Contributing Zone Plan



Contributing Zone Plan

Double L Ranch Phase 1

Prepared for: Double L Ranch Phase 1

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.

Our Review of Your Application

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

Administrative Review

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

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

- 2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
- 3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
- 4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

- 5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
- 6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

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

- 2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.
- 3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or if not withdrawn the application will be denied and 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 to you:

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- 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 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 effected 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 Phase 1				2. Regulated Entity No.:				
3. Customer Name: Double L Development, LLC			4.	4. Customer No.:				
5. Project Type: (Please circle/check one)	New	Modif	icatior	1	Ex n	tensio	Exception	
6. Plan Type: (Please circle/check one)	WPAP CZP	SCS	UST	AST	E X	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential	Non-r	Non-residential 8. Sit		e (acres):	219.758		
9. Application Fee:	\$ 8,000	10. P	10. Permanent BMP(s):			s):	Batch Detentio	n
11. SCS (Linear Ft.):		12. A	12. AST/UST (No. Tanks):			nks):		
13. County:	Hays	14. W	14. Watershed:		Little Barton C	reek		

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.)	Х		
County(ies)			_
Groundwater Conservation District(s)	Edwards Aquifer Authority Barton Springs/ Edwards Aquifer Hays Trinity Plum Creek	Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	Austin Buda _