RAPER SURVEY NO. 37, ABSTRACT NO. 394, THE ANTHONY G. DAVY SURVEY NO. 38, ABSTRACT NO. 148 AND THE EDWARD W. BROWN SURVEY NO. 136, ABSTRACT NO. 44, SITUATED IN HAYS COUNTY, TEXAS; BEING A PORTION OF A CALLED 1,051.23 ACRE TRACT AS DESCRIBED IN GENERAL WARRANTY DEED CONVEYED TO ANARENE INVESTMENTS, LTD. AND A PORTION OF THAT CALLED 73.69 ACRE SAVE & EXCEPT TRACT AS DESCRIBED IN EXHIBIT A-1 OF SAID GENERAL WARRANTY DEED TO ANARENE INVESTMENTS, LTD., RECORDED IN VOLUME 2639, PAGE 418 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, SAID 73.69 ACRE SAVE & EXCEPT TRACT BEING A PORTION OF THAT CALLED 507.1 ACRE TRACT AS CONVEYED TO JOHN L. HILL BY DEED RECORDED IN VOLUME 212, PAGE 629 OF THE DEED RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

COMMENCING for POINT OF REFERENCE at a 1/2-inch iron rod with cap stamp "BGE INC" set on the east right-of-way line of Ranch Road 12, (100' wide right-of-way), being the common most westerly corner of the above described Anarene Investments 1,051.23-acre tract and a called 21.126-acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 571, Page 307 of Real Property Records of Hays County, Texas; Thence, leaving the east right-of-way line of Ranch Road 12 and crossing over and across said Anarene Investments 1,051.23-acre tract, N 48°15'26" E a distance of 3,883.45 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for the most southerly corner and **POINT OF BEGINNING** of the herein described tract;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, N 62°25'51" W a distance of 365.40 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of curvature of a curve to the right;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, along said curve to the right, an arc distance of 233.67 feet, having a radius of 485.00 feet, a central angle of 27°36'16" and a chord which bears N 48°37'43" W a distance of 231.41 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract and crossing over and across the above described Hill 73.69-acre tract, N 34°49'35" W a distance of 267.91 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for a point of curvature of a curve to the left;

THENCE, continuing over and across said Hill 73.69-acre tract, along said curve to the left, an arc distance of 333.28 feet, having a radius of 1015.00 feet, a central angle of 18°48'48" and a chord which bears N 44°13'58" W a distance of 331.78 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at a point of reverse curvature;

THENCE, continuing over and across said Hill 73.69-acre tract, along said curve to the right, an arc distance of 38.55 feet, having a radius of 25.00 feet, a central angle of 88°20'36" and a chord which bears N 09°28'04" W a distance of 34.84 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency, for the most westerly corner of the herein described tract;

THENCE, continuing over and across said Hill 73.69-acre tract, N 34°42'14" E a distance of 612.89 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of curvature of a curve to the right;

THENCE, continuing over and across said Hill 73.69-acre tract and crossing over and across said Anarene Investments 1,051.23-acre tract, along said curve to the right, an arc distance of 168.56 feet, having a radius of 465.00 feet, a central angle of 20°46'10"and a chord which bears N 45°05'19" E a distance of 167.64 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, N 55°28'23" E a distance of 1,126.40 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for the most northerly corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, S 13°35'57" E a distance of 353.90 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for an angle point;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract, S 44°59'39" E a distance of 147.28 feet to a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found at the most northerly northeast corner of said Hill 73.69-acre tract;

THENCE, with a east line of said Hill 73.69-acre tract and a west line of said Anarene Investments 1,051.23-acre tract, S 13°46'47" E a distance of 413.12 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for the most easterly corner of the herein described tract, from which a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found at an angle point in the east line of said Hill 73.69-acre tract bears, S 13°46'47" E a distance of 192.95 feet;

THENCE, leaving the west line of said Anarene Investments 1,051.23-acre tract and crossing over and across said Hill 73.69-acre tract, S 88°54'34" W a distance of 262.83 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an interior corner of the herein described tract;

THENCE, continuing over and across said Hill 73.69-acre tract and crossing over and across said Anarene Investments 1,051.23-acre tract, S 02°39'33" E a distance of 903.84 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an exterior corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 1,051.23-acre tract and crossing over and across said Hill 73.69-acre tract, N 64°51'14" W a distance of 290.58 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an interior corner of the herein described tract;

THENCE, continuing over and across said Hill 73.69-acre tract and crossing over and across said Anarene Investments 1,051.23-acre tract, S 35°05'06" W a distance of 538.90 feet to the **POINT OF BEGINNING.**

The net acreage of the herein described tract of land contains 1,240.674 acres of land, more or less.

I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

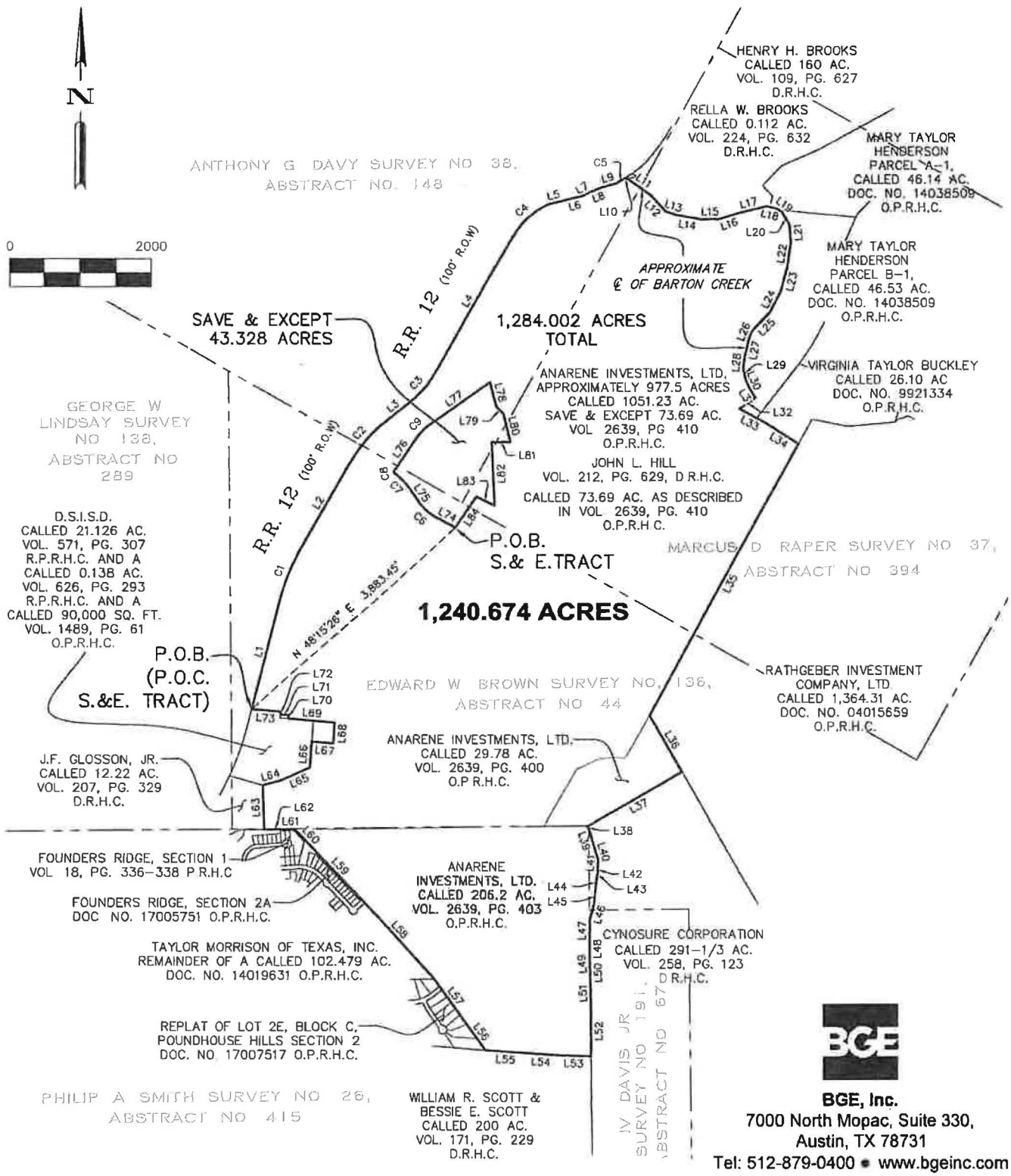
STATE OF TEXAS REGISTERED JONATHAN O. NOBLES 5777 PROFESSIONAL LAND SURVEYOR

Jonathan O. Nobles RPLS No. 5777
BGE, Inc.
7000 North Mopac, Suite 330
Austin, Texas 78731
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

11/19/2018
Date

Date: November 19, 2018
Project No.: 5955-00

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION



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Firm No. 10106502

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

LEGEND

D.R.H.C.	DEED RECORDS, HAYS COUNTY
O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
P.R.H.C.	PLAT RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
S.&E. TRACT	SAVE & EXCEPT TRACT

SCALE: 1"=2000'

SHEET 11

OF 12

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	N 14°28'39" E	1,624.68'
L2	N 29°11'41" E	1,489.16'
L3	N 52°28'45" E	415.50'
L4	N 30°12'30" E	2,266.38'
L5	N 76°15'59" E	209.78'
L6	N 76°27'16" E	304.82'
L7	N 58°07'42" E	85.31'
L8	N 69°13'30" E	220.26'
L9	N 74°01'48" E	195.37'
L10	N 85°56'32" E	31.42'
L11	S 54°06'53" E	416.52'
L12	S 43°31'40" E	320.98'
L13	S 71°33'35" E	162.29'
L14	S 80°15'23" E	359.62'
L15	N 89°12'39" E	268.06'
L16	N 71°48'37" E	226.20'
L17	N 75°52'56" E	471.86'
L18	S 76°44'48" E	149.76'
L19	S 51°55'11" E	99.32'
L20	S 31°00'27" E	192.83'
L21	S 04°33'09" E	253.81'
L22	S 08°46'56" W	358.50'
L23	S 15°06'53" W	362.97'
L24	S 27°05'38" W	330.40'
L25	S 44°01'50" W	364.58'
L26	S 23°23'55" W	114.84'
L27	S 12°27'30" W	299.12'
L28	S 07°06'56" W	132.91'

LINE TABLE		
NUMBER	BEARING	DISTANCE
L29	S 10°50'48" E	166.36'
L30	S 24°03'53" E	134.10'
L31	S 32°12'12" E	162.72'
L32	S 55°46'32" W	276.23'
L33	S 61°20'17" E	466.74'
L34	S 57°09'59" E	511.67'
L35	S 28°53'40" W	4,426.46'
L36	S 30°03'24" E	931.08'
L37	S 60°08'25" W	1,550.88'
L38	S 25°43'41" E	46.72'
L39	S 16°46'01" E	280.41'
L40	S 16°48'27" E	182.38'
L41	S 05°13'03" W	104.30'
L42	S 03°37'02" E	55.04'
L43	S 13°33'24" W	70.61'
L44	S 06°06'34" W	154.54'
L45	S 05°52'30" W	263.33'
L46	S 16°02'05" W	196.54'
L47	S 00°43'42" W	330.59'
L48	S 00°08'28" W	273.70'
L49	S 05°46'10" E	42.66'
L50	S 01°49'02" E	238.81'
L51	S 00°49'25" E	353.56'
L52	S 00°12'27" E	706.00'
L53	N 88°40'21" W	482.13'
L54	N 86°02'12" W	425.10'
L55	N 85°57'22" W	589.22'
L56	N 36°39'47" W	483.70'

LINE TABLE		
NUMBER	BEARING	DISTANCE
L57	N 36°33'08" W	778.20'
L58	N 42°39'59" W	1,696.21'
L59	N 42°57'34" W	763.97'
L60	N 42°27'07" W	437.18'
L61	S 89°37'16" W	133.08'
L62	S 88°53'52" W	311.37'
L63	N 01°52'37" W	630.02'
L64	N 75°23'13" E	295.08'
L65	N 65°41'55" E	427.16'
L66	N 03°44'39" E	370.39'
L67	S 85°02'09" E	300.00'
L68	N 03°44'39" E	300.00'
L69	N 85°02'09" W	649.54'
L70	N 04°57'51" E	50.00'
L71	N 85°02'09" W	120.00'
L72	N 04°57'51" E	39.82'
L73	N 85°02'09" W	418.62'
L74	N 62°25'51" W	365.40'
L75	N 34°49'35" W	267.91'
L76	N 34°42'14" E	612.89'
L77	N 55°28'23" E	1,126.40'
L78	S 13°35'57" E	353.90'
L79	S 44°59'39" E	147.28'
L80	S 13°46'47" E	413.12'
L81	S 88°54'34" W	262.83'
L82	S 02°39'33" E	903.84'
L83	N 64°51'14" W	290.58'
L84	S 35°05'06" W	538.90'

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	722.05'	2,896.00'	14°17'07"	N 21°49'46" E	720.18'
C2	756.40'	1,861.00'	23°17'16"	N 40°49'43" E	751.20'
C3	576.84'	1,478.00'	22°21'42"	N 41°21'34" E	573.19'
C4	673.49'	1,096.00'	35°12'29"	N 47°48'39" E	662.94'
C5	139.02'	1,979.86'	4°01'23"	N 59°58'27" E	138.99'
C6	233.67'	485.00'	27°36'16"	N 48°37'43" W	231.41'
C7	333.28'	1,015.00'	18°48'48"	N 44°13'58" W	331.78'
C8	38.55'	25.00'	88°20'36"	N 09°28'04" W	34.84'
C9	168.56'	465.00'	20°46'10"	N 45°05'19" E	167.64'

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TBPLS Licensed Surveying
Firm No. 10106502

SCALE: 1"=2000'

SHEET 12

OF 12

EXHIBIT A

DOUBLE L DEVELOPMENT, LLC
218.352 ACRES
JOB NO. 5955-00

DESCRIPTION OF A 218.352 ACRE TRACT OF LAND
HAYS COUNTY, TEXAS

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE GEORGE W. LINDSAY SURVEY NO. 138, ABSTRACT NO. 289 AND THE EDWARD W. BROWN SURVEY NO. 136, ABSTRACT NO. 44, SITUATED IN HAYS COUNTY, TEXAS; BEING A PORTION OF A CALLED 226.11 ACRE TRACT AND ALL OF A CALLED 17.80 ACRE TRACT DESCRIBED AS TRACTS 5 AND 6, RESPECTIVELY, AS CONVEYED TO ANARENE INVESTMENTS, LTD BY GENERAL WARRANTY DEED RECORDED IN VOLUME 2639, PAGE 420 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

BEGINNING at a TxDOT Type II Monument found on the westerly right-of-way line of Ranch Road 12 (right-of-way varies), at the most easterly corner of a called 64.2441 acre tract as conveyed to the City of Dripping Springs by instrument recorded in Volume 3326, Page 857 of the Official Public Records of Hays County, Texas, being on the south line of the above described Anarene Investments 226.11-acre tract, said monument being the northwest corner of a 0.126-acre right-of-way tract as conveyed to The State of Texas by instrument recorded in Volume 1089, Page 294 of the Official Public Records of Hays County, Texas, for the **POINT OF BEGINNING** of the herein described tract, from which a TxDOT Type II Monument found for reference bears S 19°17'01" W a distance of 315.35 feet;

THENCE, with the south line of said Anarene Investments 226.11-acre tract and the north line of said City of Dripping Springs 64.2441-acre tract, N 28°12'34" W a distance of 302.29 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the south corner of a called 25.7398 acre tract as conveyed to the City of Dripping Springs by instrument recorded in Volume 4467, Page 509 of the Official Public Records of Hays County, Texas, for an exterior corner of the herein described tract, from which a 1/2-inch iron rod found at an angle point on the south line of said City of Dripping Springs 25.7398-acre tract bears N 28°12'34" W a distance of 363.28 feet;

THENCE, generally along a fence, with the east line of said City of Dripping Springs 25.7398-acre tract, N 14°36'11" E a distance of 1,470.07 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the northeast corner of said City of Dripping Springs 25.7398-acre tract, for an interior corner of the herein described tract;

THENCE, generally along a fence, with the northeast line of said City of Dripping Springs 25.7398-acre tract, N 49°13'14" W a distance of 598.82 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the most northerly corner of said City of Dripping Springs 25.7398-acre tract, for an interior corner of the herein described tract;

THENCE, generally along a fence, with the northwest line of said City of Dripping Springs 25.7398-acre tract, S 45°59'38" W a distance of 1,153.28 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set on the north line of said City of Dripping Springs 64.2441-acre tract, at the west corner of said City of Dripping Springs 25.7398-acre tract, for an exterior corner of the herein described tract;

THENCE, generally along a fence, with the south line of said Anarene Investments 226.11-acre tract and the north line of said City of Dripping Springs 64.2441-acre tract, N 46°55'44" W a distance of 2,051.75 feet to a 1/2-inch iron rod found at the most northerly corner of said City of Dripping Springs 64.2441-acre tract, at the northeast corner of a called 62.03 acre tract as conveyed to Anne Elliece Davison and Glenn Travis Coode by instrument recorded in Document No. 17036564 of the Official Public Records of Hays County, Texas;

THENCE, generally along a fence, with the south line of said Anarene Investments 226.11-acre tract and the north line of said Davison-Coode 62.03-acre tract, N 46°51'16" W a distance of 1,500.80 feet to a 1/2-inch iron rod found on the east line of Lot 123-B, Resubdivision of Tract 123, Springlake, a subdivision as recorded in Book 9, Page 219 of the Plat Records of Hays County, Texas, at the northwest corner of said Davison-Coode 62.03-acre tract, being at the southwest corner of said Anarene Investments 226.11-acre tract, for the southwest corner of the herein described tract;

THENCE, generally along a fence, with the west line of said Anarene Investments 226.11-acre tract and the east line of said Lot 123-B, N 01°08'13" W a distance of 453.57 feet to a 1/2-inch iron rod found at the northeast corner of said Lot 123-B, being at the southeast corner of that certain 4.92-acre tract described as Tract 124, as conveyed to William and Penny Fairchild by instrument recorded in Volume 2598, Page 516 of the Official Public Records of Hays County, Texas;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 226.11-acre tract and the east line of said Fairchild 4.92-acre tract, N 01°07'53" W a distance of 460.08 feet to a 1/2-inch iron rod found at the northeast corner of said Fairchild 4.92-acre tract, at the southeast corner of Lot 125B-1, Replat of Tract 125A, B & C, Springlake, a subdivision as recorded in Volume 13, Page 388 of the Plat Records of Hays County, Texas;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 226.11-acre tract and the east line of said Lot 125B-1, N 00°54'14" W a distance of 336.16 feet to a 1/2-inch iron rod found at the northeast corner of said Lot 125B-1, at the southeast corner of that certain 5.00-acre tract described as Tract 126-A, as conveyed to Cary and Shara Meyers by instrument recorded in Volume 1056, Page 313 of the Official Public Records of Hays County, Texas;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 226.11-acre tract and with the east line of said Meyers 5.00-acre tract, N 00°45'39" W a distance of 332.73 feet to a 1/2-inch iron rod found at the northeast corner of said Meyers 5.00-acre tract, at the southeast corner of a called 3.898-acre tract as conveyed to Marc Lamoreaux by instrument recorded in Document No. 14029699 of the Official Public Records of Hays County, Texas;

THENCE, generally along a fence, continuing with the west line of said Anarene Investments 226.11-acre tract and with the east line of said Lamoreaux 3.898-acre tract, N 00°33'39" W a distance of 69.38 feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at the southwest corner of a called 8.487-acre tract as conveyed to Joe and Karen Thompson by instrument recorded in Document No. 9702850 of the Official Public Records of Hays County, Texas, at the northwest corner of said Anarene Investments 226.11-acre tract, for the northwest corner of the herein described tract;

THENCE, generally along a fence, with the north line of said Anarene Investments 226.11-acre tract the following six (6) courses:

1) With the south line of said Thompson 8.487-acre tract, S 60°44'38" E a distance of 415.44 feet to a 1/2-inch iron rod found at the southwest corner of a called 13.108-acre tract as conveyed to David and Gena Baley by instrument recorded in Volume 1113, Page 715 of the Official Public Records of Hays County, Texas;

2) With the south line of said Baley 13.108-acre tract, S 60°41'05" E a distance of 789.57 feet to a 1/2-inch iron rod found at the southwest corner of a called 15.00-acre tract as conveyed to William and Margaret Crews by instrument recorded in Document No. 03030453 of the Official Public Records of Hays County, Texas;

3) With the south line of said Crews 15.00-acre tract, S 60°42'09" E a distance of 955.59 feet to a 1/2-inch iron rod found at the southwest corner of a called 11.992-acre tract as conveyed to John Fuquay by instrument recorded in Volume 397, Page 100 of the Deed Records of Hays County, Texas;

4) With the south line of said Fuquay 11.992-acre tract, S 60°27'57" E a distance of 707.23 feet to a 1/2-inch iron rod found at the southwest corner of a called 8.356-acre tract as conveyed to Leon & Elin Tosse by instrument recorded in Document No. 80015038 of the Official Public Records of Hays County, Texas;

5) With the south line of said Tosse 8.356-acre tract, S 60°46'51" E a distance of 601.45 feet to a 1/2-inch iron rod found at the southwest corner of a called 4.83-acre tract as conveyed to Everett and Karen Valdez by instrument recorded in Volume 1018, Page 833 of the Official Public Records of Hays County, Texas; and

6) Partly with the south line of said Valdez 4.83-acre tract, S 60°36'41" E a distance of 1,333.96 feet to a 1/2-inch iron rod found at the southeast corner of a called 10.30-acre tract as conveyed to Jeff and Cyndi Bode by instrument recorded in Volume 1498, Page 335 of the Official Public Records of Hays County, Texas, at the most southerly southwest corner of said Anarene Investments 17.80-acre tract, for an interior corner of the herein described tract;

THENCE, generally along a fence, with the easterly line of said Bode 10.30-acre tract and the westerly line of said Anarene investments 17.80-acre tract, the following three (3) courses:

1) N 29°07'24" E a distance of 406.60 feet to a 1/2-inch iron rod found for corner;

2) N 63°03'43" W a distance of 425.17 feet to a 1/2-inch iron rod found for corner; and

3) N 29°12'20" E, pass a 1/2-inch iron rod found for reference at a distance of 385.21 feet and continuing on for a total distance of 410.41 feet to a calculated point at the center of a 50-foot wide road easement (known as Shelton Ranch Road) as referenced on Hannah Hill Subdivision plat, as recorded in Volume 7, Page 281, Plat Records of Hays County, Texas, on the south line of said Shelton Ranch Road Right-of-Way (30' right-of-way) as dedicated by said Hannah Hill subdivision plat, at the northwest corner of said Anarene Investments 17.80-acre tract, for an exterior corner of the herein described tract;

THENCE, along the center of said 50' road easement, with the northerly line of said Anarene Investments 17.80-acre tract and the southerly line of said Hannah Hill Subdivision right-of-way dedication, the following five (5) courses:

1) S 68°08'51" E a distance of 21.24 feet to a 60D nail found at a point of curvature of a curve to the left;

2) Along said curve to the left an arc distance of 192.46 feet, having a radius of 288.51 feet, a central angle of 38°13'14" and a chord which bears S 87°17'39" E a distance of 188.91 feet to a 60D nail found for corner;

3) N 73°35'59" E a distance of 544.90 feet to a 60D nail found at a point of curvature of a curve to the right;

4) Along said curve to the right an arc distance of 192.48 feet, having a radius of 278.91 feet, a central angle of 39°32'26" and a chord which bears S 86°37'44" E a distance of 188.68 feet to a 60D nail found for corner; and

5) S 66°58'50" E a distance of 109.09 feet to a calculated point at the intersection with the west right-of-way line of said Ranch Road 12, at the northeast corner of said Anarene Investments 17.80-acre tract, for the northeast corner of the herein described tract;

THENCE, with the east line of said Anarene Investments 17.80-acre tract and the west right-of-way line of said Ranch Road 12, along a curve to the left an arc distance of 22.14 feet, having a radius of 1961.00 feet, a central angle of 00°38'49" and a chord which bears S 29°30'17" W a distance of 22.14 feet to a TxDOT Type I concrete monument found for corner;

THENCE, continuing with the east line of said Anarene Investments 17.80-acre tract and the west right-of-way line of said Ranch Road 12, S 29°11'41" W, pass a 1-inch iron pipe found at the northeast corner of said Anarene Investments 226.11-acre tract at a distance of 1,349.20 feet, and continuing on for a total distance of 1,489.20 feet to a TxDOT Type I concrete monument found at a point of curvature of a curve to the left;

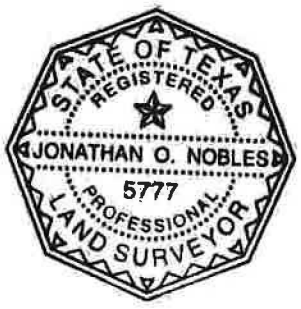
THENCE, continuing with the east line of said Anarene Investments 226.11-acre tract and the west right-of-way line of said Ranch Road 12, along said curve to the left an arc distance of 746.98 feet, having a radius of 2,996.00 feet, a central angle of 14°17'07", and a chord which bears S 21°50'01" W a distance of 745.05 feet to a TxDOT Type I concrete monument found for corner;

THENCE, continuing with the east line of said Anarene Investments 226.11-acre tract and the west right-of-way line of said Ranch Road 12, S 14°28'39" W a distance of 1,975.67 feet to a 1/2-inch iron rod set with cap stamped "BGE, Inc." at a point of curvature of a curve to the right, from which a TxDOT Type I concrete monument found for reference bears N 59°27'59" W a distance of 4.21 feet, also from which a TxDOT Type I concrete monument found on the east right-of-way line of said Ranch Road 12 bears S 75°30'33" E a distance of 100.00 feet;

THENCE, continuing with the east line of said Anarene Investments 226.11-acre tract and the west right-of-way line of said Ranch Road 12, along said curve to the right an arc distance of 98.26 feet, having a radius of 2,815.00 feet, a central angle of 02°00'00" and a chord which bears S 15°29'27" W a distance of 98.25 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for the southeast corner of the herein described tract;

THENCE, with the southerly line of said Anarene Investments 226.11-acre tract and a cut-back portion of the west right-of-way line of said Ranch Road 12, N 28°34'13" W a distance of 28.76 feet to the **POINT OF BEGINNING** and containing 218.352 acres of land, more or less.

I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

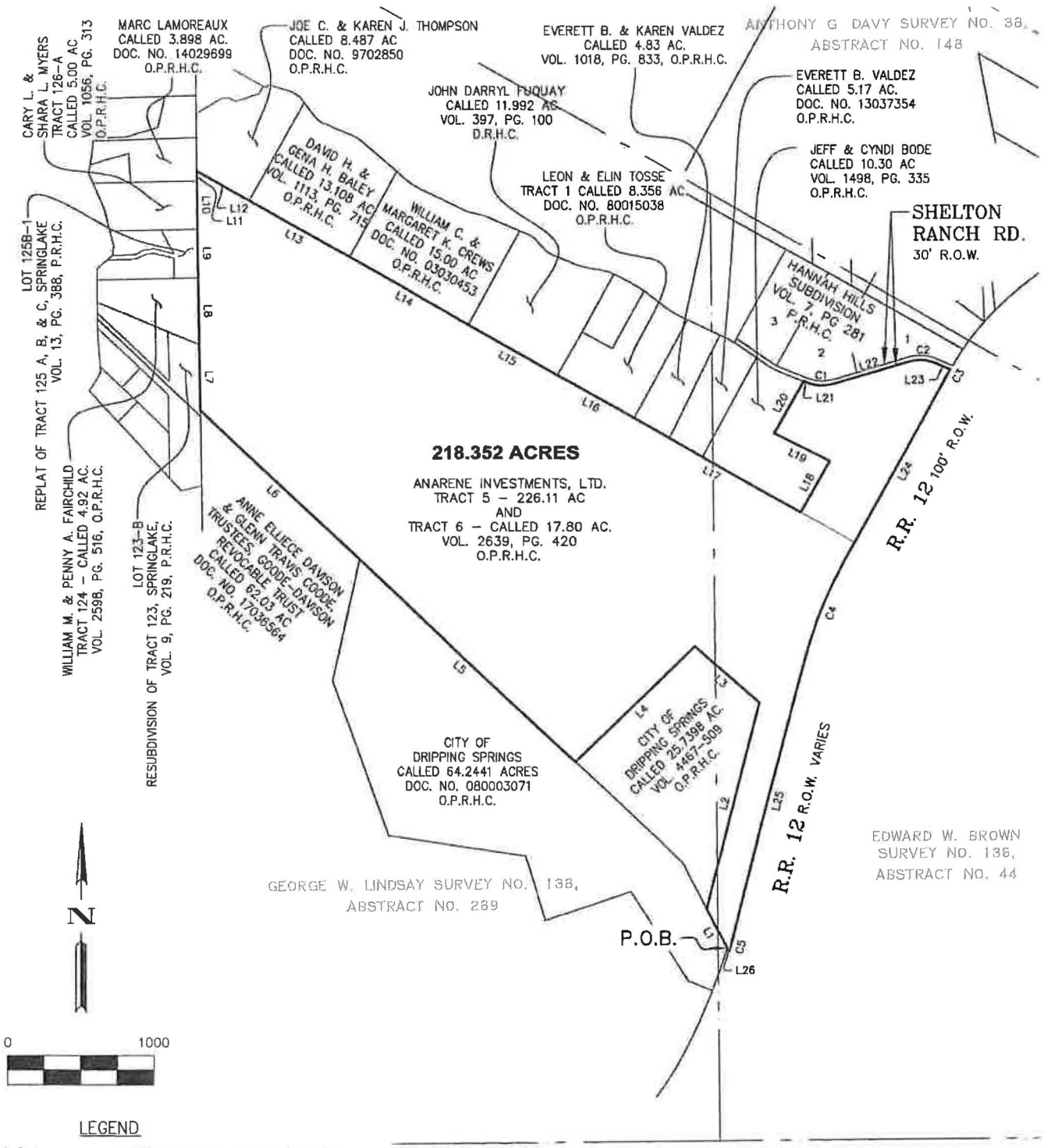


12/12/2018

Jonathan O. Nobles RPLS No. 5777 — Date
BGE, Inc.
7000 North Mopac, Suite 330
Austin, Texas 78731
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

Date: December 11, 2018
Project No.: 5955-00

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION



LEGEND

D.R.H.C.	DEED RECORDS, HAYS COUNTY
O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
P.R.H.C.	PLAT RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

BGE, Inc.
7000 North Mopac, Suite 330, Austin, TX 78731
Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying Firm No. 10106502

SCALE: 1"=1000'

SHEET 6 OF 7

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	N 28°12'34" W	302.29'
L2	N 14°36'11" E	1,470.07'
L3	N 49°13'14" W	598.82'
L4	S 45°59'38" W	1,153.28'
L5	N 46°55'44" W	2,051.75'
L6	N 46°51'16" W	1,500.80'
L7	N 01°08'13" W	453.57'
L8	N 01°07'53" W	460.08'
L9	N 00°54'14" W	336.16'
L10	N 00°45'39" W	332.73'
L11	N 00°33'39" W	69.38'
L12	S 60°44'38" E	415.44'
L13	S 60°41'05" E	789.57'

LINE TABLE		
NUMBER	BEARING	DISTANCE
L14	S 60°42'09" E	955.59'
L15	S 60°27'57" E	707.23'
L16	S 60°46'51" E	601.45'
L17	S 60°36'41" E	1,333.96'
L18	N 29°07'24" E	406.60'
L19	N 63°03'43" W	425.17'
L20	N 29°12'20" E	410.41'
L21	S 68°08'51" E	21.24'
L22	N 73°35'59" E	544.90'
L23	S 66°58'50" E	109.09'
L24	S 29°11'41" W	1,489.20'
L25	S 14°28'39" W	1,975.67'
L26	N 28°34'13" W	28.76'

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	192.46'	288.51'	38°13'14"	S 87°17'39" E	188.91'
C2	192.48'	278.91'	39°32'26"	S 86°37'44" E	188.68'
C3	22.14'	1,961.00'	0°38'49"	S 29°30'17" W	22.14'
C4	746.98'	2,996.00'	14°17'07"	S 21°50'01" W	745.05'
C5	98.26'	2,815.00'	2°00'00"	S 15°29'27" W	98.25'

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SCALE: 1"=1000'

SHEET 7 OF 7

EXHIBIT A

DOUBLE L DEVELOPMENT, LLC
43.328 ACRES
JOB NO. 5955-00

DESCRIPTION OF A 43.328 ACRE TRACT OF LAND
HAYS COUNTY, TEXAS

ALL THAT CERTAIN PARCEL OR TRACT OF LAND OUT OF THE PHILIP A. SMITH SURVEY NO. 26, ABSTRACT NO. 415, THE MARCUS D. RAPER SURVEY NO. 37, ABSTRACT NO. 394, THE ANTHONY G. DAVY SURVEY NO. 38, ABSTRACT NO. 148 AND THE EDWARD W. BROWN SURVEY NO. 136, ABSTRACT NO. 44, SITUATED IN HAYS COUNTY, TEXAS; BEING A PORTION OF A 977.54 ACRE TRACT AS DESCRIBED IN GENERAL WARRANTY DEED CONVEYED TO ANARENE INVESTMENTS, LTD. AS RECORDED IN VOLUME 2639, PAGE 410 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, AND BEING A PORTION OF A CALLED 67.776 ACRE TRACT AS DESCRIBED IN SPECIAL WARRANTY DEEDS CONVEYED TO ANARENE INVESTMENTS, LTD. AS RECORDED IN VOLUME 3958, PAGE 629 AND VOLUME 3958, PAGE 699, BOTH OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, AND BEING ALL OF THAT CALLED 2.304 ACRE TRACT AS DESCRIBED IN GENERAL WARRANTY DEED CONVEYED TO JOHN GRAHAM HILL AS RECORDED IN DOCUMENT NUMBER 05005107 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, AND BEING ALL OF THAT CALLED 2.30 ACRE TRACT AS DESCRIBED IN GENERAL WARRANTY DEED CONVEYED TO MELINDA HILL PERRIN AS RECORDED IN DOCUMENT NUMBER 80027016 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, AND BEING ALL OF THAT CALLED 1.31 ACRE TRACT AS DESCRIBED IN SPECIAL WARRANTY DEED CONVEYED TO JOHN GRAHAM HILL AND MELINDA HILL PERRIN AS RECORDED IN DOCUMENT NUMBER 16043631 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

COMMENCING for POINT OF REFERENCE at a 1/2-inch iron rod with cap stamp "BGE INC" set on the east right-of-way line of Ranch Road 12, (100' wide right-of-way), being the common most westerly corner of the above described Anarene Investments 977.54-acre tract and a called 21.126-acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 571, Page 307 of Real Property Records of Hays County, Texas, from which a 80-D nail found bears, S 80°14'54" E a distance of 0.54 feet, and from which a concrete monument found on east right-of-way line of said Ranch Road 12 bears, S 14°28'39" W a distance of 350.43 feet; Thence, leaving the east right-of-way line of Ranch Road 12 and crossing over and across said Anarene Investments 977.54-acre tract, N 48°15'26" E a distance of 3,883.45 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for the most southerly corner and **POINT OF BEGINNING** of the herein described tract;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract, N 62°25'51" W a distance of 365.40 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of curvature of a curve to the right;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract, along said curve to the right, an arc distance of 233.67 feet, having a radius of 485.00 feet, a central angle of 27°36'16" and a chord which bears N 48°37'43" W a distance of 231.41 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract and crossing over and across the above described Anarene Investments 67.776-acre tract, N 34°49'35" W a distance of 267.91 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for a point of curvature of a curve to the left;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract, along said curve to the left, an arc distance of 333.28 feet, having a radius of 1015.00 feet, a central angle of 18°48'48" and a chord which bears N 44°13'58" W a distance of 331.78 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set at a point of reverse curvature;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract, along said curve to the right, an arc distance of 38.55 feet, having a radius of 25.00 feet, a central angle of 88°20'36" and a chord which bears N 09°28'04" W a distance of 34.84 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency, for the most westerly corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract, N 34°42'14" E a distance of 612.89 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of curvature of a curve to the right;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract and crossing over and across said Anarene Investments 977.54-acre tract, along said curve to the right, an arc distance of 168.56 feet, having a radius of 465.00 feet, a central angle of 20°46'10"and a chord which bears N 45°05'19" E a distance of 167.64 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for a point of tangency;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract, N 55°28'23" E a distance of 1,126.40 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for the most northerly corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract, S 13°35'57" E a distance of 353.90 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set for an angle point;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract, S 44°59'39" E a distance of 147.28 feet to a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found at the most northerly northeast corner of said Anarene Investments 67.776-acre tract;

THENCE, with a east line of said Anarene Investments 67.776-acre tract and a west line of said Anarene Investments 977.54-acre tract, S 13°46'47" E a distance of 413.12 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for the most easterly corner of the herein described tract, from which a 5/8-inch iron rod with cap stamped "RPLS 3984 STAUDT SURVEY" found at an angle point in the east line of said Anarene Investments 67.776-acre tract bears, S 13°46'47" E a distance of 192.95 feet;

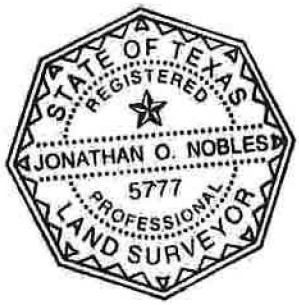
THENCE, leaving the west line of said Anarene Investments 977.54-acre tract and crossing over and across said Anarene Investments 67.776-acre tract, S 88°54'34" W a distance of 262.83 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an interior corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract and crossing over and across said Anarene Investments 977.54-acre tract, S 02°39'33" E a distance of 903.84 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an exterior corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 977.54-acre tract and crossing over and across said Anarene Investments 67.776-acre tract, N 64°51'14" W a distance of 290.58 feet to a 1/2-inch iron rod with cap stamp "BGE INC" set, for an interior corner of the herein described tract;

THENCE, continuing over and across said Anarene Investments 67.776-acre tract and crossing over and across said Anarene Investments 977.54-acre tract, S 35°05'06" W a distance of 538.90 feet to the **POINT OF BEGINNING** and containing 43.328 acres of land, more or less.

I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

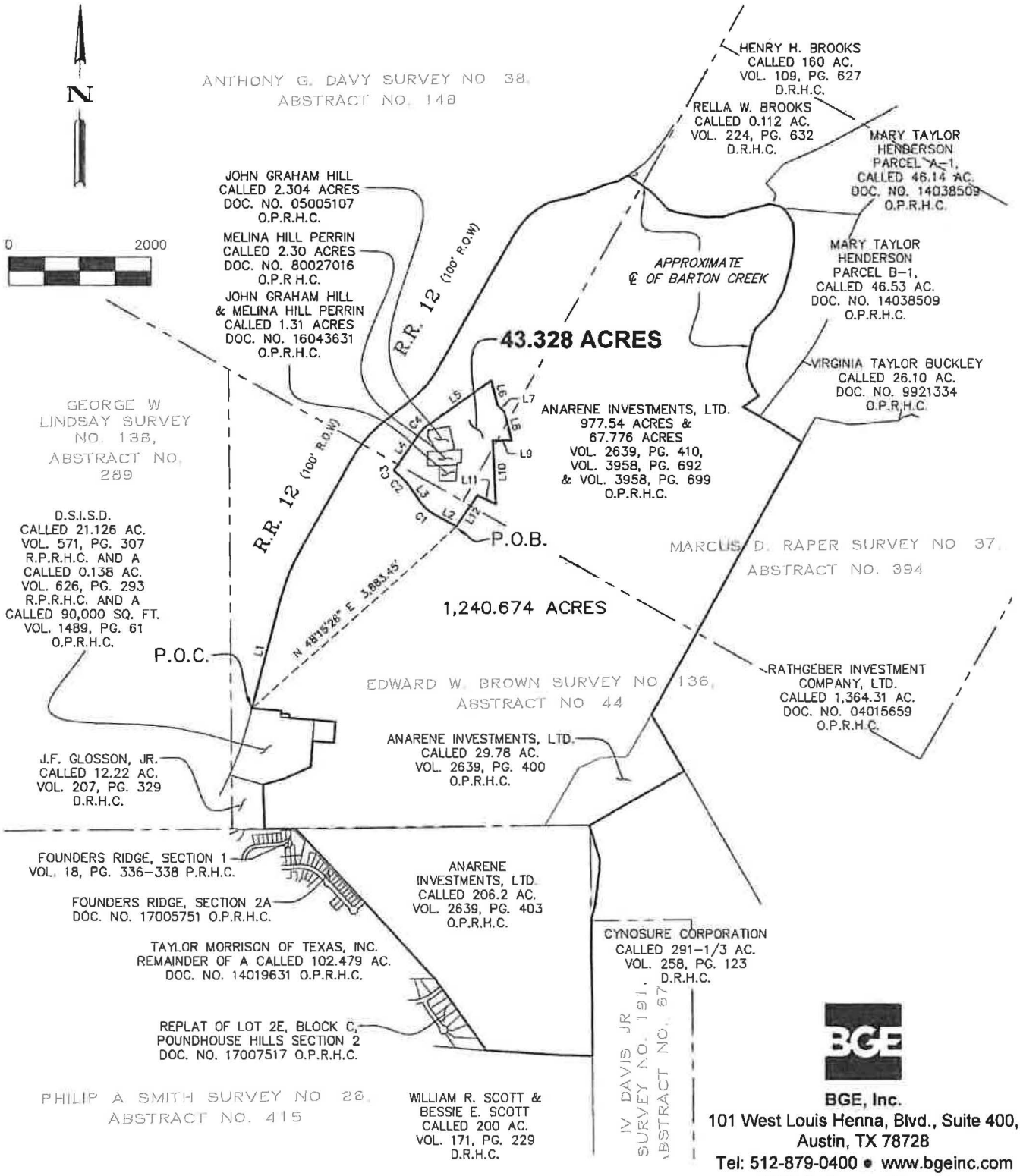


Jonathan O. Nobles RPLS No. 5777
BGE, Inc.
7000 North Mopac, Suite 330
Austin, Texas 78731
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

8/30/2019
Date

Date: November 19, 2018
Revised: August 30, 2019
Project No.: 5955-00

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION



BGE, Inc.
101 West Louis Henna, Blvd., Suite 400,
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPLS Licensed Surveying
Firm No. 10106502

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

LEGEND

D.R.H.C.	DEED RECORDS, HAYS COUNTY
O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
P.R.H.C.	PLAT RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT

SCALE: 1"=2000'

SHEET 4

OF 5

EXHIBIT TO ACCOMPANY LEGAL DESCRIPTION

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	N 14°28'39" E	1,624.68'
L2	N 62°25'51" W	365.40'
L3	N 34°49'35" W	267.91'
L4	N 34°42'14" E	612.89'
L5	N 55°28'23" E	1,126.40'
L6	S 13°35'57" E	353.90'
L7	S 44°59'39" E	147.28'
L8	S 13°46'47" E	413.12'
L9	S 88°54'34" W	262.83'
L10	S 02°39'33" E	903.84'
L11	N 64°51'14" W	290.58'
L12	S 35°05'06" W	538.90'

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	233.67'	485.00'	27°36'16"	N 48°37'43" W	231.41'
C2	333.28'	1,015.00'	18°48'48"	N 44°13'58" W	331.78'
C3	38.55'	25.00'	88°20'36"	N 09°28'04" W	34.84'
C4	168.56'	465.00'	20°46'10"	N 45°05'19" E	167.64'

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101 West Louis Henns Blvd., Suite 400,
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Firm No. 10106502

SCALE: 1"=2000'

SHEET 5

OF 5

EXHIBIT **A-1**

DRIPPING SPINGS I.S.D.
89,980 SQ. FT.
JOB NO. 7540-00

METES & BOUNDS DESCRIPTION

FIELD NOTES FOR A 89,980 SQUARE FOOT (2.066 ACRES) TRACT OF LAND OUT OF THE EDWARD W. BROWN SURVEY NO. 136, ABSTRACT NO. 44, SITUATED IN HAYS COUNTY, TEXAS; BEING ALL OF THAT CALLED 90,000 SQUARE FOOT TRACT CONVEYED TO DRIPPING SPRINGS INDEPENDENT SCHOOL DISTRICT BY DEED OF GIFT RECORDED IN VOLUME 1489, PAGE 61 OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS; AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND AS SHOWN ON THE ATTACHED SKETCH:

BEGINNING at a 1/2-inch iron rod in concrete found on a southerly line of a called 223.556 acre tract as conveyed to Double L Development, LLC by special warranty deed recorded in Document Number 19035343 of the Official Public Records of Hays County, Texas, at the most easterly northeast corner of a called 21.126 acre tract as conveyed to Dripping Springs Independent School District (D.S.I.S.D.) by deed of gift recorded in Volume 571, Page 307 of Real Property Records of Hays County, Texas, being the northwest corner of the above described D.S.I.S.D. 90,000-square foot tract, for the northwest corner and **POINT OF BEGINNING** of the herein described tract, from which a 1/2-inch iron rod found at the most easterly southeast corner of said D.S.I.S.D. 21.126-acre tract bears S 03°44'39" W a distance of 670.39 feet;

THENCE, with the southerly line of said Double L Development, LLC, 223.556-acre tract, and the north line of said D.S.I.S.D. 90,000-square foot tract, S 85° 02' 09" E for a distance of 300.00 feet to a 1/2-inch iron rod w/cap stamped "BGE INC" set at a southerly corner of said Double L Development, LLC, 223.556-acre tract, for the northeast corner of the herein described tract.

THENCE, leaving the southerly line of said Double L Development, LLC, 223.556-acre tract, with a westerly line of the remainder of a called 1,240.674 acre tract as conveyed to LL Ranch Investments, LP by special warranty deed recorded in Document Number 19035342 of the Official Public Records of Hays County, Texas, and the east line of said D.S.I.S.D. 90,000-square foot tract, S 03° 44' 39" W for a distance of 300.00 feet to a 1/2-inch iron rod w/cap stamped "BGE INC" set for the southeast corner of the herein described tract.

THENCE, with a northerly line of said LL Ranch Investments, LP 1,240.674-acre remainder tract, and the south line of said D.S.I.S.D. 90,000-square foot tract, N 85° 02' 09" W for a distance of 300.00 feet to a 1/2-inch iron rod w/cap stamped "BGE INC" set on the east line of said D.S.I.S.D. 21.126-acre tract for the southwest corner of the herein described tract.

THENCE, with east line of said D.S.I.S.D. 21.126-acre tract, and west line of said D.S.I.S.D. 90,000-square foot tract, N 03° 44' 39" E a distance of 300.00 feet to the **POINT OF BEGINNING** and containing 89,980 square feet (2.066 acres) of land, more or less.

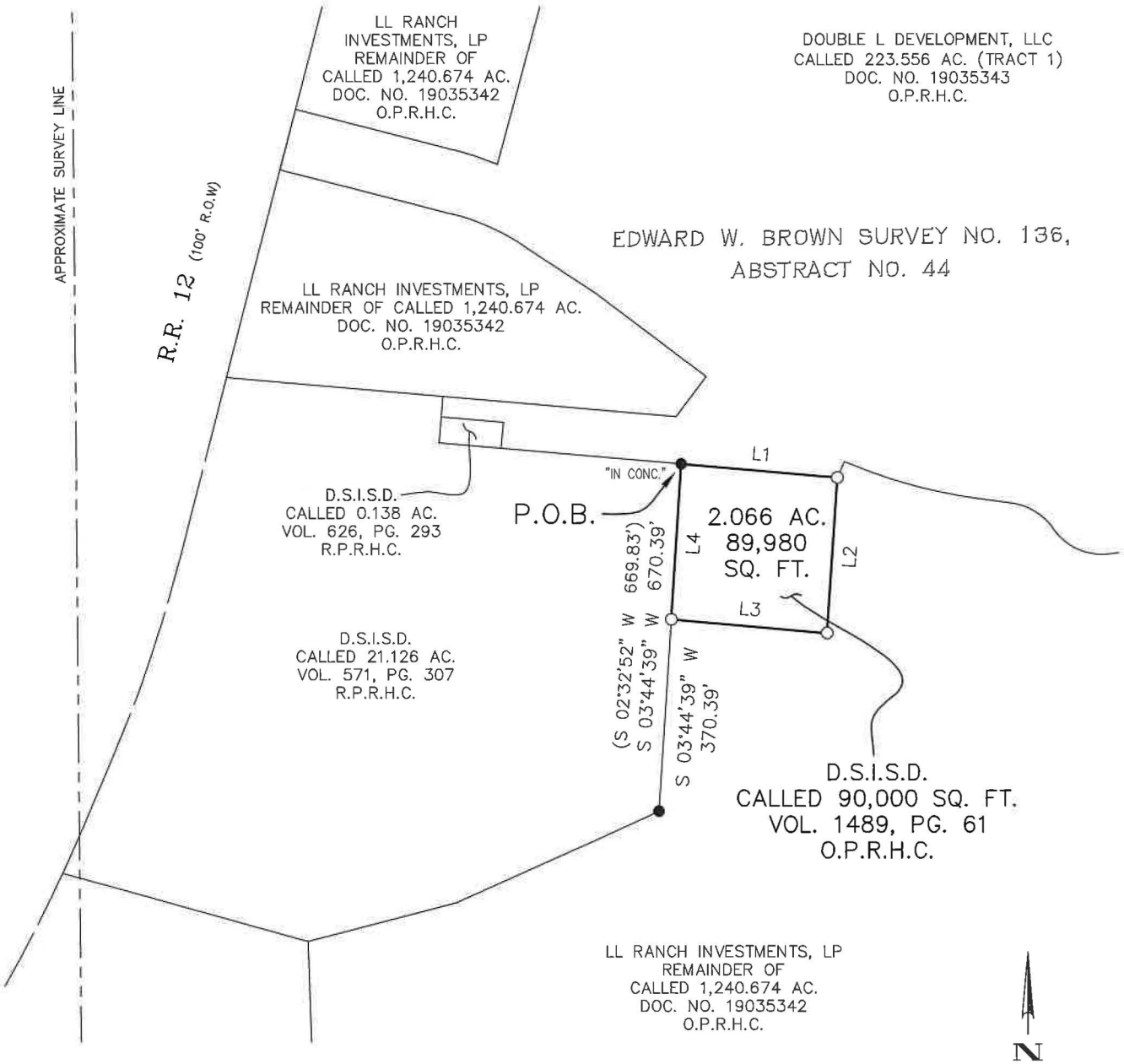
I hereby certify that these notes were prepared by BGE from a survey made on the ground on September 10, 2018 under my supervision and are true and correct to the best of my knowledge. Bearing orientation is based on the Texas State Plane Coordinate System, South Central Zone, NAD 83.

Jonathan O. Nobles RPLS No. 5777
BGE, Inc.
101 West Louis Henna Blvd., Suite 400
Austin, Texas 78728
Telephone: (512) 879-0400
TBPLS Licensed Surveying Firm No. 10106502

05/06/2021
Date

Date: May 6, 2021
Project No.: 7540-00

SKETCH TO ACCOMPANY LEGAL DESCRIPTION



LEGEND

O.P.R.H.C.	OFFICIAL PUBLIC RECORDS, HAYS COUNTY
R.P.R.H.C.	REAL PROPERTY RECORDS, HAYS COUNTY
P.O.B.	POINT OF BEGINNING
( )	RECORD INFORMATION VOL. 571, PG. 307 & VOL. 1489, PG. 61
●	FOUND 1/2-INCH IRON ROD
O	SET 1/2-INCH IRON ROD W/CAP STAMPED "BGE INC"

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	S 85°02'09" E	300.00'
	(S 86°13'48" E)	(300.00')
L2	S 03°44'39" W	300.00'
	(S 02°32'52" W)	(300.00')
L3	N 85°02'09" W	300.00'
	(N 86°13'48" W)	(300.00')
L4	N 03°44'39" E	300.00'

BEARING BASIS NOTE:

HORIZONTAL DATUM BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, NAD83, TEXAS SOUTH CENTRAL ZONE. COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES. COMBINED SCALE FACTOR IS 0.9999320997.

BGE, Inc.
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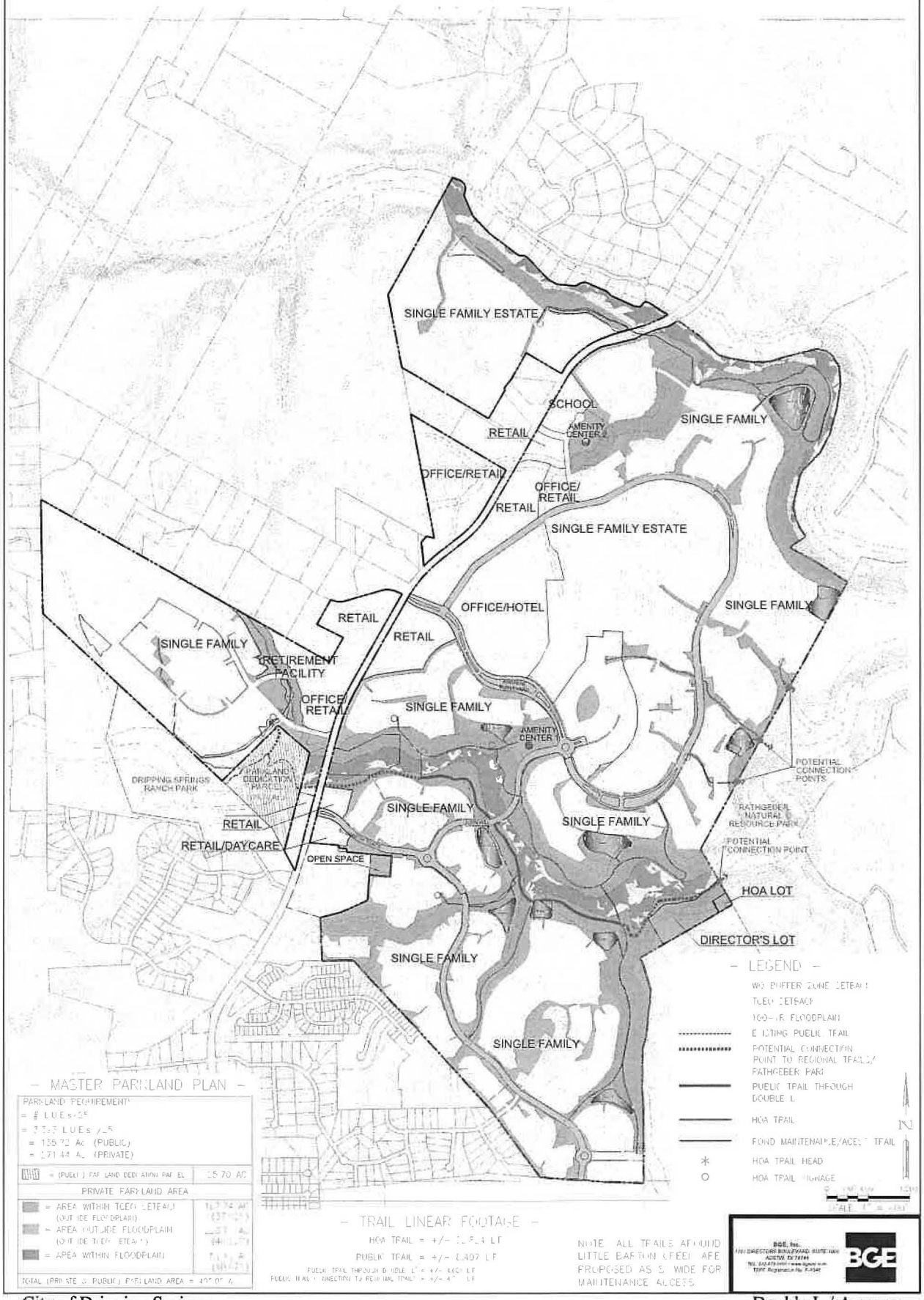
TBPELS Licensed Surveying Firm No. 10106502

SCALE: 1"300'
SHEET 3
OF 3

DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

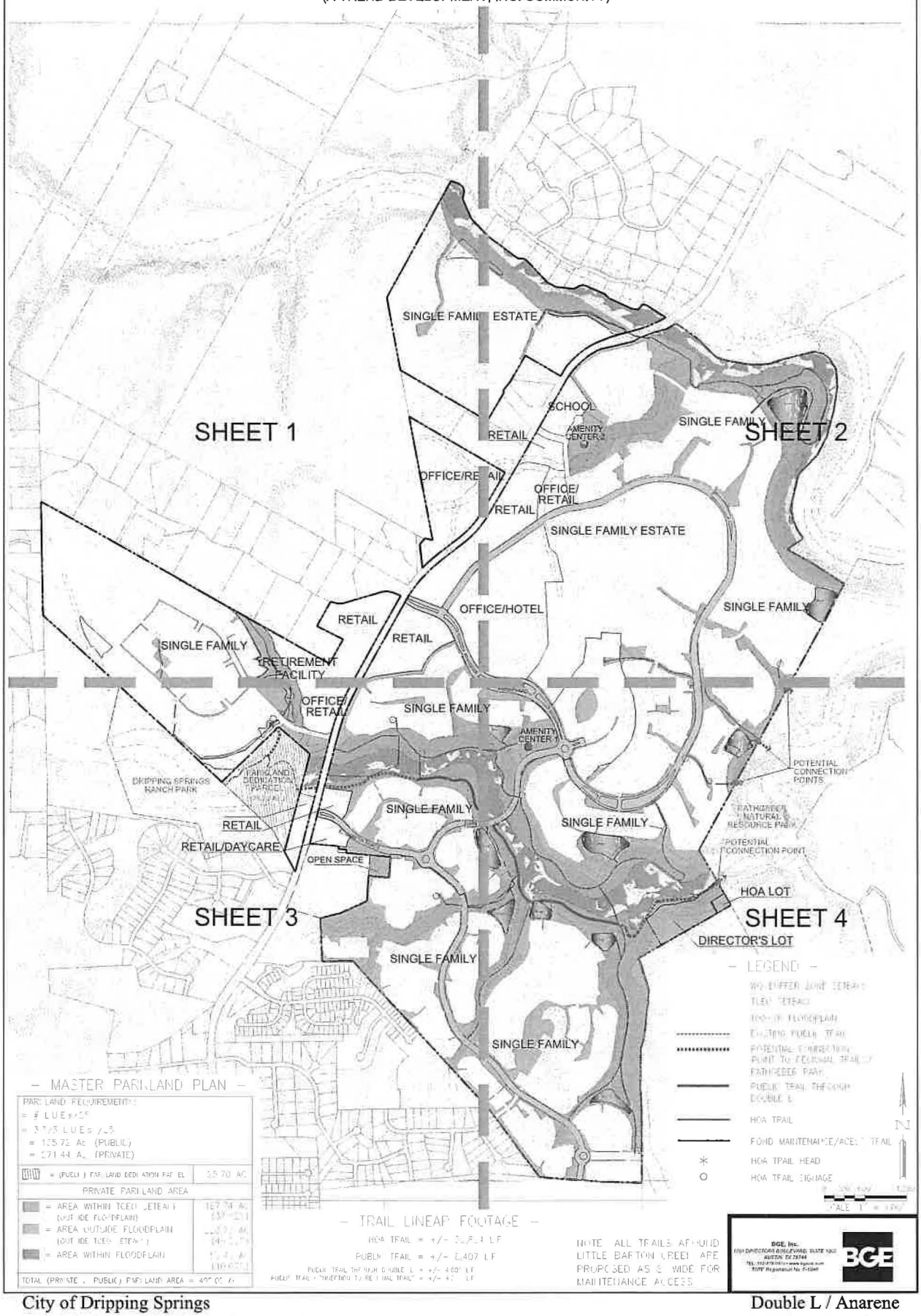
(A TREND DEVELOPMENT, INC. COMMUNITY)



DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

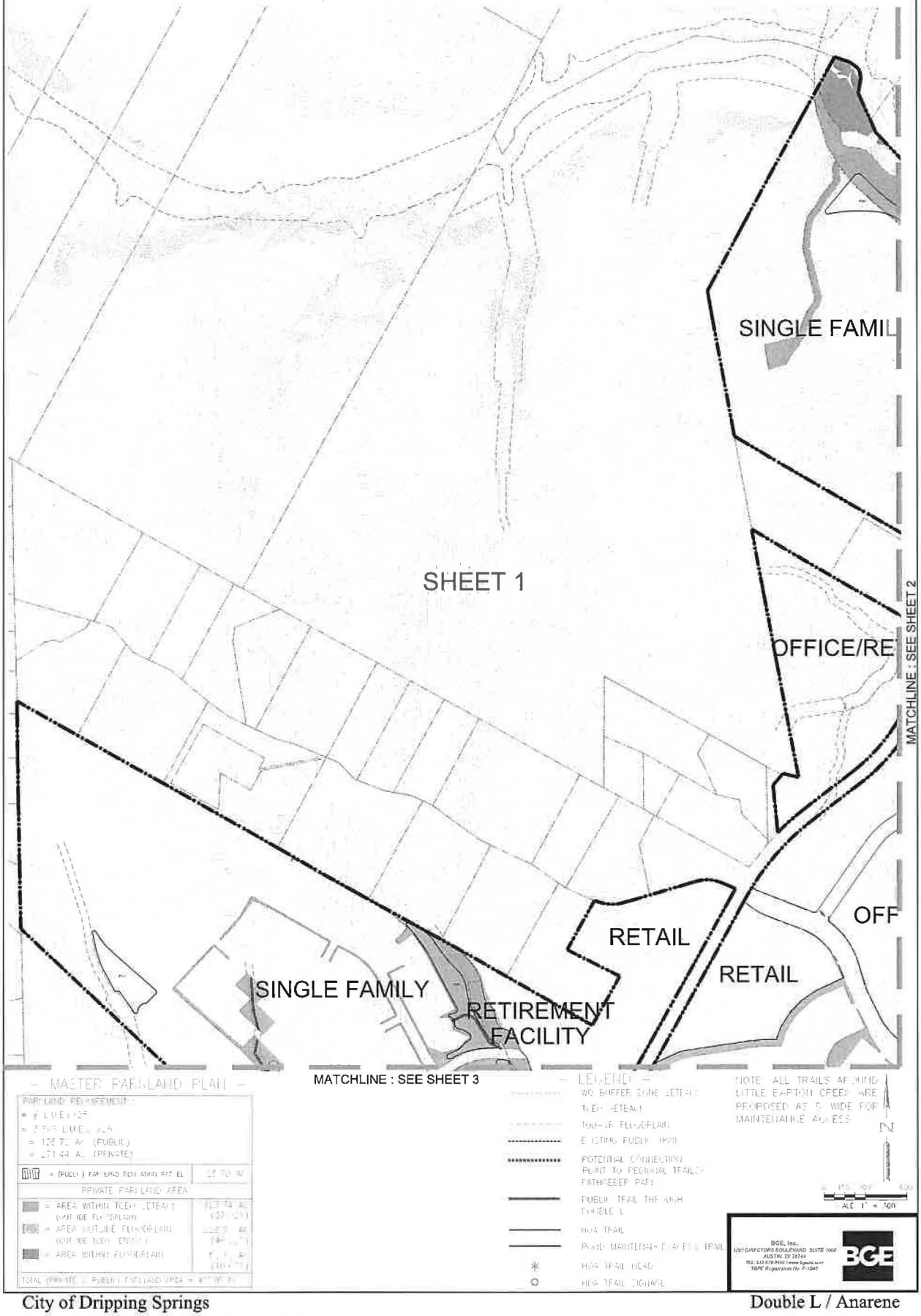
(A TREND DEVELOPMENT, INC. COMMUNITY)



DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

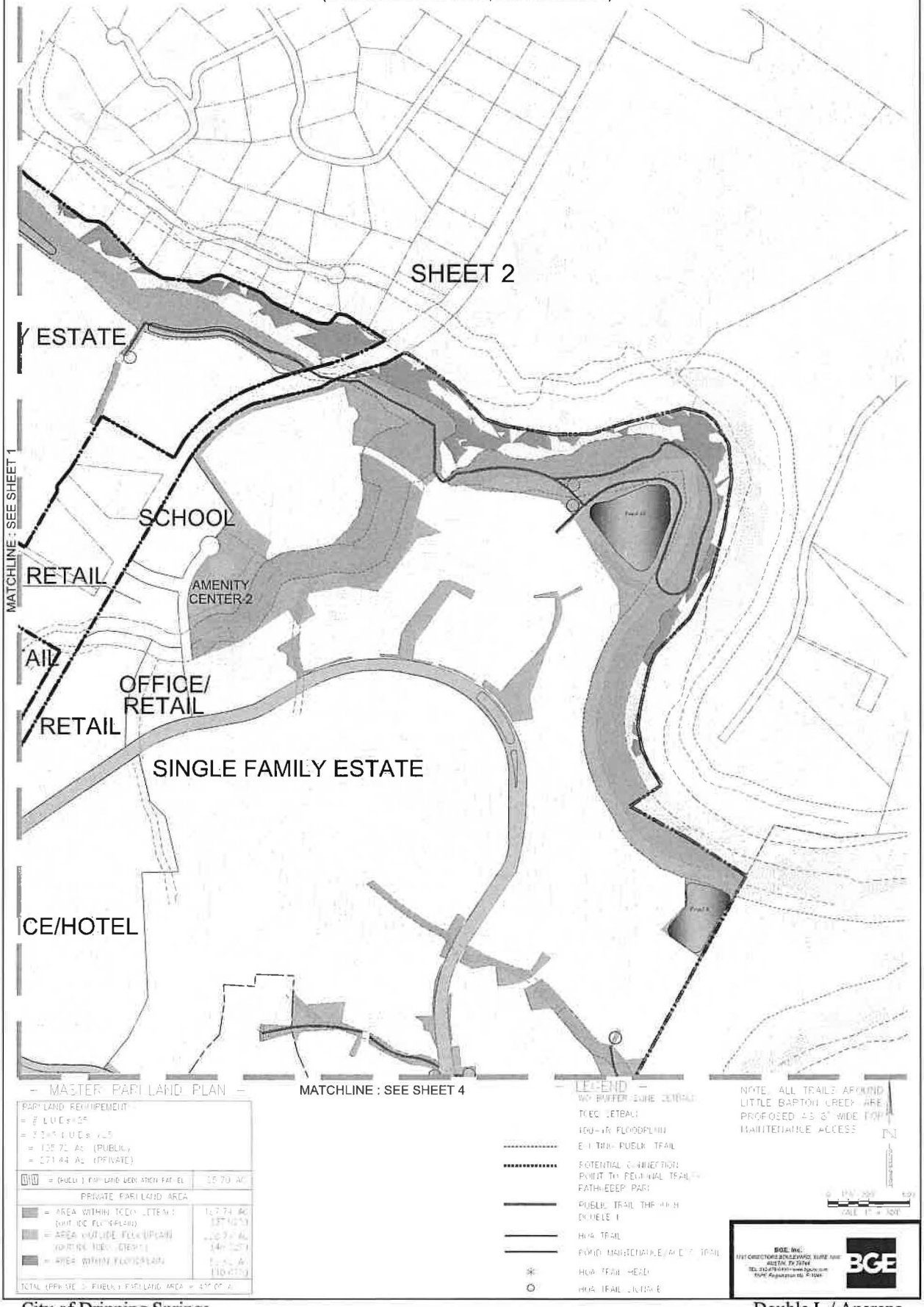
(A TREND DEVELOPMENT, INC. COMMUNITY)



DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

(A TREND DEVELOPMENT, INC. COMMUNITY)



DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

(A TREND DEVELOPMENT, INC. COMMUNITY)

DOUBLE 'L' - EXHIBIT B

MASTER PARKLAND EXHIBIT

(A TREND DEVELOPMENT, INC. COMMUNITY)

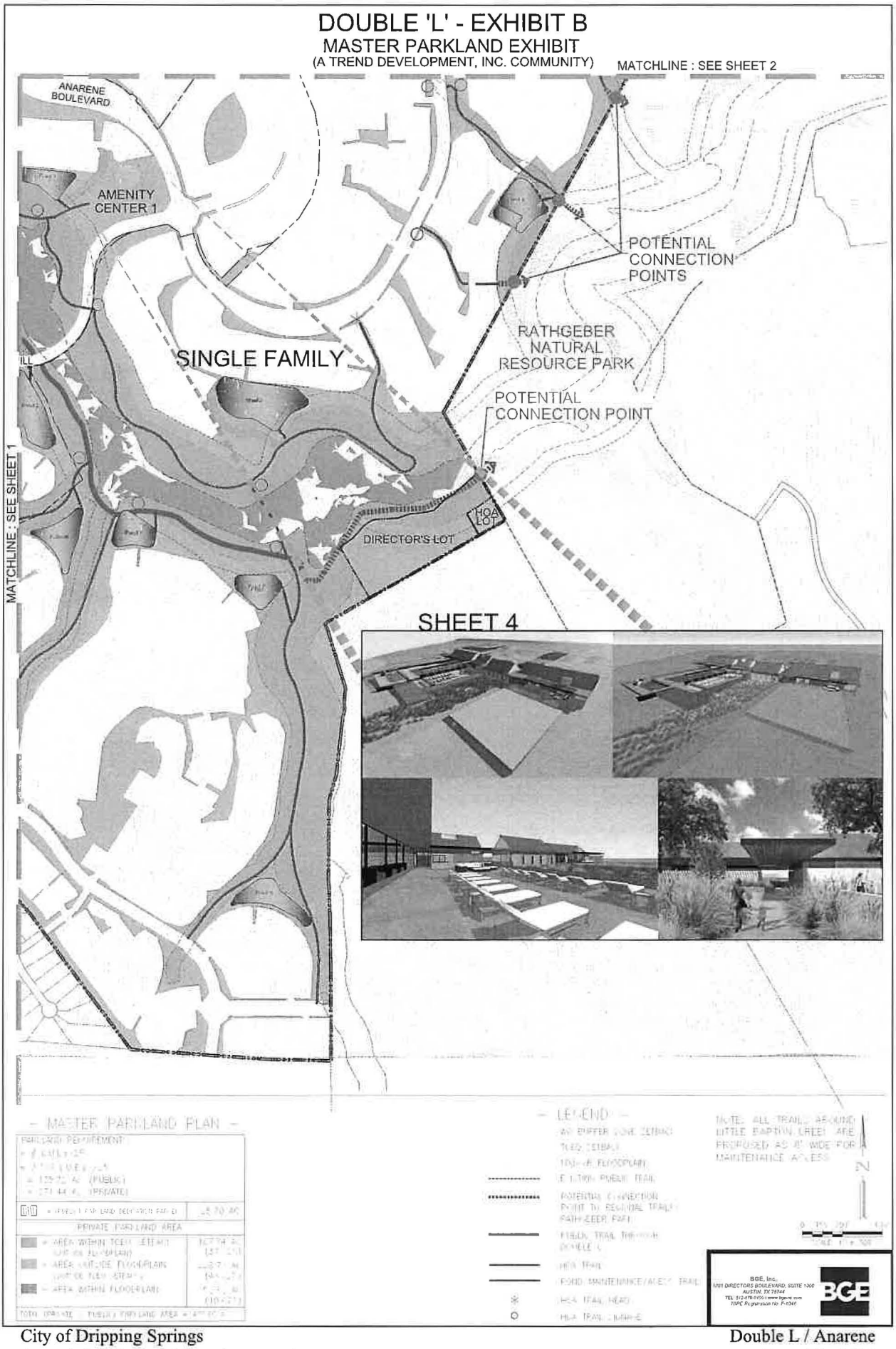
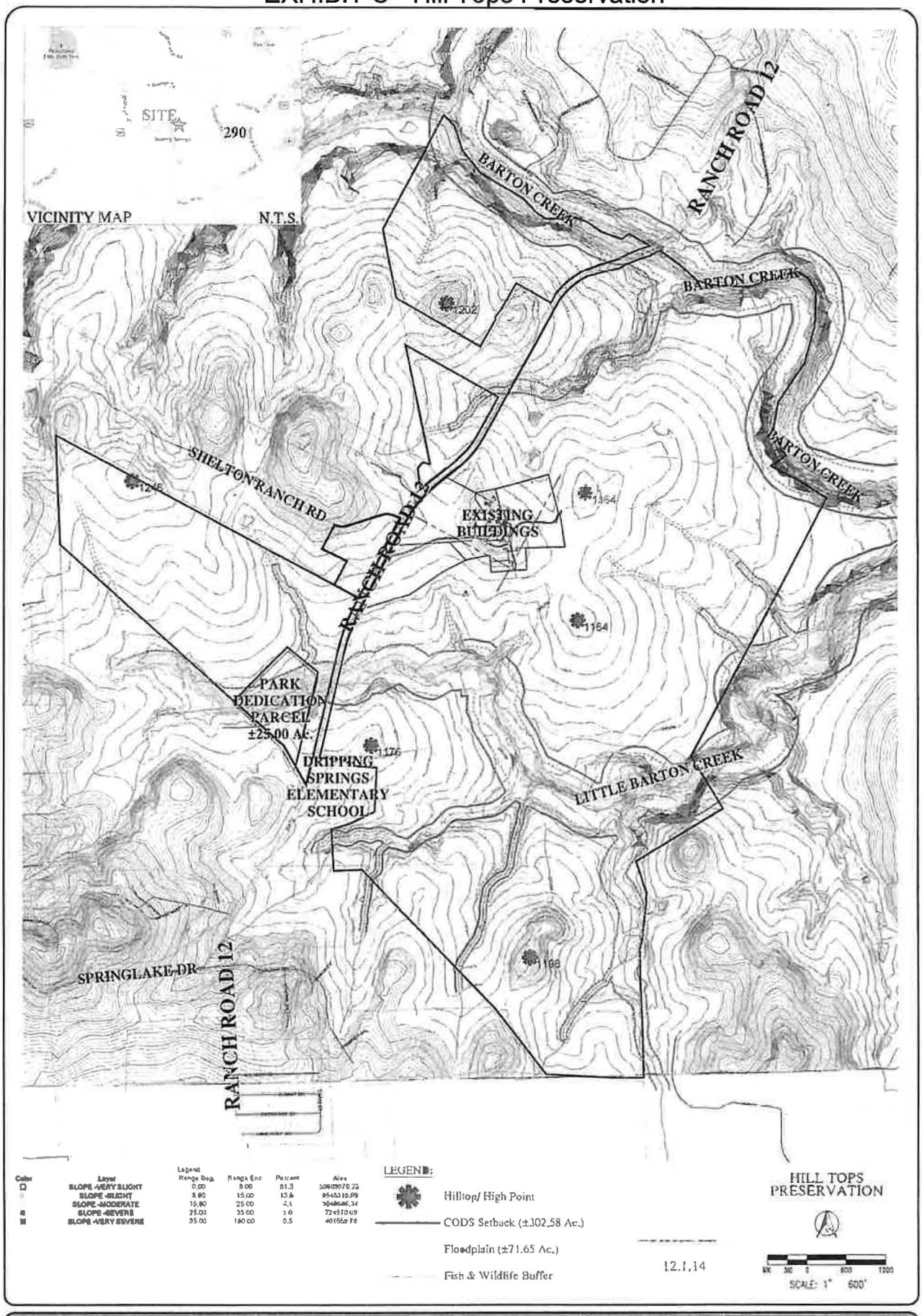


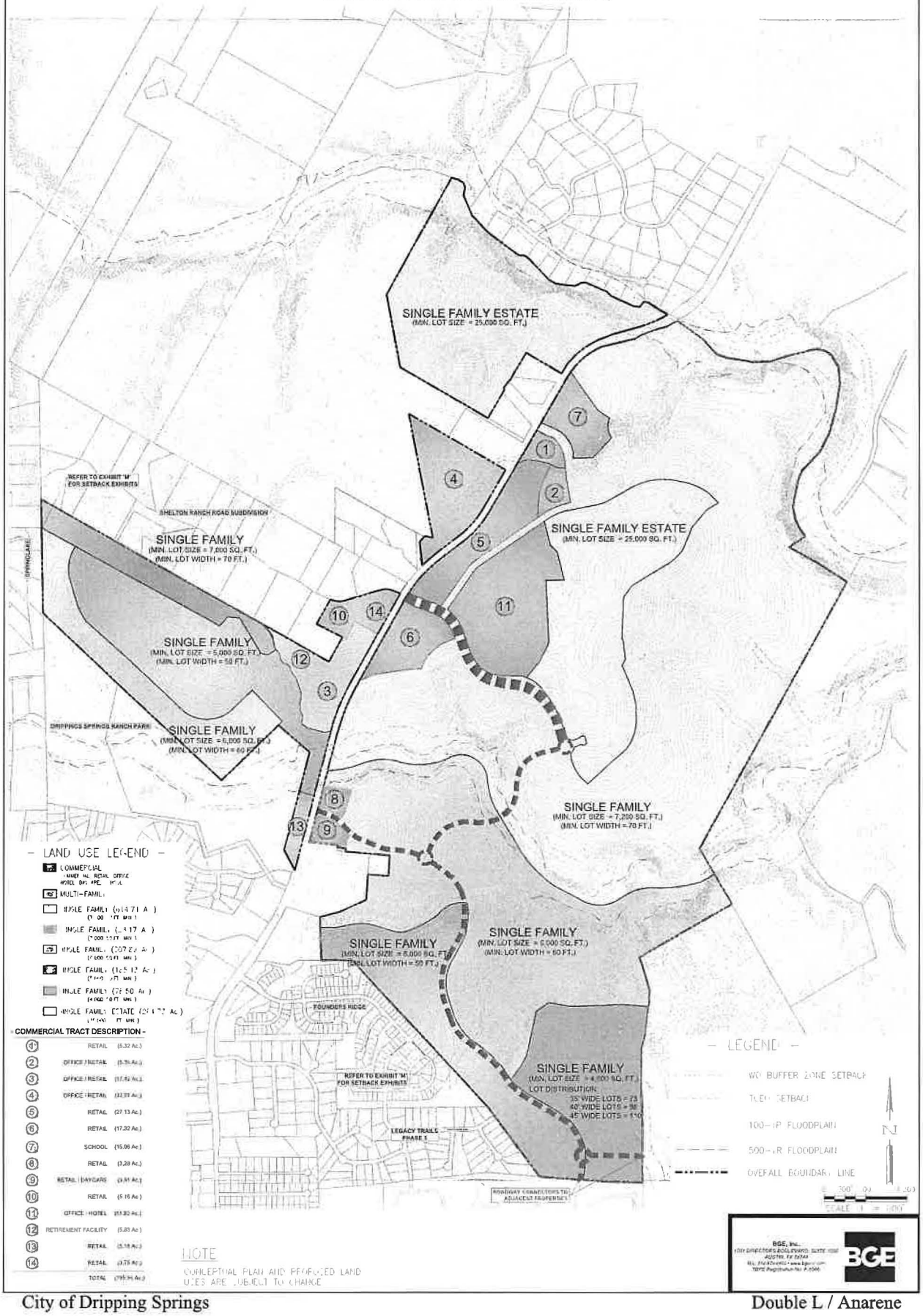
EXHIBIT C - Hill Tops Preservation



DOUBLE 'L' - EXHIBIT D

CONCEPTUAL MASTER PLAN

(A TREND DEVELOPMENT, INC. COMMUNITY)



NOTE

CONCEPTUAL PLAN AND PROPOSED LAND USES ARE SUBJECT TO CHANGE

EXHIBIT E

Code Section *(Ordinance)*	**Summary**	**Modification**
City of Dripping Springs Code of Ordinances currently in effect, 2021		
Chapter 22	**General Regulations**	
22.05.014(c) *(3500.11, §4, adopted 2/20/07)*	Hazardous Material Traps (HMT) required on roads with 5,000+ VPD	Eliminate this requirement. HMT requirements will be per TCEQ RG-348 Appendix A Optional Enhanced Measures.
22.05.015 *(3500.11, §5, adopted 2/20/07)*	Performance Standards for Water Quality BMP's	Eliminate and substitute with comply with TCEQ RG-348 Appendix A Optional Enhanced Measures.
22.05.016(a)(2) *(3500.11, §6, adopted 2/20/07)*	Maximum Impervious Cover	Maximum impervious cover for all site development plans within the Edwards Aquifer will be as tabulated in Section 3.1.4 of the Agreement. The overall project impervious cover to be 35% maximum.
22.05.016(c) *(3500.11, §6, adopted 2/20/07)*	The following are IC: (6) Swimming pool surface area.	Modify (6) to Swimming pool surface area unless they provide freeboard volume to contain the Water Quality Volume as required by TCEQ rules.
22.05.17(b) *(3500.11, §7, adopted 2/20/07)*	Water Quality Buffers	Eliminate 22.05.17 and Buffers per TCEQ RG-348 Appendix A Optional Enhanced Measures shall govern.
22.05.017(d) *(3500.11, §7, adopted 2/20/07)*	Development in the buffer is limited to critical crossings only and as few as possible; (11) WQ ponds are allowed in the buffer if drainage area is < 128 ac	Allow stacking detention on top of the allowed WQ Ponds; Allow storm outfalls and daylights in the buffer (e.g. pond outfall). Parallel encroachment of utilities within the buffer may be allowed with City Engineer approval.
22.05.022(a)(2) *(3500.11, §12, adopted 2/20/07)*	Nonresidential construction is to use xeriscape landscaping	Eliminate
22.05.023 *(3500.11, §13, adopted 2/20/07)*	Structural Controls – Water Quality	Eliminate and substitute with comply with TCEQ RG-348 Appendix A Optional Enhanced Measures.
22.05.025 *(3500.11, §15, adopted 2/20/07)*	Erosion Hazard Zone setbacks; sections allows for a slope maintenance plan	Eliminate

EXHIBIT E

Code Section *(Ordinance)*	**Summary**	**Modification**
Chapter 26	**Sign Ordinance**	
26.01.004 *(2020-12)*	(4) off premises signs are prohibited	Allow an off-site directional sign with comparable design and size to the sign approved for the Wild Ridge Development at the US Hwy 290 and proposed Arterial intersections.
Chapter 28	**Subdivision & Site Development**	
28.07.004(4) *(2019-39, adopted 10/15/19)*	The Dripping Springs Techinical Criteria (DSTC), Ordinance No. 2019-39, defers to the City of Austin Environmental Criteria Manual (ECM) for the design of Environmental Management Facilities.	No requirement to comply with the City of Austin ECM for Water Quality design purposes. BMP's for water quality control compliant with the Texas Commission on Environmental Quality (TCEQ) Optional Enhanced Measures for the Protection of Water Quality in the Edwards Aquifer (RG-348 Appendix A) are considered as compliant Environmental management facilities.
28 Exh A 5.4.3 *(2019-29, adopted 9/10/19)*	Requires construction and installation of required public improvements & City Utilities	All public improvements shall be completed or supported by complete fiscal security in accordance with approved construction plans prior to submission of final plat. A final plat shall not be filed for recordation until all improvements and/or fiscal security has been accepted by the City.
28 Exh A 11.21.2 *(2019-29, adopted 9/10/19)*	Maximum block length and cul-de-sac is 2,000'	Maximum block length and cul-de-sac is 3,000'
28 Exh A 12.2.1 *(2019-29, adopted 9/10/19)*	Minimum utility easement is 20'	Minimum utility easement is 15'
28 Exh A 12.2.4 *(2019-29, adopted 9/10/19)*	Front lot PUE is to be 20'	Front lot PUE is to be 10'

EXHIBIT E

Code Section *(Ordinance)*	**Summary**	**Modification**
28 Exh A 13.2 *(2019-29, adopted 9/10/19)*	Repeat language on block lengths; min/max called as 400'/1,200'	Update to match 28 Exh A 11.21.2
28 Exh A 14.6 *(2019-29, adopted 9/10/19)*	Minimum lot size is 0.75 ac	Minimum lot size is 3,500 SF
28 Exh A 15.2 *(2019-29, adopted 9/10/19)*	The sidewalk must be a minimum of 5' from the back of curb and 1' from the ROW; 5' can only be reduced with City Council approval	Sidewalks shall be a minimum of 5 feet wide, 2 feet from the ROW and a minimum of 3.5 feet from the back of curb.
28 Exh A 16.1 *(2019-29, adopted 9/10/19)*	Minimum Building Setback Lines	Residential lots 45 ft wide or less are allowed for zero lot line development while maintaining a ten-foot side building line setback on the other side.
28 Exh A 18.3.8 *(2019-29, adopted 9/10/19)*	Drainage from one lot may go across another w/o City Engineer approval & an easement	Drainage from a residential lot backing an adjacent residential lot within the subdivision will be allowed to drain to the adjacent lot and on to a street, sewer or ditch for collection in a centralized drainage facility. Drainage leaving the subdivision shall be allowed to leave the site matching the existing character of the flow (sheet flow or concentrated flow) and at the existing rate of flow or less.

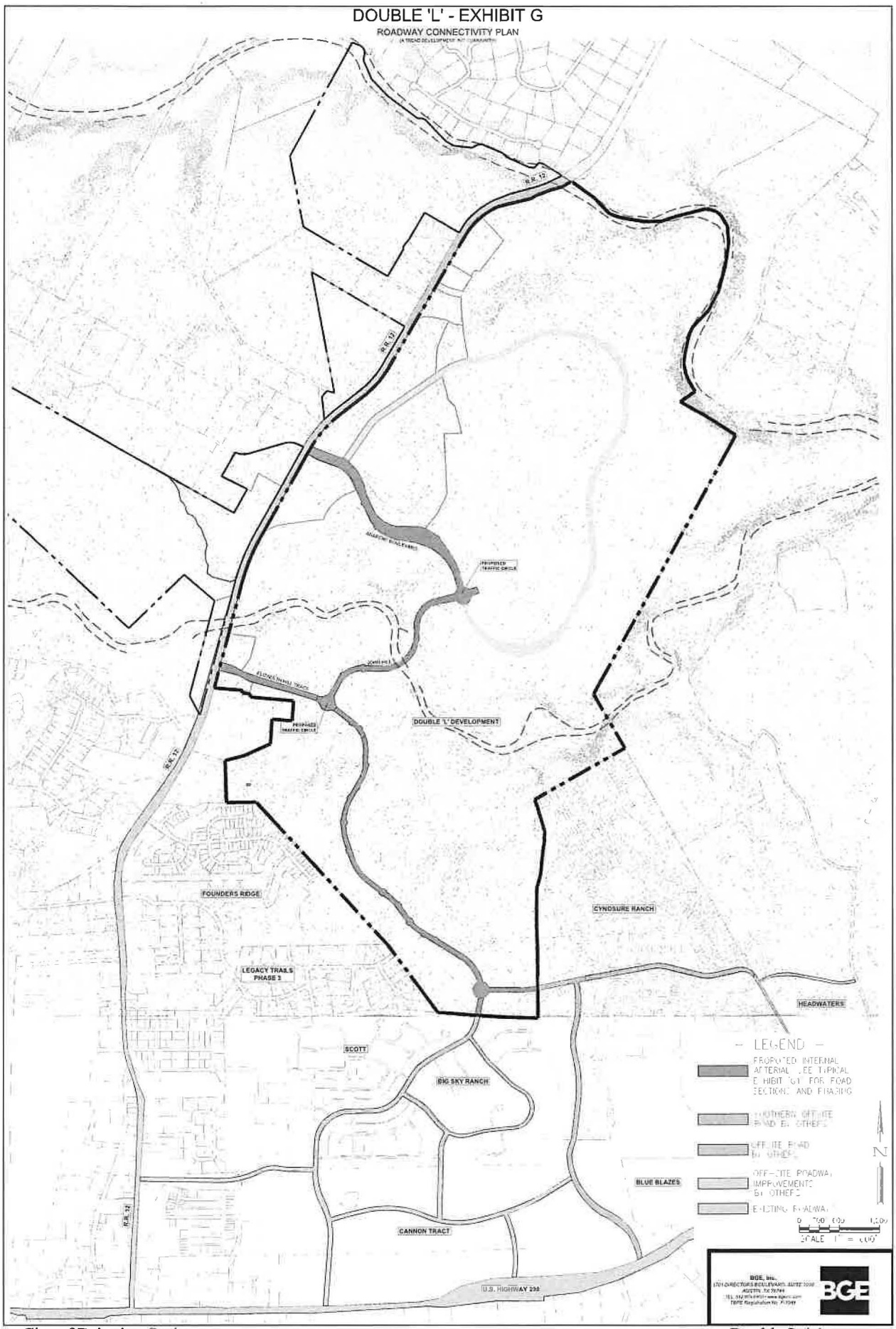
EXHIBIT F

Approved Plant List

For landscaping, developer, builders, and home owners will follow guidelines as specified for Western Zone, Edwards Plateau in ***Native and Adapted Landscape Plants an earthwise guide for Central Texas Fifth Edition, 2013*** published by Texas A&M Agrilife Extension, City of Austin, and growgreen.org (commonly referred to as Austin Grow Green booklet). Any plant listed as invasive on page 53 of Austin Grow Green Fifth Edition is prohibited from use.

DOUBLE 'L' - EXHIBIT G

ROADWAY CONNECTIVITY PLAN



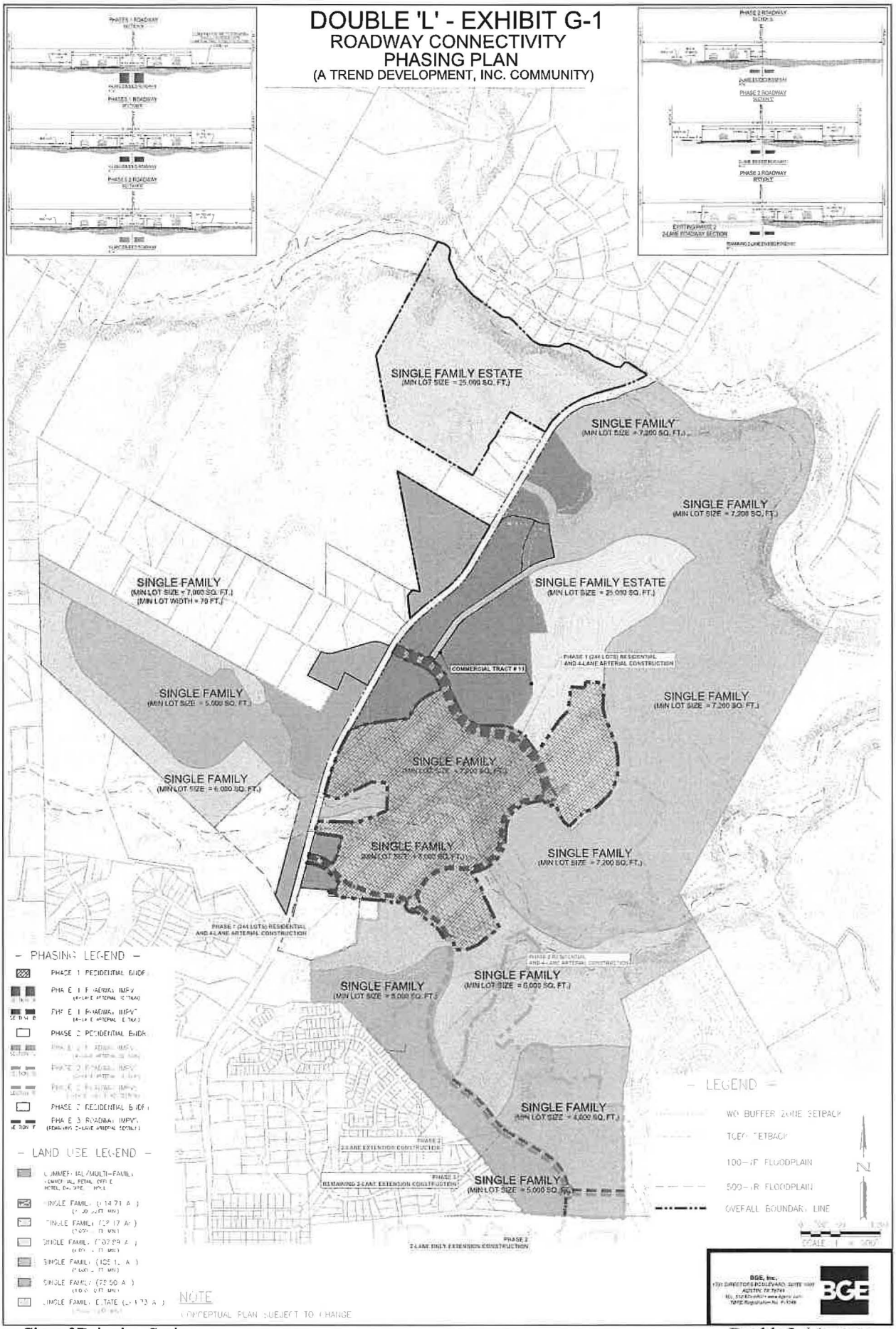

DOUBLE 'L' - EXHIBIT G-1
ROADWAY CONNECTIVITY
PHASING PLAN
(A TREND DEVELOPMENT, INC. COMMUNITY)
SINGLE FAMILY ESTATE
(MIN LOT SIZE = 25,000 SQ. FT.)
SINGLE FAMILY
(MIN LOT SIZE = 7,200 SQ. FT.)
SINGLE FAMILY
(MIN LOT SIZE = 7,000 SQ. FT.)
(MIN LOT WIDTH = 70 FT.)
SINGLE FAMILY
(MIN LOT SIZE = 5,000 SQ. FT.)
SINGLE FAMILY
(MIN LOT SIZE = 6,000 SQ. FT.)
COMMERCIAL TRACT # 11
PHASE 1 (244 LOTS) RESIDENTIAL AND 4-LANE ARTERIAL CONSTRUCTION
PHASE 2 RESIDENTIAL AND 4-LANE ARTERIAL CONSTRUCTION
PHASE 2 2-LANE EXTENSION CONSTRUCTION
REMAINING 3-LANE EXTENSION CONSTRUCTION
PHASE 3 2-LANE ONLY EXTENSION CONSTRUCTION
- PHASING LEGEND -
PHASE 1 RESIDENTIAL BUDF.
PHASE 2 RESIDENTIAL BUDF.
PHASE 3 ROADWAY IMPV.
- LAND USE LEGEND -
- LEGEND -
WQ BUFFER ZONE SETBACK
TCEQ SETBACK
100-YR FLOODPLAIN
500-YR FLOODPLAIN
OVERALL BOUNDARY LINE
N
NOTE
CONCEPTUAL PLAN SUBJECT TO CHANGE
BGE, Inc.

Exhibit H

Impervious Cover Assumption for Single Family Lots	
Lot size	**Assumed Impervious Cover (sq.ft)**
<10000 sq.ft	4,375
10000 sq.ft - 15000 sq.ft	5,000
15000 sq.ft - 1 ac	6,250
1-3 ac	8,500
>3 ac	8,750

https://[illegible]b74dc/BGE/Trend Development/Double LL/05_Engineer/01_Calculations/DA Exh H-I imp[illegible]

Exhibit I

Maximum Allowed Impervious Cover for Single Family Lots	
Typical Lot Size (Lot Width Measured at Front Setback)	**Maximum Impervious Cover**
35' (35'-39')	65%
40' (40'-44')	65%
45' (45'-49')	65%
50' (50'-59')	65%
60' (60'-69')	65%
70' (70'-79')	65%
80' (80'-89')	60%
90' (90'-104')	55%
105' to less than 1 Acre	55%
1 Acre	35%
1-3 Acres	35%

EXHIBIT J

APPROVED VARIANCES **Vested Ordinances in effect in 2012 to be adopted under this Agreement**	
Volume 2, Article 15, Chapter 20, Subchapter A **Ordinance No. 1230.6**	**Comments**
Section 1. General Procedures	
Section 1.3.2 – The provisions of this Chapter shall apply to the following forms of land subdivision and development activity within the City and its ETJ: (f) The Development of an Apartment Project or Condominium Project.	Keep for managed care facility
Chapter 13 – Landscape Ordinance	
Ordinance No. 6300.10 - Attached	Adopt entire ordinance

CITY OF DRIPPING SPRINGS

ORDINANCE No. 6300.10

LANDSCAPING

AN ORDINANCE ENACTING VOLUME 2, ARTICLE 15, CHAPTER 13 OF THE DRIPPING SPRINGS CODE OF ORDINANCES; ESTABLISHING REGULATIONS FOR LANDSCAPING; PROVIDING FOR THE FOLLOWING: RULES; STANDARDS; PROCEDURES; CRIMINAL PENALTIES NOT TO EXCEED $2,000 OR CIVIL PENALTIES OF UP TO $500 PER VIOLATION; AND SEVERABILITY

WHEREAS, the City Council of the City of Dripping Springs ("City Council") seeks to improve the community through long-term environmental care and stewardship; and

WHEREAS, the City Council seeks to protect the Trinity and Edwards Aquifer recharge zone, the Balcones Escarpment, and the Onion Creek, Bear Creek, and Barton Creek Watersheds; and

WHEREAS, the City Council seeks to attract and improve the City's business climate and attract residents and retain business by ensuring the City's atmosphere includes attractive landscaping and the comfort of native shade trees; and

WHEREAS, the City Council finds that to protect, preserve, and promote nature in the city in turn protects the public health, safety, and welfare of the community's residents; and

WHEREAS, the City is undergoing substantial growth and construction, and the City Council seeks to ensure revegetation following common construction activities; and

WHEREAS, the City Council has determined that trees are vital to community health, human health, water conservation, and the economy; and

WHEREAS, the City Council has determined that landscaping preserves erosive slopes, reduces surface water runoff, provides for native habitats, and provides privacy, noise reduction, and a reduction in headlight glare, thus ensuring and sustaining a healthy environment; and

WHEREAS, nationally municipalities are embracing landscaping ordinances that protect the health, safety, and welfare of the community in an environmentally, historically, geographically, and aesthetically sensitive manner; and

WHEREAS, responsible regulation of landscaping is integral to the City's Water Quality Protection Program; and

WHEREAS, pursuant to Texas Local Government Code Section 51.001, the City has general authority to adopt an ordinance or police regulation that is for the good government, peace, or order of the City and is necessary or proper for carrying out a power granted by law to the City; and

WHEREAS, pursuant to Section 217.002 of the Texas Local Government Code, as a Type-A General Law municipality, the City has the authority to adopt ordinances that define, declare, abate, and remove nuisances; and

WHEREAS, pursuant to Texas Local Government Code Chapter 211, the City has general authority to regulate zoning; pursuant to Texas Local Government Code Chapter 214 the City has the authority to adopt ordinances that regulate housing; and pursuant to Texas Water Code Section 26.177, a city may establish a water pollution control and abatement program; and

WHEREAS, the landscaping and tree preservation standards established by this Ordinance are consistent with the City Council's comprehensive effort to preserve the cultural, historical, ecological, and geological treasures of the City and enhance economic development; and

WHEREAS, the City Council finds that it is necessary and proper for the good government, peace, or order of the City of Dripping Springs to adopt this Ordinance regulating landscaping.

NOW, THEREFORE, BE IT ORDAINED by the Dripping Springs City Council:

1. FINDINGS OF FACT

The foregoing recitals are incorporated into this Ordinance by reference as findings of fact as if expressly set forth herein.

2. ENACTMENT

Volume 2, Article 15, Chapter 13 of the City of Dripping Springs Code of Ordinances is hereby approved and enacted, and shall read in accordance with *Attachment "A"*, which is attached hereto and incorporated into this Ordinance for all intents and purposes.

3. REPEALER

All ordinances, or parts thereof, that are in conflict or inconsistent with any provision of this Ordinance are hereby repealed to the extent of such conflict, and the provisions of this Ordinance

shall be and remain controlling as to the matters regulated herein.

4. SEVERABILITY

Should any of the clauses, sentences, paragraphs, sections, or parts of this Ordinance be deemed invalid, unconstitutional, or unenforceable by a court of law or administrative agency with jurisdiction over the matter, such action shall not be construed to affect any other valid portion of this Ordinance.

5. CODIFICATION

The City Secretary is hereby directed to record and publish the attached rules, regulations, and policies in the City's Code of Ordinances as authorized by Section 52.001 of the Texas Local Government Code.

6. EFFECTIVE DATE

This Ordinance shall be effective immediately upon passage and publication as provided for by law.

7. PROPER NOTICE & MEETING

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place, and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551. Notice was also provided as required by Chapter 52 of the Texas Local Government Code.

PASSED & APPROVED this, the 12th day of February 2008, by a vote of 5 (*ayes*) to 0 (*nays*) to 0 (*abstentions*) of the City Council of Dripping Springs, Texas.

CITY OF DRIPPING SPRINGS:

by: _____
Mayor Todd Purcell

ATTEST:

_____
Jo Ann Touchstone, City Secretary

APPROVED AS TO FORM:
Alan J. Bojorquez, City Attorney

Attachment "A"

City of Dripping Springs

CODE OF ORDINANCES

VOLUME: 2

ARTICLE 15

CHAPTER 13

SECTION 1. ENACTMENT PROVISIONS

1.1. Popular Name

This Chapter shall be commonly cited as the "Landscape Ordinance".

1.2. Purpose

The purpose of this Chapter is to provide for the preservation of native trees, prevent the clear-cutting of land, and provide for minimum landscaping and screening requirements, in recognition that trees, landscaping, screening, and buffering protect the health and welfare of the community, while addressing the water conservation and drainage issues particular to the Hill Country region. The purpose of this Chapter is also to enhance the community's ecological, environmental, and aesthetic qualities.

1.2.1 Health, Welfare, & General Well-Being

Preserving and improving the natural environment, and maintaining a working ecological balance are of increasing concern to the City. The fact that the proper use of landscape elements can contribute to the processes of air purification, oxygen regeneration, water absorption, water purification, and noise, glare, and heat abatement as well as the preservation of the community's aesthetic qualities indicates that the use of landscape elements is of benefit to the health, welfare, and general well-being of the community and, therefore, it is proper that the appropriate use of such elements be required.

1.2.2 Water Conservation & Drainage

The City experiences frequent droughts and is characterized by thin soiled rock formations; therefore, it is the purpose of this Chapter to encourage the use of drought resistant vegetation and landscaping that minimizes runoff and erosion.

1.3. Scope

This Chapter applies to all **commercial** property within the incorporated municipal boundaries (i.e., "city limits") for which Site Plan approval by the City is required under the City's Code of Ordinances. This Chapter applies to actions taken after the date of enactment.

SECTION 2. DEFINITIONS

2.1. Interpretation

Words and phrases used in this Chapter shall have the meanings set forth in this section. Terms that are not defined below, but are defined elsewhere in the Code of Ordinances, shall be given the meanings set forth in the Code. Words and phrases not defined in the Code of Ordinance shall be given their common, ordinary meaning unless the context clearly requires otherwise. When not inconsistent with the context, words used in the present tense shall include the future tense; words in the plural number shall include the

singular number (and vice versa); and words in the masculine gender shall include the feminine gender (and vice versa). The word "shall" is always mandatory, while the word "may" is merely directory. Headings and captions are for reference purposes only.

2.2. Terminology

City: The City of Dripping Springs, an incorporated municipality located in Hays County, Texas.

City Administrator: The chief administrative officer of the City of Dripping Springs, Texas. The term shall also include the Deputy City Administrator.

City of Austin Environmental Criteria Manual: The document promulgated by the City of Austin, which is commonly used throughout the region and is widely regarded as the standard in the development community, as may be amended.

City of Austin Grow Green Guide: The document promulgated in part by the City of Austin, entitled *Native and Adapted Landscape Plants: An Earthwise Guide for Central Texas*, as may be amended.

City Council: The governing body of the City of Dripping Springs, Texas.

City Permit: A city license, certificate, approval, registration, consent, permit, or other form of authorization required by a City ordinance, regulation, or rule in order to develop, construct, and operate the improvements on the Property.

Code: The Code of Ordinances enacted by the City of Dripping Springs, as may be amended from time to time.

DBH (diameter at breast height): The tree trunk diameter of an existing tree measured in inches at a height of 4.5 feet above the ground. If a tree splits into multiple trunks below 4.5 feet, the trunk is measured at its most narrow point beneath the split.

Designated Tree: Any of the following:

(a) A hardwood tree having a trunk of eight (8) inches in caliper or greater measured at DBH;

(b) A multi-trunked hardwood tree having a total trunk DBH of thirty (30) inches or more (not counting trunks less than eight (8) inches in diameter); or

(c) A cluster of hardwood trees within a ten (10) foot radius circle having a total trunk DBH of forty (40) inches or more (not counting trunks less than eight (8) inches in diameter).

Impervious Cover: Buildings, parking areas, roads, and other impermeable man-made improvements covering the natural land surface that prevents infiltration. For further

clarification on what is considered impervious cover, refer to the City's Water Quality Protection Ordinance.

Landscape Architect: One whose profession is the decorative and functional alteration and planting of grounds, especially at or around a building site

Landscaping: Consists of introduced vegetation, as well as related improvements to a lot including, but not limited to, forming and berming, irrigation systems, landscape subsurface drainage systems, site furnishings, and nonstructural retaining walls.

Natural Area: An area where the naturally grown landscaping is left primarily undisturbed, except for the removal of poison ivy, greenbriar, and similar vegetation, oak wilt removal and/or prevention measures, and allowing for maintenance of the trees to maintain vigorous growth.

Owner: A person with legal control over property in question.

Person: A human individual, corporation, agency, unincorporated association, partnership, or sole proprietorship, or other legal entity.

TCEQ: The Texas Commission on Environmental Quality, or its successor agency.

SECTION 3. ADMINISTRATION

3.1 Application

This Chapter applies to all new **commercial** development requiring Site Plan approval subject to zoning requirements. All properties going through re-development through extension, reconstruction, resurfacing, or structural alteration must come into compliance. Site plan approval shall be conditioned on compliance with this Chapter.

3.2. Landscaping Fund

A fund is hereby created in which any cash-in-lieu paid to the City pursuant to the mandates of this Chapter shall be deposited. The fund may be drawn upon by the City to implement landscaping improvements on City land and City controlled right-of-ways.

3.3. Prohibition

No person shall damage or remove trees in violation of this Chapter.

SECTION 4. LANDSCAPING

4.1. Landscape Requirements

4.1.1. Landscape Buffer Planting Requirements:

(a) All plant material shall be of native or adapted species.
(b) All new proposed shade trees shall be a minimum of 4 inches in diameter.
(c) All proposed ornamental trees shall be a minimum of 2 inches in diameter.
(d) All large shrubs shall be a minimum of 5 gallon container size and small shrubs/groundcovers a minimum of 1 gallon container size.

4.1.2. Landscape Buffer Spacing Requirements:

The following landscape buffer spacing requirements shall apply to all designated landscape buffers.

(a) Shade Trees (such as Live Oak or Cedar Elm):
one per 50' of buffer frontage
(b) Ornamental Trees (such as Crape Myrtle or Desert Willow):
one per 25' of buffer frontage
(c) Large Shrubs, five-gallon (such as Wax Myrtle, DW Yaupon, or Agarita):
one per 6' of buffer frontage
(d) Small Shrubs/Groundcovers, one-gallon (such as Lantana or Liriope):
one per 3' of buffer frontage

All plants shall comply with the City of Austin "Grow Green" recommended plant guide (www.ci.austin.tx.us/growgreen). Invasive plants in this guide are specifically prohibited.

4.2. Landscape Plan & Tree Survey Submittal

A landscape plan and tree survey shall be submitted to the City with the proposed Site Plan. The landscape plan shall comply with the Landscape Requirements. The landscape plan shall be signed and sealed by a Landscape Architect licensed by the State of Texas. The existing tree survey should be signed and sealed by a Surveyor licensed by the State of Texas.

4.3. Parking Area Landscaping Requirements

4.3.1. Parking lots and all vehicular parking and maneuvering areas, excluding driveways behind buildings, shall contain areas constructed, planted, and maintained as landscaped islands, peninsulas, or medians.
4.3.2. The minimum total area in landscaped islands, peninsulas, or medians in the parking lots in front of buildings shall be ninety (90) square feet for each twelve (12) parking spaces.

4.3.3. No parking space shall be located further than fifty (50) feet from a landscaped island, peninsula, median, or tree. They shall be located evenly through the parking areas, however the location of landscaped islands, peninsulas, and medians may be adjusted to accommodate existing trees or other natural features.

4.3.4. Landscape terminal islands (end islands) shall be located at the end of all parking modules in a configuration to allow for turning radii of intersecting aisles to protect parked vehicles, provide for visibility, confine moving traffic to aisles and driveways, and provide space for landscaping.

4.4. Dumpster Screening

4.4.1. For outdoor condensers, utility huts, and other building service equipment (other than a roof top), such equipment shall be reasonably screened from view on all sides using a masonry wall and vegetative screen using at least two (2) varieties of plant material from the "Grow Green" plant guide, that, at maturity, are at least the height of the equipment to be screened.

4.4.2. All refuse and/or recycling containers shall be reasonably screened with landscaping from public view and the view of adjoining properties.

4.5. Landscape Maintenance Requirements

4.5.1. The owner shall be responsible for:

(a) Regular maintenance of all required landscaped areas and plant materials in a vigorous and healthy condition, free from diseases, pests, weeds, and litter. This maintenance shall include weeding, watering, fertilization, pruning, mowing, edging, mulching, or other necessary maintenance in accordance with generally accepted horticultural practice;

(b) The repair or replacement of required landscape structures (walls, fences, etc.) to a structurally sound condition;

(c) The regular maintenance, repair, or replacement, where necessary, of any screening or buffering;

(d) Replacing planted trees if they die or become diseased beyond repair within five (5) years after planting; and

(e) Repairing damage to landscaped areas, structures, screening, buffering, or trees as a result of ingress or egress from site easements by authorized or unauthorized parties.

4.6. Integrated Pest Management

An integrated pest management plan (IPM) shall be submitted with the Site Plan. The IPM shall include the fertilizer ratios, brands, and types of fertilization application methods to be used. Fertilizers must be phosphate-free.

4.7. Tree Preservation Requirements

4.7.1. A grading and tree survey shall be submitted with the Site Plan.

4.7.2. The tree survey shall include all existing, live, healthy trees with an eight (8) inch DBH in diameter and larger. The survey shall indicate the size (DBH) and species of tree. Trees observed to be distressed will be indicated with an asterisk on the tree list. Trees shall be represented by circles using the formula of one (1) foot of radius for every one inch of trunk diameter. Unbroken circles indicate trees that are to remain. Dashed circles indicate trees that are to be removed (including trees identified to be distressed).

4.7.3. Healthy, designated Class I and II trees (as defined by the City of Austin Environmental Criteria Manual) that require removal to accommodate the development shall be replaced at a ratio of 1:1 or cash-in-lieu may be paid to the City, the amount equal to the cost of nursery stock required to replace the caliper amounts lost and the cost of installation on a per unit basis, not to exceed one hundred dollars ($100.00) per caliper inch or six thousand dollars **($6,000.00) per acre** (prorated for sites of more or less than one acre) for the entire site. Trees identified as distressed shall not be included in Tree Preservation Requirements evaluation.

4.7.4. Pre- and post-construction fertilization is required for existing trees that will be or have been disturbed by construction activities, including disturbance of the critical root zone. Fertilizers must be phosphate-free.

4.7.5. The planting, preserving, and maintaining of trees which are contagiously diseased trees or the storage of cut oak unless first determined by a certified arborist to be devoid of oak wilt or properly treated, shall be deemed a public nuisance and are prohibited.

4.7.6. During construction, take measures to protect trees, including fencing, shielding, and/or signage, as necessary.

4.8. Irrigation Requirements

4.8.1. An irrigation plan is required as part of the Site Plan and will be prepared by a licensed irrigator (i.e., licensed landscape architect or engineer). The plan should include rain/freeze sensors on all controllers. The irrigation plan should provide drip irrigation in shrub beds where appropriate and bubblers on all trees.

4.8.2. Turf grass plantings may be Buffalo, Zoysia, or Bermuda. St. Augustine is expressly prohibited.

4.8.3. Landscaped areas must be mulched to reduce evaporation and preserve water.

SECTION 5. PROHIBITION

It shall be unlawful for any person to violate this Chapter.

SECTION 6. ENFORCEMENT

6.1. Compliance

Violators of this Chapter will be required to come into compliance within sixty (60) days, unless a variance of has been approved by the City. Compliance with this Chapter may be grounds for withholding of other related, pending permits for the project by the City.

6.2. Civil & Criminal Penalties

The City shall have the power to administer and enforce the provisions of this Chapter as may be required by governing law. Any person violating any provision of this Chapter is subject to stop work order, suit for injunctive relief, and/or prosecution for criminal violations. Any violation of this Chapter is hereby declared to be a nuisance. Any violation of this Chapter may serve as grounds to withhold or delay issuance of other permits and revocation of a Certificate of Occupancy.

6.3 Criminal Prosecution

Any person violating any provision of this Chapter shall, upon conviction, be fined a sum not exceeding two thousand dollars ($2,000.00) to be deposited in the Landscaping Fund. Each day that a provision of this Chapter is violated shall constitute a separate offense. An offense under this Chapter is a misdemeanor.

6.4 Civil Remedies

Nothing in this Chapter shall be construed as a waiver of the City's right to bring a civil action to enforce the provisions of this Chapter and to seek remedies as allowed by law, including, but not limited to the following:

6.4.1 Injunctive relief to prevent specific conduct that violates the Chapter or to require specific conduct that is necessary for compliance with the Chapter; and

6.4.2 A civil penalty up to five hundred dollars ($500.00) a day to be deposited in the Landscaping Fund, when it is shown that the defendant was actually notified of the provisions of the Chapter and after receiving notice committed acts in violation of the Chapter or failed to take action necessary for compliance with the Chapter; and other available relief.

6.4.3. Stop Work Order. In the event work is not being performed in accordance with this Chapter, the City shall issue a stop work order and all work shall immediately cease. No further work shall be undertaken on the project as long as a stop work order is in effect.

----------AFFIDAVIT OF PUBLICATION----------

THE STATE OF TEXAS

COUNTY OF HAYS

BEFORE ME, the undersigned authority, on this day personally appeared Dale Roberson, publisher of THE NEWS DISPATCH, who being by me duly sworn, upon oath deposes and says:

That the attached LEGAL NOTICE was published in THE NEWS DISPATCH, a newspaper published in the English language, published in Dripping Springs, Texas, and having a general circulation within the CITY OF DRIPPING SPRINGS & the CITY OF WIMBERLEY, Texas, and the COUNTY OF HAYS, TEXAS, in the following issues: Feb. 21, 2008 - Ord. # 6300.1

and that the attached newspaper clipping is a true and correct copy of said published notice.

Dale Roberson

Dale Roberson

SWORN TO AND SUBSCRIBED BEFORE ME this 22 day of Feb 2008

Wandean Turner

Notary Public

WANDEAN TURNER
NOTARY PUBLIC
State of Texas
Comm. Exp. 03-23-2009

LEGAL NOTICES

PUBLIC NOTICE

The City of Dripping Springs City Council Passed and Approved An Ordinance No. 6300.1 on February 12, 2008: An Ordinance Enacting Volume 2, Article 15, Chapter 13 of the Dripping Springs Code of Ordinances; Establishing Regulations for Landscaping and Tree Preservation; Providing for the Following: Rules; Standards; Procedures; Criminal Penalties not to Exceed $2,000 or Civil Penalties of up to $500 per Violation; and, Severability. Any person violating any provision of this Ordinance shall, upon conviction, be fined a sum not exceeding two thousand dollars ($2000.00). Each day that a provision of this Ordinance is violated shall constitute a separate offense. An offense under this Ordinance is a misdemeanor.

2/21-1t

Exhibit K

RESIDENTIAL LOT WIDTH & SIZE TABLE	
MINIMUM LOT WIDTH AT FRONT SETBACK	**MINIMUM LOT SIZE (SF)**
35'	3600
40'	4000
45	4500
50	5000
60'	6000
70'	7000
80'	7500
90	8000
105'	10000
1.0-Acre	43560

EXHIBIT L

Tree Planting Requirements

Tree Classification:

Shade Trees (Large Trees) are required to be 3 caliper inches or greater in diameter at time of planting. These trees are larger in size and primarily function to create shade in the landscape.

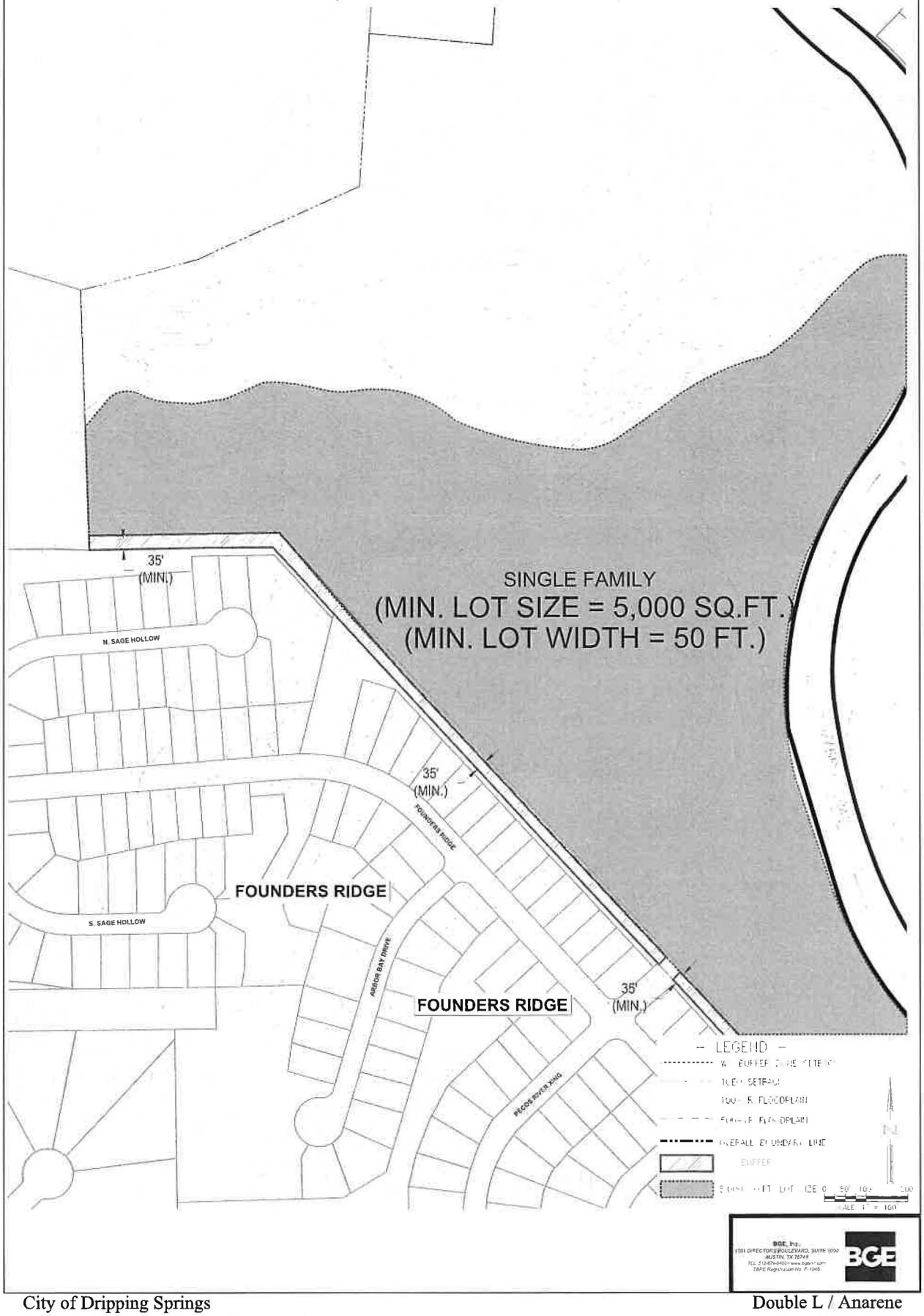
Ornamental Trees (small trees) are required to be 2-3 caliper inches in diameter at time of planting. These trees are smaller, colorful species that add color and accent to a landscape.

Lot Sizes	**Tree Requirements**
35' & 40' (35'-44') Lots	A minimum of one (1) shade tree in the front yard. One (1) shade tree in the rear yard if the lot backs up to a public use area.
45' & 50' (45'-59') Lots	A minimum of one (1) shade tree in the front yard. One (1) shade tree in the rear yard if the lot backs up to a public use area.
60' & 70' (60'-79') Lots	A minimum of two (2) shade trees and one (1) ornamental tree
80' & 90' (80'-104') Lots	A minimum of three (3) shade trees and two (2) ornamental trees
105' (105-less than an Acre) Lots	A minimum of four (4) shade trees and two (2) ornamental trees
Acreage (Acre and above) Lots	A minimum of four (4) shade trees and three (3) ornamental trees

DOUBLE 'L' - EXHIBIT M

SETBACK EXHIBIT (1-of-3)

(A TREND DEVELOPMENT, INC. COMMUNITY)



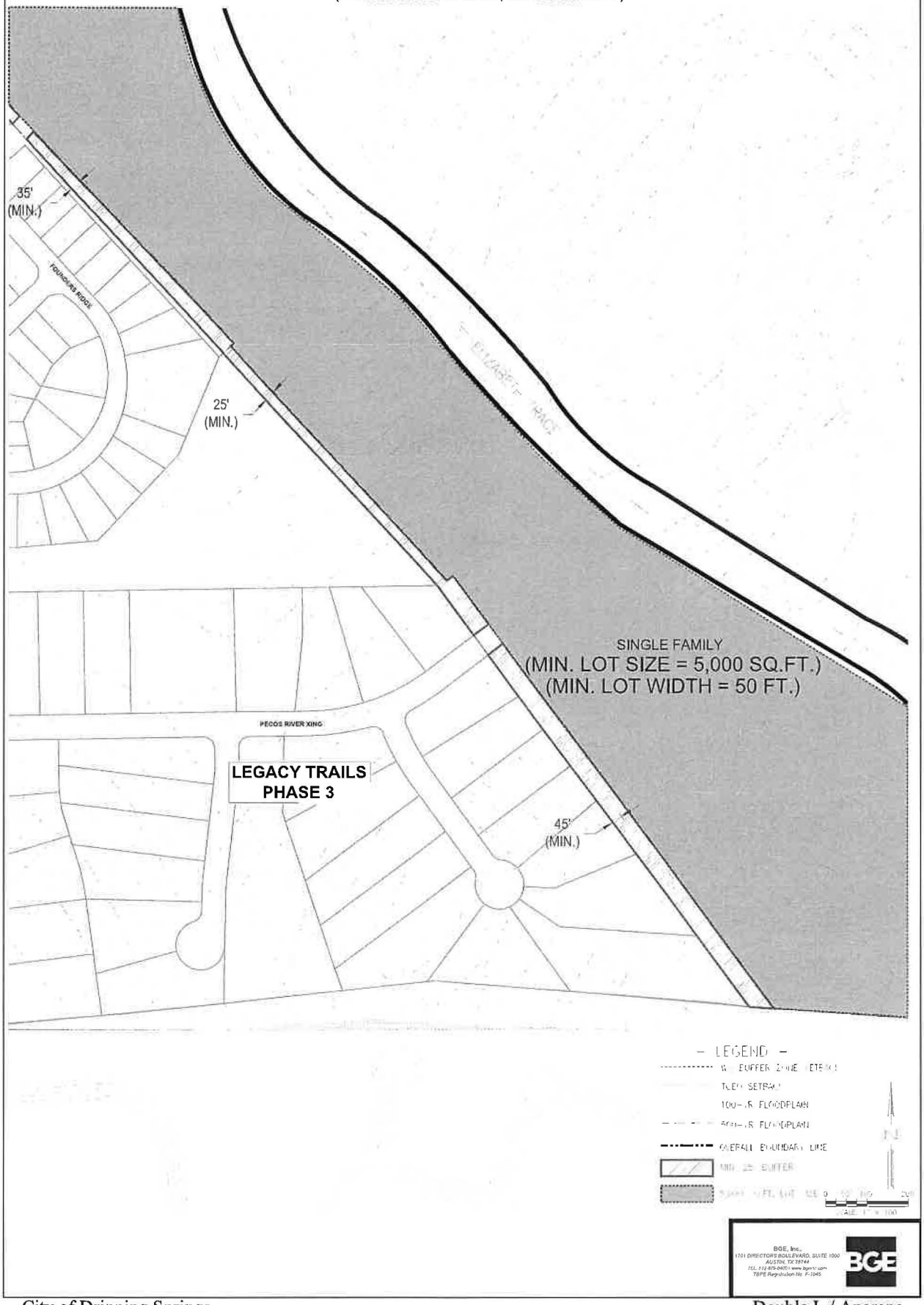
BGE, Inc.
1101 DIRECTORS BOULEVARD, SUITE 1000
AUSTIN, TX 78744
TEL 512.879.0400 www.bgeinc.com
TBPE Registration No. F-1046

BGE

DOUBLE 'L' - EXHIBIT M

SETBACK EXHIBIT (2-of-3)

(A TREND DEVELOPMENT, INC. COMMUNITY)



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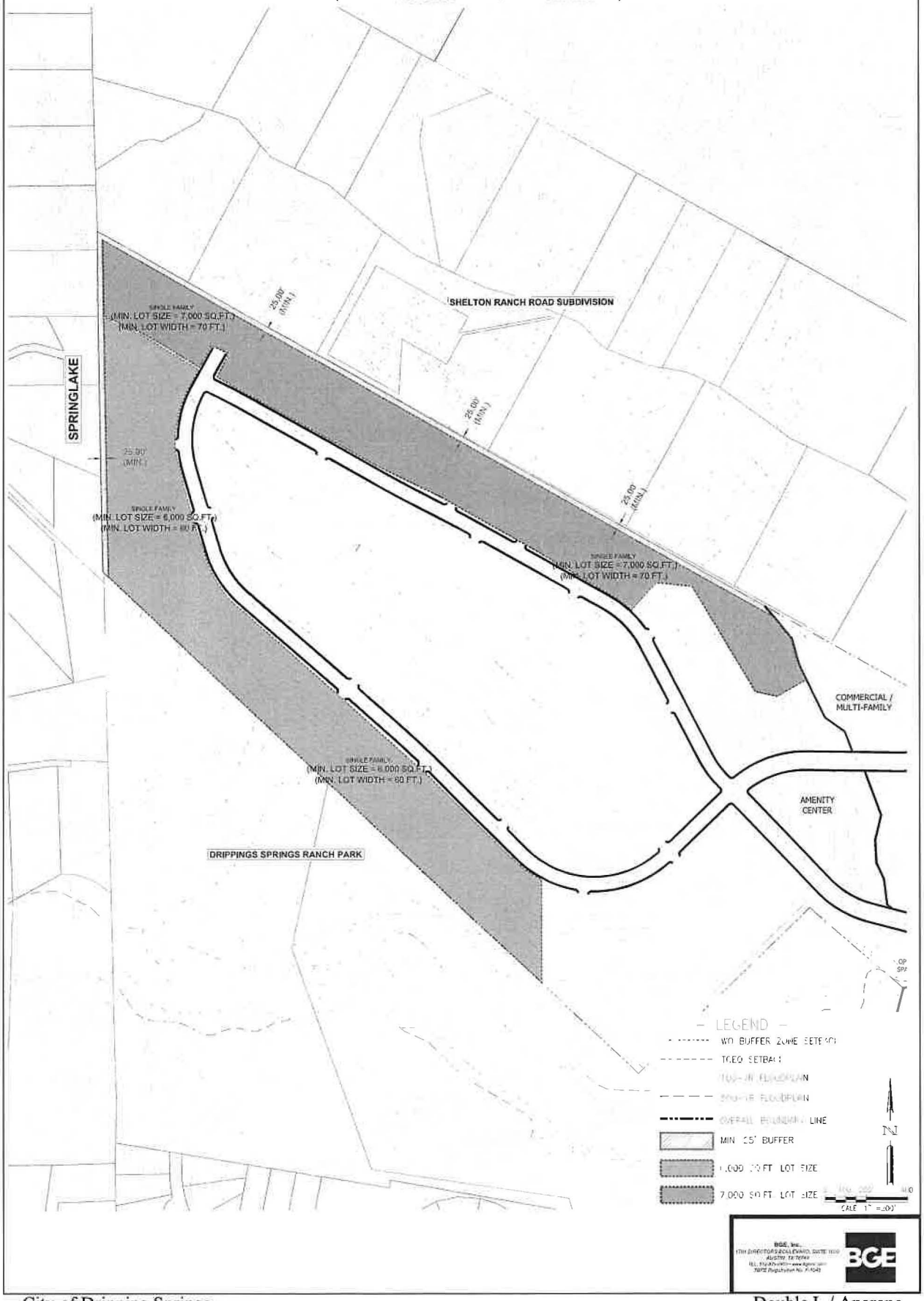
AUSTIN, TX 78744
TEL: 512 879-0400 / www.bgeinc.com
TBPE Registration No. F-1046

DOUBLE 'L' - EXHIBIT M

SETBACK EXHIBIT (3-of-3)

(A TREND DEVELOPMENT, INC. COMMUNITY)



BGE, Inc.

EXHIBIT N
LOT MIX AND ALLOWED VARIANCE

LOT TYPE	TOTAL	5% ALLOWED VARIANCE*	HIGH LIMIT	LOWER LIMIT
35'	73	0	73	73
40'	96	0	96	96
45'	110	0	110	110
50'	417	21	438	396
60'	302	15	317	287
70'	315	16	331	299
80'	269	13	282	256
90'	282	14	296	268
105' TO 0.75 Acre	178	9	187	169
0.75 Acre to 1.0 Acre	189	9	198	180
	2231			

***MAXIMUM OVERALL LOT INCREASE CAPPED AT 75 LOTS**

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: Crystal Hall

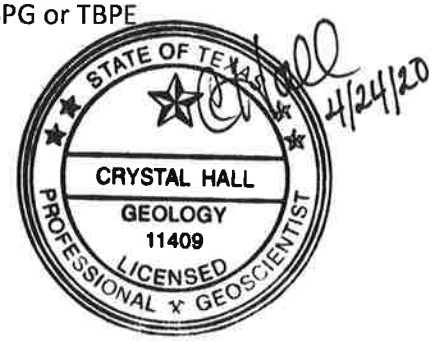
Telephone: (512) 879-0468

Date: 4/13/2020

Fax: (512) 879-0499

Representing: BGE, Inc. TBPG Registration #50560 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Double L Ranch

Project Information

1. Date(s) Geologic Assessment was performed: 4/7/2020, 4/14/2020, and 4/15/2020
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☐ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Please see attached Table 1		

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = _____'
   Site Geologic Map Scale: 1" = 400'
   Site Soils Map Scale (if more than 1 soil type): 1" = 400'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☒ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

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

Geologic Assessment Attachments

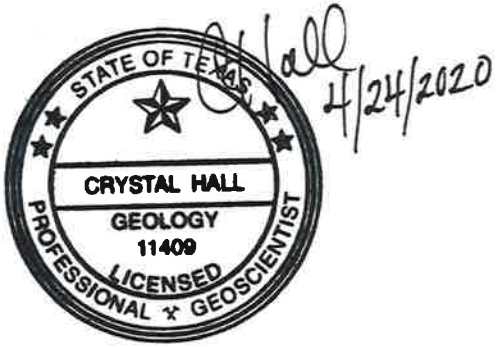
- Table 1 – Soil Units, Infiltration Characteristics and Thickness
- Attachment A – Geologic Assessment Table
- Attachment B – Stratigraphic Column
- Attachment C – Site Geology
- Attachment D – Site Geologic Maps
- Attachment E – Site Soils Maps

Table 1 – Soil Units, Infiltration Characteristics and Thickness

TABLE 1

Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group	Thickness
Brackett-Rock outcrop-Comfort complex, 1 to 8 percent slopes (BtD)	D	14 inches
Denton silty clay, 1 to 3 percent slopes (DeB)	D	36 inches
Doss silty clay, moist, 1 to 5 percent slopes (DoC)	D	17 inches
Lewisville silty clay, 1 to 3 percent slopes (LeB)	B	69 inches
Purves clay, 1 to 5 percent slopes (PuC)	D	19 inches
Real-Comfort-Doss complex, 1 to 8 percent slopes (RcD)	D	14 inches



Attachment A – Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME:

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DIP	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
MB-1	30.219698	-98.080349	MB	30	Kgru	0.7	0.7	8					N	8	38	X		X		Hillside
MB-2	30.217148	-98.081661	MB	30	Kgru	0.7	0.7	700					C	5	35	X		X		Hillside

* DATUM:

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

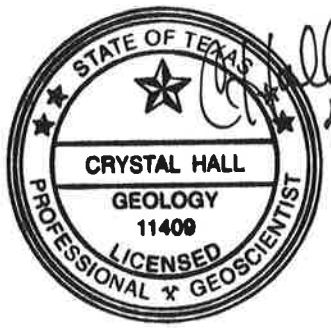
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Date: 04/10/2020 4/24/2020

Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)



4/24/2020

Attachment B – Stratigraphic Column

ATTACHMENT B
Stratigraphic Column
Double L Ranch Parcel 1
Dripping Springs ETJ, Texas

Group	Formation	Member	Thickness (feet)	Lithology
Trinity	Glen Rose	Upper	250-450	Alternating beds of limestone and argillaceous limestone, fossils rare, and stairstep topography.

Source: Cook, 1963; Clark, 2018

4/24/2020

Attachment C – Site Geology

Site Geology – A Narrative Description of Site Specific Geology of Double L Ranch Parcel 1

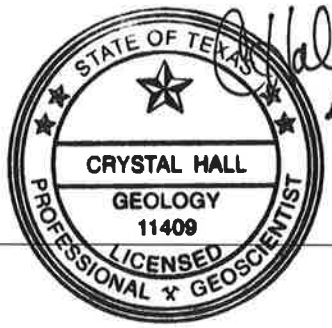
The Geologic Assessment (GA) on Double L Ranch was conducted by Ms. Crystal Hall, P.G., Mr. Cody Smith, and Mr. Reed Petrosky, of BGE, Inc. (BGE) on April 7, April 15, and April 16. Double L Ranch Parcel 1 (herein referred to as "subject property") consists of an approximate 224-acre portion of the Double L Ranch. The subject property is located approximately two miles north of Dripping Springs on Ranch Road (RR) 12, within the City of Dripping Springs extraterritorial jurisdiction (ETJ), Hays County, Texas. The subject property is located within the *Dripping Springs, Texas*, U.S. Geological Survey (USGS) 7.5-minute topographic map (2019).

The subject property consists of a mostly undeveloped ranch land, with residential complex and multiple agricultural structures (barns, sheds, storage containers, etc.), that are currently used for cattle and horse grazing. Upon reviewing historic aerial photographs, the tract has been mostly undeveloped since at least 1951. According to the National Hydrography Dataset, a stream, Little Barton Creek, flows from west to east through the approximate middle of the subject property. Drainage on the subject property is primarily via small ephemeral swales and overland sheet flow to Little Barton Creek. The subject property is vegetated with grass, shrubs, and trees. Tracts adjacent to the subject property are a mix of residential, commercial, and agricultural properties. The subject property elevation ranges between approximately 1,000 feet above mean sea level (msl) to about 1,200 feet msl.

One Water Well was observed on the subject property during the site visit. It is located approximately 700 feet east of RR 12, just north of Dripping Springs Elementary. Upon review of data from TCEQ and the Texas Water Development Board (TWDB), no water wells are recorded on or within 500 feet of the subject property. However, it appears that one unrecorded well (MB2) is associated with the residence immediately adjacent to the subject property.

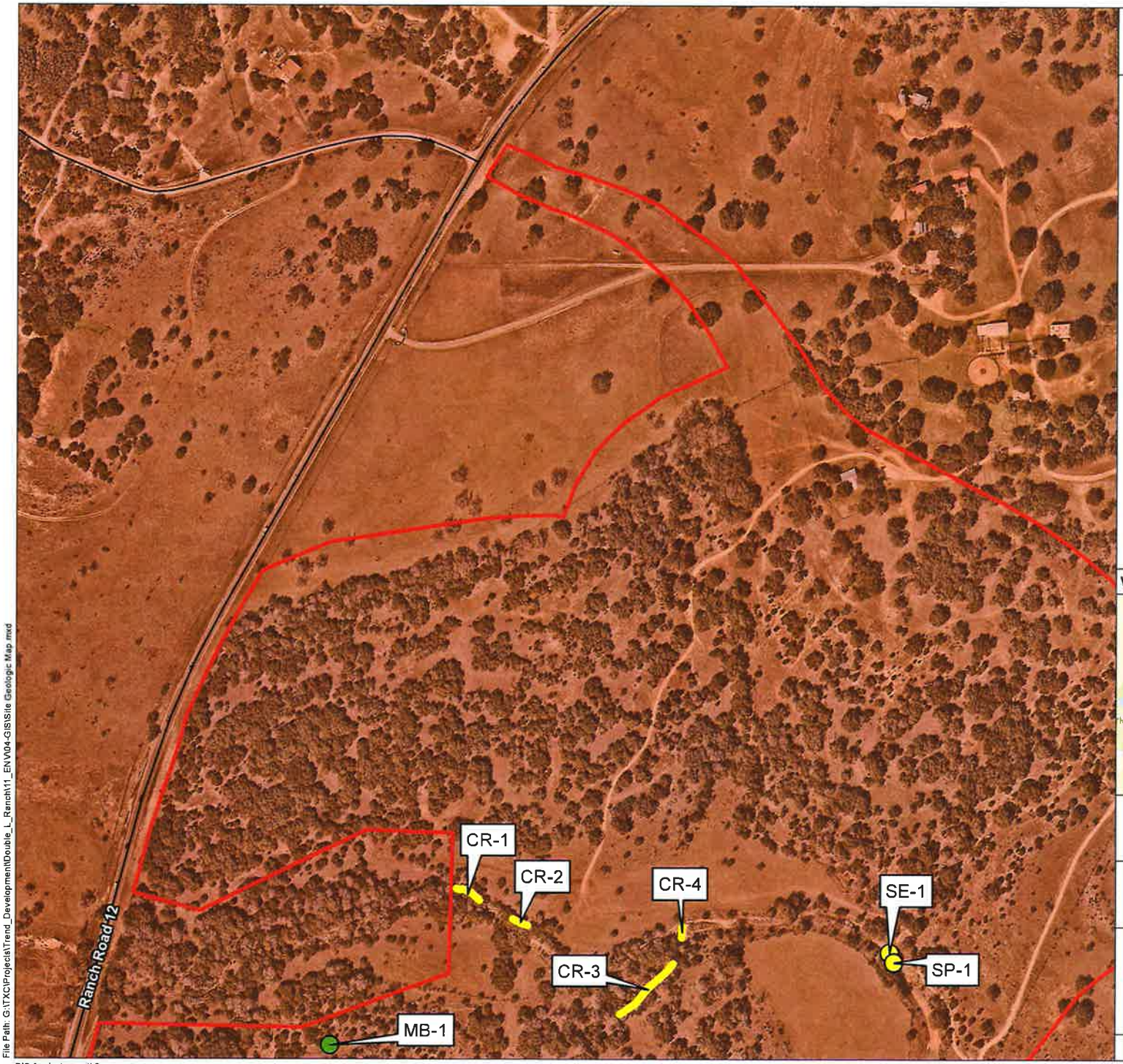
Surface geology was observed during the field visit. Geologic units on the subject property are mostly obscured by soil cover and vegetation. Areas where the unit outcrops are along stream beds and on hillsides. The geologic map Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Hays County, Texas was utilized to identify underlying geology. The geologic unit present on the subject property have been identified as the Upper Camp Bullis Glen Rose Limestone Formation. This formation has an approximate thickness of 230 feet. It forms a stairstep topography and has lithology consisting of alternating beds of burrowed wackestone, packstone, miliolid grainstone, and argillaceous limestone. Per review of published literature, no mapped faults occur on the subject property. No evidence of the faulting was observed in the field (such as fault breccia or slickensides) while completing the required 50 foot transects on the subject property.

The subject property is located entirely within the Edwards Aquifer Contributing Zone. The Contributing/ Recharge Zone boundary is located approximately 8.7 miles southeast of the subject property. Karst zone data obtained for Hays County indicates that the subject property is not within any mapped Karst Zones. No karst features were observed during the site visit. Following the review of (USFWS) data and the field visit, there is little potential for the subject property to contain endangered cave species habitat.



C Hall 4/24/20

Attachment D – Site Geologic Maps



0 87.5 175
Feet

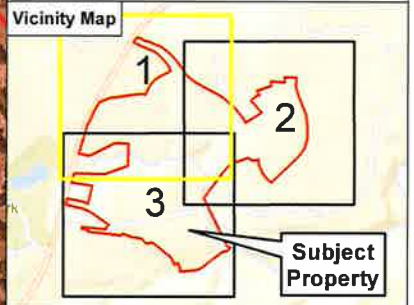
Legend

- Double L Ranch Parcel 1
- Seep/Spring
- Manmade Features in Bedrock
- Rimrock
- Kgru: Upper Glen Rose Formation
- Roadway

STATE OF TEXAS
CRYSTAL HALL
GEOLOGY
11409
LICENSED
PROFESSIONAL GEOSCIENTIST

4/24/20

Vicinity Map



BGE, Inc.
101 West Louis Henna Blvd, Suite 400
Austin, TX 78728
Tel: 512-879-0400 Fax: 512-879-0499
www.bgeinc.com

Double L Ranch Parcel 1

Site Geologic Map

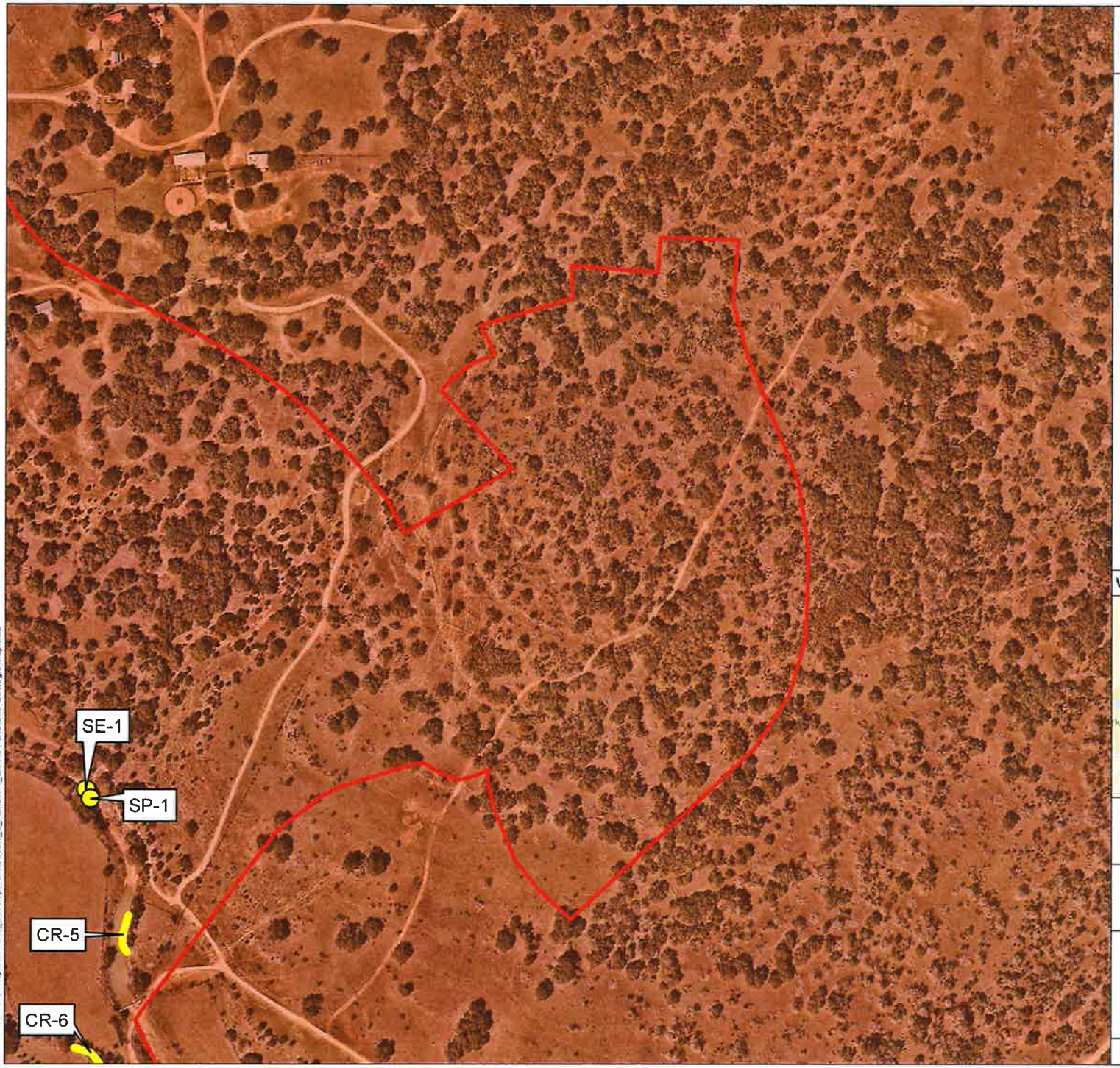
Hays County, TX

Date: April 2020 | Proj. No: 5955-00

Aerial Source: Nearmap (2019)

File Path: G:\TXC\Projects\Trend_Development\Double_L_Ranch\11_ENV\04-GIS\Site Geologic Map.mxd

GIS Analyst: csmith2



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4/24/20

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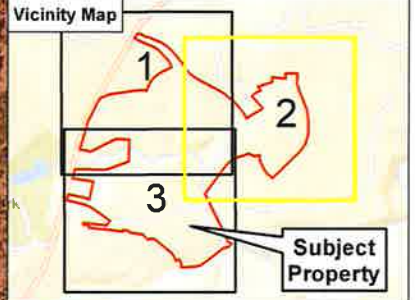

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Double L Ranch Parcel 1

Site Geologic Map

Hays County, TX

Date: April 2020 | Proj. No: 5955-00

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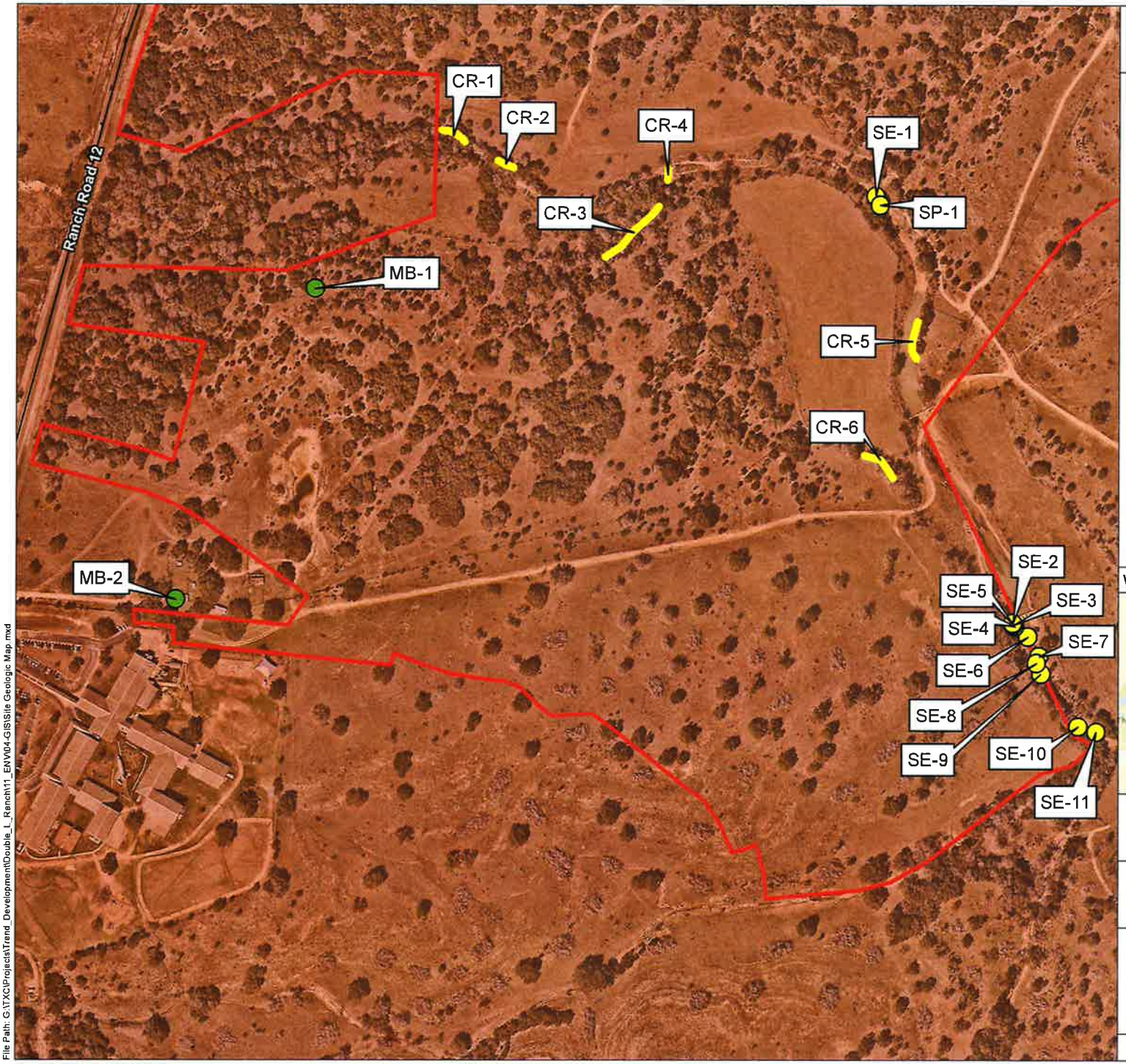
GIS Analyst: csmith2

Aerial Source: Nearmap (2019)



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STATE OF TEXAS
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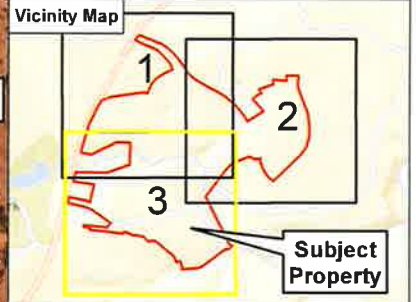
4/14/20

Vicinity Map



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Double L Ranch Parcel 1

Site Geologic Map

Hays County, TX

Date: April 2020 | Proj. No: 5955-00

Aerial Source: Nearmap (2019)

File Path: G:\TX\Projects\Trend_Development\Double_L_Ranch\11_ENV\04-GIS\Site Geologic Map.mxd

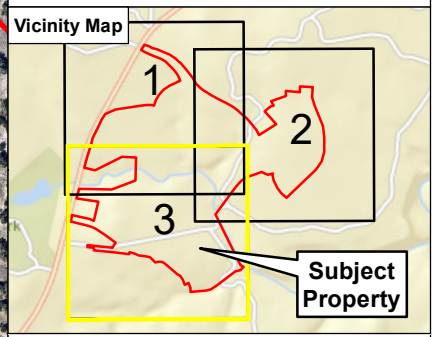
GIS Analyst: csmith2

0 87.5 175
Feet

Legend

- Double L Ranch Parcel 1
- Soil Map Units (NRCS)
- Waterbody (NHD)
- Stream (NHD)
- Roadway
- Dripping Springs City Limit

Vicinity Map



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Double L Ranch Parcel 1

Site Soils Map

Hays County, TX

Date: April 2020 | Proj. No: 5955-00

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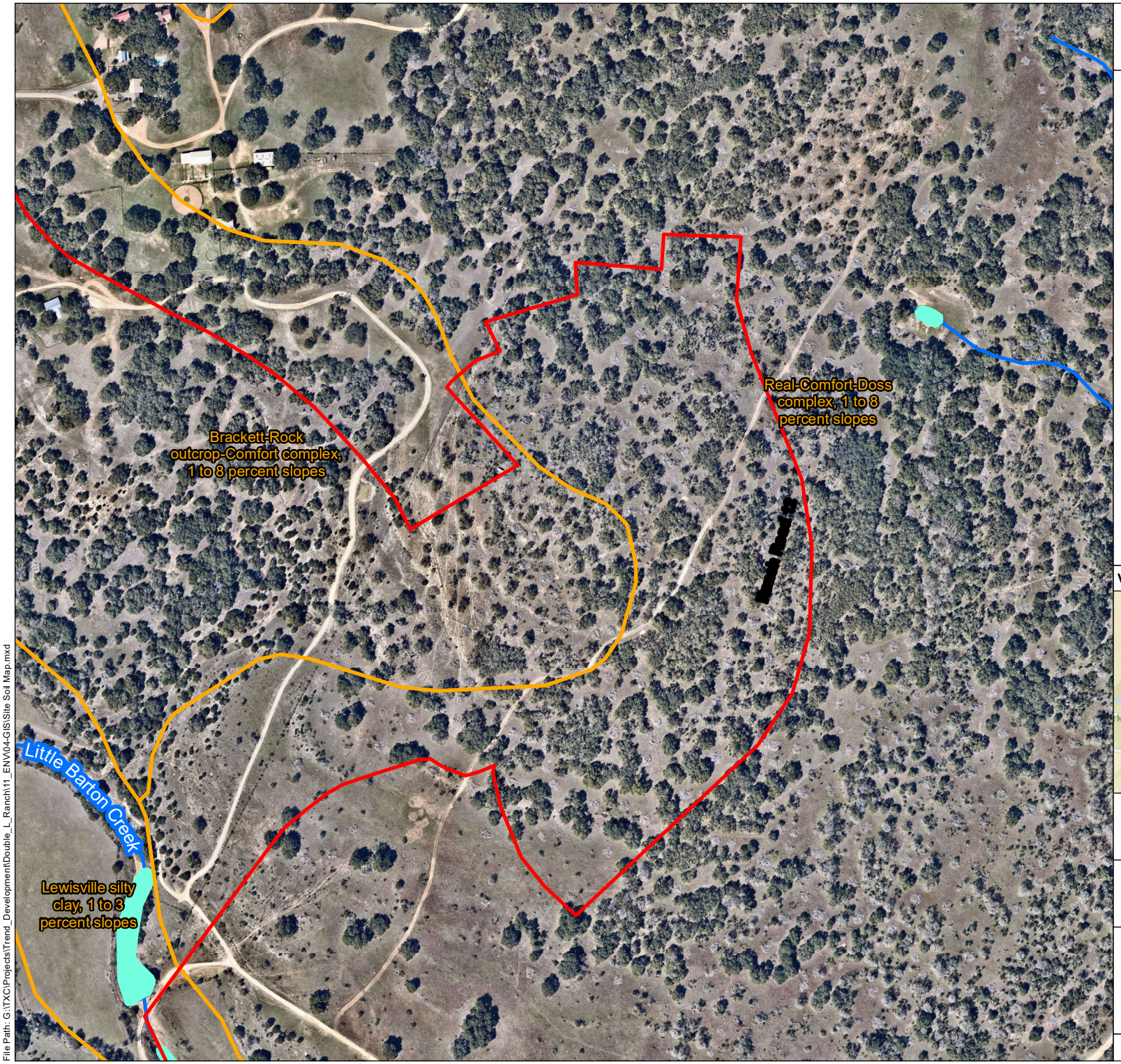
GIS Analyst: csmith2

Aerial Source: Nearmap (2019)



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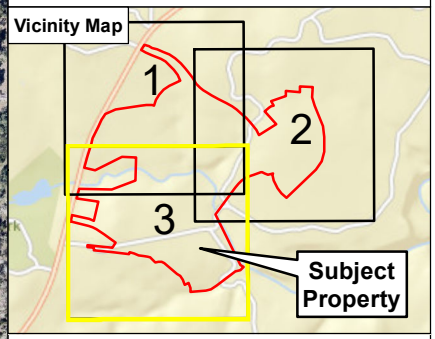

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Double L Ranch Parcel 1

Site Soils Map

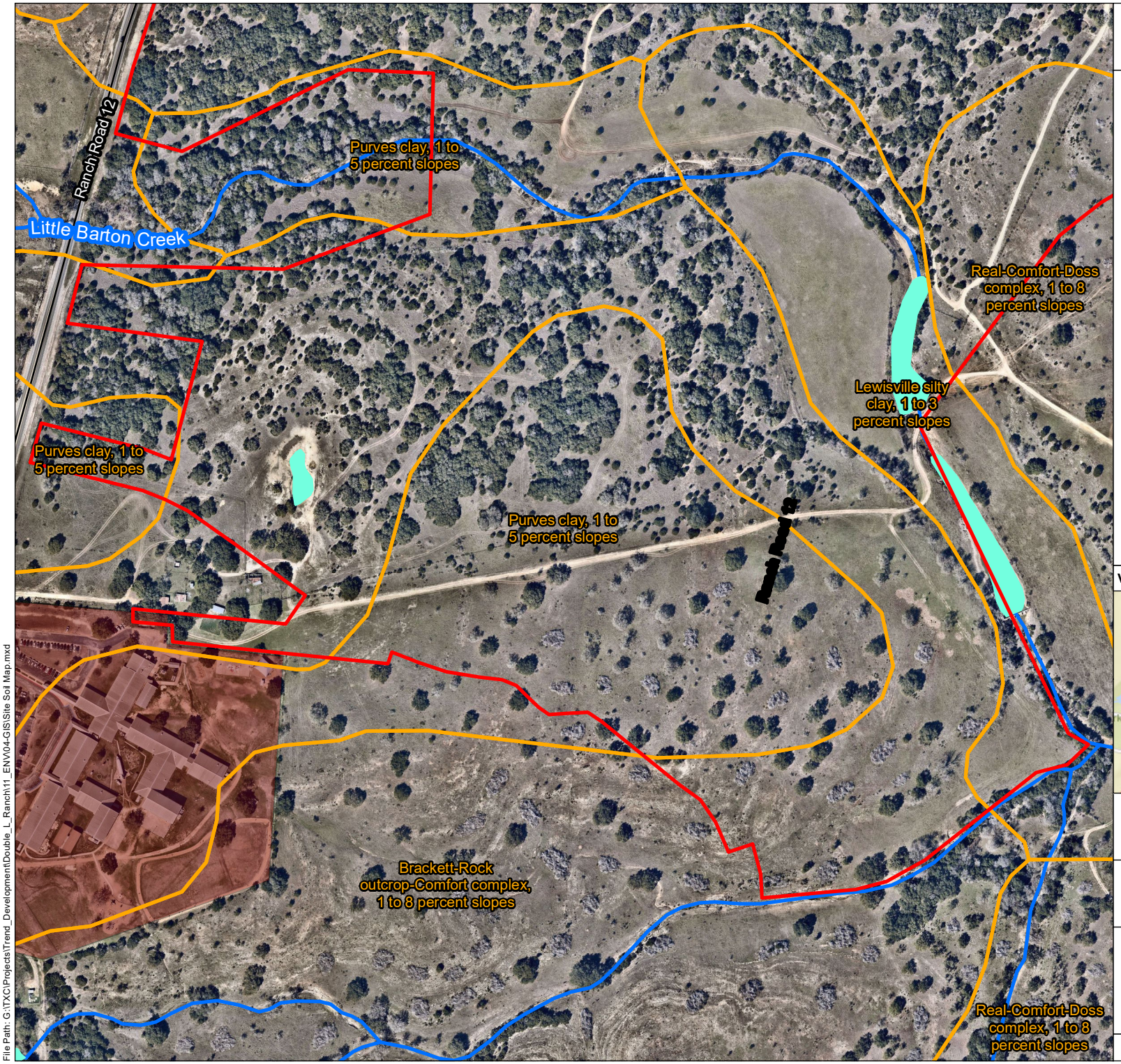
Hays County, TX

Date: April 2020 | Proj. No: 5955-00

File Path: G:\TXC\Projects\Trend_Development\Double_L_Ranch\11_ENV\04-GIS\Site Soil Map.mxd

GIS Analyst: csmith2

Aerial Source: Nearmap (2019)



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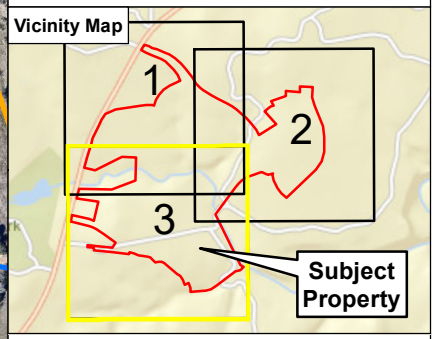

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Double L Ranch Parcel 1

Site Soils Map

Hays County, TX

Date: April 2020 | Proj. No: 5955-00

File Path: G:\TXC\Projects\Trend_Development\Double_L_Ranch\11_ENV\04-GIS\Site Soil Map.mxd

GIS Analyst: csmith2

Aerial Source: Nearmap (2019)

AUTHORIZATION FOR RECLAIMED WATER

Authorization No. REP000009

Producer: Hays County MUD No. 7
101 West Louis Henna Blvd. Suite 400
Austin, Texas 78728

Provider: Hays County MUD No. 7
101 West Louis Henna Blvd. Suite 400
Austin, Texas, 78728

User: Hays County MUD No. 7
101 West Louis Henna Blvd. Suite 400
Austin, Texas, 78728

Location: The reclaimed water production facility is located approximately 2500 linear feet North of the intersection of Ellis Road & Ranch Road 12, in Hays County, Texas.

Authorization: Type I reclaimed water from the Double L Ranch Reclaimed Water Production Facility (Texas Authorization No. EP000009) to be used to irrigate common areas of the Double L Ranch Development, residential landscape, public parks, schoolyards, athletic fields, golf courses, pastures; soil compaction and/or dust control during construction; cooling tower makeup water. The service area is as shown in Section XI, Service Area Map.

This authorization contains the conditions that apply for the use of reclaimed water. The approval of reclaimed water use under Chapter 210 does not affect any existing water rights. If applicable, a reclaimed water use authorization in no way affects the need of a producer, provider, or user to obtain a separate water right authorization from the commission. This authorization does not allow irrigation of any area authorized for irrigation under a Texas Land Application Permit.

Issue Date: May 2, 2024

Kelly Keel, Executive Director

I. General Requirements

A. No producer or provider may transfer reclaimed water to a user without first notifying the commission.

B. Reuse of untreated wastewater is prohibited.

C. Food crops that may be consumed raw by humans must not be spray irrigated. Food crops including orchard crops that will be substantially processed prior to human consumption may be spray irrigated. Other types of irrigation that avoid contact of reclaimed water with edible portions of food crops are acceptable.

D. There must be no nuisance conditions resulting from the distribution, the use, or storage of reclaimed water.

E. Reclaimed water must not be used in a way that degrades groundwater quality to a degree adversely affecting its actual or potential uses.

F. Reclaimed water stored in ponds must be prevented from discharging into waters in the state, except for discharges directly resulting from rainfall events or in accordance with a permit issued by the commission. All other discharges are unauthorized.

G. If an overflow of a holding pond occurs causing discharge into or adjacent to water in the state, the user or provider, as appropriate, shall report the noncompliance. A written submission of pertinent information must be provided to the TCEQ Region 11 office in Austin and to the TCEQ Enforcement Division (MC-149) in Austin, within five (5) working days after becoming aware of the overflow. The submission must contain:

1. a description of the noncompliance and its cause;
2. the potential danger to human health or safety, or the environment;
3. the period of noncompliance, including exact dates and times;
4. if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
5. steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

H. Unless otherwise provided in this authorization, there must be no off-site discharge, either airborne or surface runoff of reclaimed water from the user's property except to a wastewater treatment collection system or wastewater treatment facility unless the reclaimed water user applies for and obtains a permit from the commission that authorizes discharge of the water.

I. All reclaimed water piping must be separated from potable water piping when trenched by a distance of at least nine feet for Type II effluent and four feet For Type I. All buried pipe must be manufactured in purple, painted purple, taped with purple metallic tape or bagged in purple. All exposed piping, hose bibs and faucets must be painted purple, designed to prevent connection to a standard water hose, and stenciled with a warning reading "NON-POTABLE WATER."

J. The design of any new distribution system that will convey reclaimed water to a user requires the approval of the executive director. Materials must be submitted to the executive director in accordance with the Texas Engineering Practice Act

(Article 3271a, Vernon's Annotated Texas Statutes). The plans and specifications for any new distribution system constructed pursuant to this authorization must be approved by the executive director. Failure to secure approval before commencing construction or making a transfer of reclaimed water is a violation of this authorization. Each day of a transfer is a separate violation until approval has been secured.

K. Nothing in this authorization modifies any requirements in 30 TAC Chapter 290, Public Drinking Water.

L. A major change from a prior notification for use of reclaimed water must be approved by the executive director before it can be implemented. A major change includes:

1. a change in the boundary of the approved service area, not including the conversion of individual lots within a subdivision to reclaimed water use;

2. the addition of a new provider;

3. a major change in the intended use, such as conversion from irrigation of a golf course to residential irrigation; or

4. a change from either Type I or Type II use to the other.

M. The reclaimed water producer, provider, and user shall maintain current operation and maintenance plans on the sites over which they have operational control. The operation and maintenance plan must contain the following, as a minimum:

1. a copy of the signed contract between the user and provider and a copy of the signed contract between the provider and the producer, as applicable;

2. a labeling and separation plan for the prevention of cross connections between reclaimed water distribution lines and potable water lines;

3. the measures that will be implemented to prevent unauthorized access to reclaimed water facilities (e.g., secured valves);

4. procedures for monitoring reclaimed water;

5. a plan for how reclaimed water use will be scheduled to minimize the risk of inadvertent human exposure;

6. schedules for routine maintenance;

7. a plan for worker training and safety; and

8. contingency plan for system failure or upsets.

N. One of the following requirements must be met by the user or provider, for any area where reclaimed water is stored or where there are hose bibs or faucets:

1. Signs having a minimum size of eight inches by eight inches must be posted at all storage areas and on all hose bibs and faucets reading, in both English and Spanish, "Reclaimed Water, Do Not Drink" or similar warning.

2. The area must be secured to prevent access by the public.

O. Where a reclaimed water line parallels a sewer line, the reclaimed water line must be constructed in accordance with subsection (p) or (q) of this section. The horizontal separation distance must be three feet (outside to outside) with the reclaimed water line at the level of or above the sewer line. Reclaimed water lines that parallel sewer lines may be placed in the same benched trench. Where a reclaimed water line crosses a sewer line, the requirement of 30 TAC §290.44(e)(4)(B), Water Line Installation—crossing lines, must be followed with the reclaimed water line substituted for the water line.

P. Reclaimed water pipes must meet the following requirements:

1. Lines that transport reclaimed water under pressure must be sized according to acceptable engineering practices for the needs of the reclaimed water users.

2. Reclaimed water force mains must have an expected life of at least as long as that of the associated lift station and must be suitable for the reclaimed water being pumped and operating pressure to which it will be subjected.

3. Pipes must be identified in the technical specifications with appropriate American Society for Testing and Materials, American National Standard Institute, or American Water Works Association standard numbers for both quality control (dimensions, tolerance, and installation such as bedding or backfill).

4. Pipes and fittings must have a minimum working pressure rating of 150 pounds per square inch.

5. Final plans and specifications must describe required pressure testing for all installed reclaimed water force mains.

6. Minimum test pressure must be 1.5 times the maximum design pressure. Allowable leakage rates must be determined as described in 30 TAC §217.97, Pressure Sewer Systems.

7. Gravity flow reclaimed water lines must meet the requirements of 30 TAC Chapter 217, Subchapter C, Conventional Collection Systems. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines.

Q. All exposed piping and piping within a building must be either purple pipe or painted purple. All exposed piping should be stenciled in white with a warning reading "NON-POTABLE WATER. All exposed or buried reclaimed water piping constructed at a wastewater treatment facility is exempt from the color-coding requirement of this section.

R. When applicable, in accordance with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems, the design of the distribution systems that will convey reclaimed water to a user must be submitted to the executive director and must receive an approval before the distribution system may be constructed. The design of the distribution systems must meet the criteria of 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. When a municipality is the plan review authority for certain sewer systems that transport primarily domestic waste, in lieu of the commission, design submittal will not be subject to submittal to the commission and instead must be approved by the municipality.

S. All ground level and elevated storage tanks must be designed, installed, and constructed in accordance with current AWWA standards with reference to materials to be used and construction practices to be followed, except for health-based standards strictly related to potable water storage and contact practices, where appropriately less restrictive standards may be applied.

II. Storage Requirements for Reclaimed Water

A. Storage facilities for retaining reclaimed water prior to use must not be located within a floodway.

B. Storage ponds must be hydraulically separated from waters in the state.

C. Any holding pond designed to contain Type I, shall conform to the following requirements:

1. Ponds with an earthen liner must meet the following requirements

    a. A permeability of less than 1×10^{-4} cm/sec;

    b. The ponds must be designed and constructed to prevent groundwater contamination;

    c. Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and

    d. All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density;

    e. Soil liners must meet the following particle size gradation and Atterberg limits:

        i. 30% or more passing a number 200 mesh sieve; and
        ii. a liquid limit of 30% or greater; and
        iii. a plasticity index of 15 or greater;

    f. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-4} cm/sec are acceptable alternatives; In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

D. Any holding pond containing reclaimed water located within the recharge zone of the Edward Aquifer or designed to contain Type II effluent and is located within a DRASTIC Pollution Potential Index Zone of 110 or greater, shall conform to the following requirements:

1. Ponds with an earthen liner must meet the following requirements

a. A permeability of less than 1 x 10^{-7} cm/sec;

b. The ponds must be designed and constructed to prevent groundwater contamination;

c. Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and

d. All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density;

e. Soil liners must meet the following particle size gradation and Atterberg limits:

i. 30% or more passing a number 200 mesh sieve; and
ii. a liquid limit of 30% or greater; and
iii. a plasticity index of 15 or greater;

f. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1 X 10^{-7} cm/sec are acceptable alternatives; In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

E. **All earthen liners located in areas overlying the recharge zones of major or minor aquifiers, as defined by the Texas Water Development Board, shall be at least 36 inches thick meeting permeability less than or equal to 1 X 10-7 cm/sec.**

F. Synthetic membrane linings must have a minimum thickness of 40 mils and have a leak detection system;

G. Certification by a Texas licensed professional engineer must be furnished stating that the pond liner meets the appropriate criteria prior to use of the facilities;

H. Soil embankment walls must have a top width of at least five feet. The interior and exterior slopes of soil embankment walls must be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are used. All soil embankment walls must be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals must be installed on all pipe penetrating the embankments; and

I. An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director; and

J. Reclaimed water may be stored in leak-proof, fabricated tanks;

K. Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of groundwater for its actual or intended use will be also subject to the storage requirements of this section.

III. Specific Uses and Quality Standards for Reclaimed Water

A. Numerical parameter limits pertaining to specific reclaimed water use categories are contained in this section. These limits apply to reclaimed water before discharge to initial holding ponds or a reclaimed water distribution system.

B. The reclaimed water producer shall establish that the reclaimed water meets the quality limits at the sample point for the intended use in accordance with the monitoring requirements identified in Section IV, Sampling and Analysis.

C. Types and quality standards for reclaimed water.

1. Type I Reclaimed Water Use. The use of Type I reclaimed water is for situations where the public may come in contact with the reclaimed water. The uses allowed by this authorization are:

a. Irrigation of common areas of the Double L Ranch Development, residential landscape, public parks, schoolyards, athletic fields, golf courses, pastures.

b. Cooling tower makeup water.

c. Soil compaction and / or dust control during construction.

2. The following conditions apply to Type I use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality as described for Type I reclaimed water use. Type I reclaimed water on a 30-day average must have a quality of no more than:

Table 1. Type I Quality Requirements

Parameter	Limit	Limit Type
Turbidity	3 NTUs	30-day average
BOD_5	5 mg/l	30-day average
E. coli	20/100 ml	30-day geometric mean (MPN or CFU)
E. coli	75/100 ml	maximum single grab sample (MPN or CFU)

D. Test Procedures

1. Test procedures for the analysis of pollutants must comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations must accurately represent the reclaimed water.

2. All laboratory tests submitted to demonstrate compliance with this authorization must meet the requirements of 30 TAC Chapter 25, *Environmental Testing Laboratory Accreditation and Certification*.

IV. Sampling and Analysis

A. The reclaimed water producer shall sample the reclaimed water prior to

distribution to the entity that first received the reclaimed water after it leaves the wastewater treatment facility (provider or user) to assure that the water quality meets the standard for the contracted use.

B. Analytical methods must be in compliance with 30 TAC Chapter 319, *Monitoring and Reporting*.

C. The minimum sampling and analysis frequency for Type I reclaimed water is twice per week when reclaimed water is being produced and shall be reported as outfall 800.

D. The monitoring must be done after the final treatment unit.

E. The records of the monitoring must be kept on a monthly basis and be available at the facility site for inspection by representatives of the Commission for at least five years.

V. Record Keeping and Reporting

A. The reclaimed water provider and user shall maintain records on site for a period of at least five years.

B. The producer shall maintain the following records:

1. copies of notifications made to the commission concerning reclaimed water projects;

2. as applicable, copies of contracts with each reclaimed water user (this requirement does not include reclaimed water users at residences that have separate distribution lines for potable water);

3. records of the volume of water delivered to each reclaimed water user per delivery (this requirement does not apply to reclaimed water users at residences that have separate distribution lines for potable water); and

4. reclaimed water quality analyses.

C. The reclaimed water provider or producer shall report to the commission on a monthly basis the following information on forms furnished by the executive director. The reports are due by the 20th day of the month following the reporting period.

1. volume of reclaimed water delivered to each user; and

2. quality of reclaimed water delivered to a user or provider reported as a monthly average for each quality criteria, except those listed as "not to exceed" that must be reported as individual analyses.

D. Monitoring requirements contained in the authorization are suspended from the effective date of the authorization until the reclaimed water is transferred. The provider shall provide written notice to the Water Quality Application Team (MC 148) and the appropriate TCEQ regional office at least thirty (30) days prior to transfer of reclaimed water.

VI. Transfer of Reclaimed Water

A. Reclaimed water must be transferred from a provider to a user on a demand only basis. A reclaimed water user may refuse delivery of reclaimed water at any time.

B. All reclaimed water transferred to a user must be of at least the quality specified in Section IV, *Sampling and Analysis*.

C. Transfer must be by pipes or tank trucks.

D. The transfer of reclaimed water must be terminated immediately if a provider becomes aware of the misuse of the reclaimed water by the user, regardless of contract provisions.

VII. Restrictions

A. This authorization does not convey any property right and does not grant any exclusive privilege.

B. This authorization does not allow the use of reclaimed water on land that is authorized as a disposal site under either a Texas Pollutant Discharge Elimination System (TPDES) permit or a Texas Land Application Permit (TLAP).

VIII. Responsibilities and Contracts

A. The producer of reclaimed water is not liable for misapplication of reclaimed water by users, except as provided in this section. Both the reclaimed water provider and user have at least but are not limited to the following responsibilities:

1. The reclaimed water producer shall: transfer reclaimed water of at least the minimum quality required by this authorization at the point of delivery to the user;

    a. sample and analyze the reclaimed water and report the analyses in accordance with Section IV, Sampling and Analysis, and Section V, Recordkeeping and Reporting; and

    b. notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director.

2. The reclaimed water provider shall:

a. ensure construction of reclaimed water distribution systems in accordance with 30 TAC Chapter 217, Design of Domestic Wastewater Systems, and in accordance with approved plans and specifications;

b. transfer reclaimed water of at least the minimum quality required by this authorization at the point of delivery to the user;

c. notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director; and

d. not be found in violation of this authorization for the misuse of the reclaimed water by the user if transfer of such water is shut off promptly upon knowledge of misuse regardless of contract provisions.

3. The reclaimed water user shall:

a. use the reclaimed water in accordance with this authorization; and

b. maintain and provide records as required by Section V, Record Keeping and Reporting.

IX. Enforcement

If the producer, provider, or user fail to comply with the terms of this authorization, the executive director may take enforcement action provided by the Texas Water Code §26.019 and §26.136.

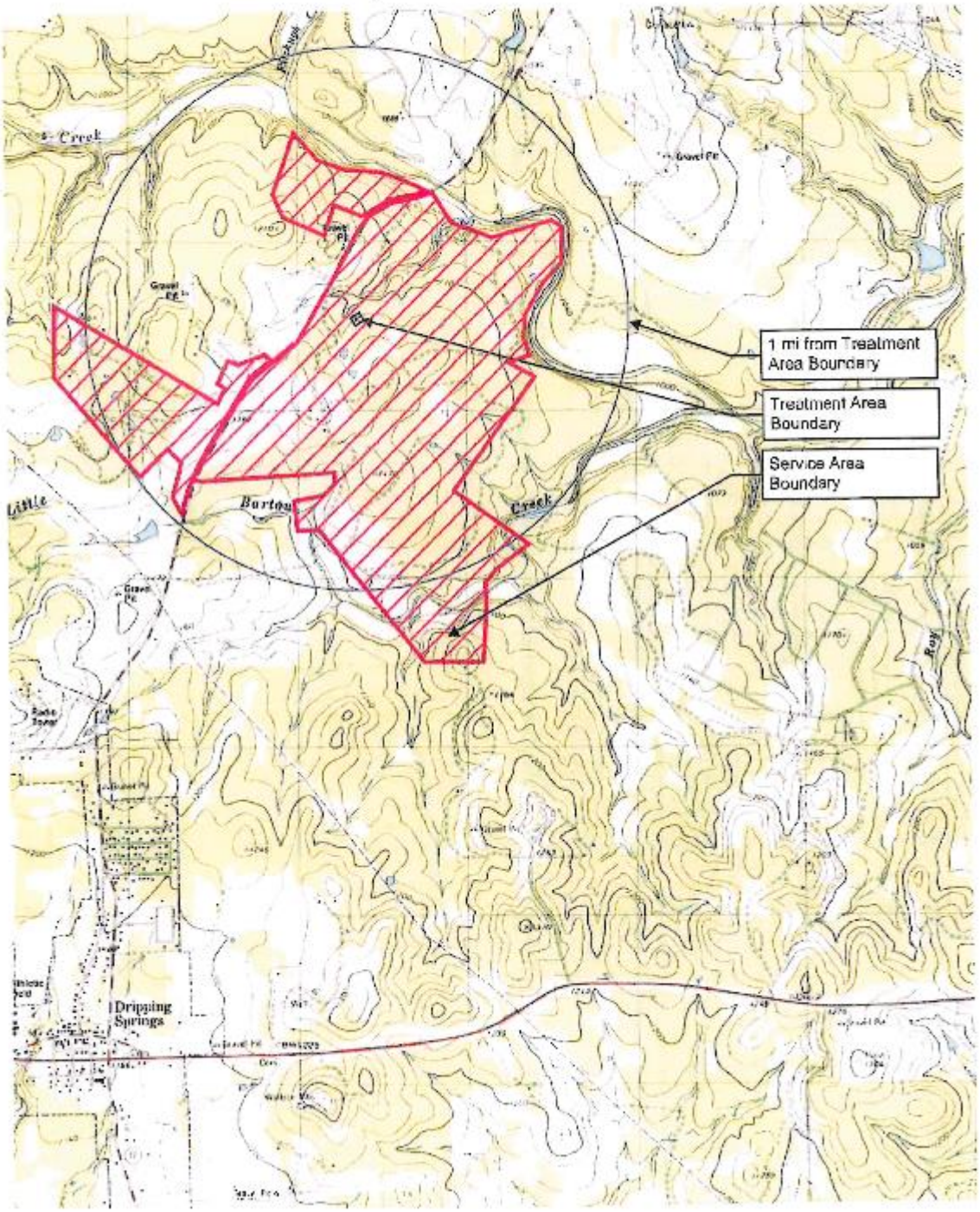
X. Standard Provisions

A. This authorization is granted in accordance with the rules and orders of the commission and the laws of the state of Texas.

B. Acceptance of this authorization constitutes an acknowledgment and agreement that the producer, provider and user will comply with all the terms, provisions, conditions, limitations and restrictions embodied in this authorization and with the rules and other orders of the commission and the laws of the state of Texas. Agreement is a condition precedent to the granting of this authorization.

XI. Service Area Map

Double L Reclaimed Water Production Facility
Service Area Map



AUTHORIZATION FOR THE CONSTRUCTION AND OPERATION OF A RECLAIMED WATER PRODUCTION FACILITY

Authorization No. EP000009

Permittee: Hays County MUD No. 7
101 West Louis Henna Blvd Suite 400
Austin, Texas 78728

Location: The Double L Ranch Reclaimed Water Production Facility is located approximately 2500 linear feet North of the intersection of Ellis Road & Ranch Road 12, in Hays County, Texas.

Association: This authorization is associated with the city of Dripping Springs South Regional Wastewater Facility (TPDES Permit No. WQ0014488001). Hays County MUD No. 7 will discharge all sludges to the City of Dripping Springs collection system.

This authorization contains the conditions that apply for the construction and operation of a reclaimed water production facility.

If the wastewater discharge permit for the domestic wastewater treatment facility or the reclaimed water authorization associated with this reclaimed water production facility expires, lapses, is surrendered, suspended, or revoked, the authorization to operate the reclaimed water production facility is automatically cancelled.

Issue Date: May 2, 2024

Kelly Keel Executive Director

I. Standard Provisions

A. This authorization is granted in accordance with the rules and orders of the commission and the laws of the state of Texas.

B. Acceptance of this authorization constitutes an acknowledgment and agreement that the permittee will comply with all the terms, provisions, conditions, limitations, and restrictions embodied in this authorization and with the rules and other orders of the commission and the laws of the state of Texas. Agreement is a condition precedent to the granting of this authorization.

C. This authorization to operate is subject to all the requirements that are in the associated domestic wastewater facility permit and the reclaimed water authorization, except as noted in this authorization.

II. General Requirements

A. The reclaimed water production facility may not discharge wastewater or pollutants into water in the state.

B. The hydraulic capacity of the reclaimed water production facilities may not individually nor collectively exceed the permitted hydraulic capacity of the associated domestic wastewater treatment facility.

C. The reclaimed water production facility may not cause a flow rate that could cause interference with the operation of the domestic wastewater treatment facility or a violation of the domestic wastewater treatment facility's permit.

D. The reclaimed water production facility may not treat or dispose of sludge. All sludges must be conveyed through the collection system to the permitted domestic wastewater treatment facility, treated, and disposed of in accordance with the facility's permit and all applicable rules.

E. The permittee may not accept trucked or hauled wastes at a reclaimed water production facility.

F. This authorization does not convey or alter any property right and does not grant any exclusive privilege.

G. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater facility operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Subchapter J (Wastewater Operators and Operations Companies).

H. The permittee shall notify the executive director at least 45 days prior to completion and at least 45 days prior to operation of a reclaimed water production facility.

I. The permittee is hereby placed on notice that this authorization may be reviewed by the TCEQ after the completion of revision to 30 TAC Chapter 321 Subchapter P to determine if the limitations and conditions contained herein are consistent with revised rules. The authorization it may be amended, pursuant to 30 TAC § 305.62, as a result of such review.

III. Operational Requirements

A. The permittee is authorized to treat up to 0.072 million gallon per day of domestic wastewater to a Type I reclaimed water quality.

B. The reclaimed water production facility consists of an activated sludge wastewater treatment plant with the following units: a covered equalization tank, a biological treatment system consisting of an anoxic tank, one pre-aeration tank, and two MBR zones in series, UV disinfection, and various chemical feed systems. The sludge from the treatment process is pumped to the collection to be treated at the City of Dripping Springs Wastewater Treatment Facility (TPDES Permit No. WQ0014488001).

IV. Design Requirements

A. Plans and specifications for a reclaimed water production facility must meet the design criteria and the operation, maintenance, and safety requirements in 30 TAC Chapter 217 (Design Criteria for Wastewater Treatment Systems) except for redundant treatment units or processes, including power supplies, if the design incorporates sufficient provisions to ensure the effluent quality meets the required limits in the event of a failure of a power supply or a treatment unit or process.

B. The reclaimed water production facility must be designed to convey all wastewater to the domestic wastewater treatment facility any time the facility is not in operation.

C. The reclaimed water production facility must be designed to convey all sludge received or produced by the facility to the domestic wastewater treatment facility. Sludge may be held in an aerated storage vessel for discharge to the collection system if the entire sludge contents are completely discharged at least once within every 24-hour period.

D. The reclaimed water production facility must be designed and operated to minimize odor and other nuisance conditions.

E. The following treatment processes and units are prohibited:

1. unaerated primary treatment units (including Imhoff tanks and primary clarifiers);
2. trickling filters;
3. pond or lagoon treatment systems;
4. flow equalization basins; and
5. unenclosed screenings storage containers.

V. Buffer Zone

A. This authorization is approved under the enhanced buffer zone requirements. The permittee must maintain the enhanced buffer zone designation, for the reclaimed water production facility, with the following buffer zone requirements:

1. A treatment unit not located in a building may not be located closer than 300 feet to the nearest property line.

2. A treatment unit located within an enclosed building that is not equipped with exhaust air systems and odor control technology may not be located closer than 150 feet of the nearest property line; or

3. A treatment unit located within an enclosed building equipped with exhaust air systems and odor control technology may not be located closer than 50 feet of the nearest property line.

B. The permittee must own or have sufficient property interest to the land necessary to meet the buffer zone requirements so that residential structures are prohibited within the buffer zone. The permittee must maintain sufficient evidence of its property interest to demonstrate the reclaimed water production facility meets the applicable buffer zone.

C. The authorization will expire if the permittee fails to maintain the enhanced buffer zone.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 2, 2024

Mr. Joseph Yaklin.
Hays County MUD No. 7
101 West Louis Henna Boulevard, Suite 400
Austin, Texas 78728

RE: The Double L Ranch Reclaimed Water Production Facility
Reclaimed Water Production Authorization EP#0000009
Reuse Authorization No. REP0000009
Chapter 217 P/S Log Number 0324/076
Hays County MUD No. 7.

Dear Mr. Yaklin:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the application for the above referenced authorizations. The authorizations allow for the construction and operation of the Double L Ranch Reclaimed Water Production Facility, the approval of the plans and specifications from this facility, and the reuse of Type I wastewater effluent.

Thank you for your cooperation during this review process. If you have any questions, please feel free to contact me or Dr. Baltazar Lucero-Ramirez, P.E., of my staff, at baltazar.lucero-ramirez@tceq.texas.gov or (512) 239-4924.

Sincerely,

Erika Crespo
Assistant Deputy Director
Water Quality Division (MC-148)
512-239-1827
erika.crespo@tceq.texas.gov

EC/BLR/sh

bcc: Baltazar Lucero-Ramirez, Wastewater Permitting Section
TCEQ, Region 11

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 2, 2025

Mr. Robert Fondren
Double L Development, LLC
1600 West Loop S., Ste. 2600
Houston, TX 77027

Re: Approval of a Contributing Zone Plan with Optional Enhanced Measures (CZP-OEM)
Double L Ranch Phase 1; Located 1.5 Mi N of US 290 and RR 12; Dripping Springs (ETJ), Williamson County, Texas
Edwards Aquifer Protection Program ID No. 11004376; Regulated Entity No. RN111556569

Dear Mr. Fondren:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the application for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by BGE, Inc. on behalf of the applicant, Double L Development, LLC, on March 24, 2025. Final review of the application was completed after additional material was received on April 23, 2025, April 30, 2025, and May 1, 2025.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213. The permanent best management practices (BMPs) and measures represented in the application were prepared by a Texas licensed professional engineer (PE). All construction plans and design information were sealed, signed, and dated by a Texas licensed PE. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are **approved,** subject to applicable state rules and the conditions in this letter.

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this contributing zone plan or modification to a plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 219.76 acres. The project will include the construction of a subdivision with 244 single-family lots, an amenity center, drives and roadways, drainage improvements, utilities, and associated appurtenances. The impervious cover will be 61.25 acres (27.87 percent). Project wastewater will be disposed of by conveyance to the existing City of Dripping Springs Wastewater Treatment Plant.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, five batch detention basins (Pond 1A – Pond 1E), designed using the TCEQ technical guidance, *RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* and *RG-348A Optional Enhanced Measures for the Protection of Water Quality in the Edward Aquifer (Revised),* will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 55,989 pounds of TSS generated from the 61.25 acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The permanent BMPS shall be operational prior to occupancy or use of the proposed project. Inspection, maintenance, repair, and retrofit of the permanent BMPs shall be in accordance with the approved application.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial unit of the site is the Upper Glen Rose Formation (Kgr(u)). No sensitive geologic features were identified in the GA. The site assessment conducted on April 10, 2025, by TCEQ staff determined the site to be generally as described by the GA.

STANDARD CONDITIONS

1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and all technical specifications in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, Dam Safety, Underground Injection Control) as required based on the specifics of the plan.

2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

Prior to Commencement of Construction:

3. The plan holder of any approved contributing zone plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.

4. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity. Notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.

5. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. The application must indicate the placement of permanent aboveground storage tanks facilities for static hydrocarbons and hazardous substances with cumulative storage capacity of 500 gallons or more. Subsequent permanent storage tanks on this project site require a modification to be submitted and approved prior to installation.

7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

8. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.

9. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

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

After Completion of Construction:

11. Owners of permanent BMPs and temporary measures must ensure that the BMPs and measures are constructed and function as designed. A Texas licensed PE **must certify** in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the EAPP within 30 days of site completion.

12. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.

The holder of the approved contributing zone plan is responsible for compliance with Chapter §213 subchapter B and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 subchapter B and is subject to administrative rule or orders and penalties as provided under §213.25 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved contributing zone plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Colin Gearing of the Edwards Aquifer Protection Program at 512-239-7015 or the regional office at 512-339-2929.

Sincerely,

Monica Reyes

Monica Reyes, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

MR/cmg

cc: Ms. Stacy Mulholland, P.E., BGE, Inc.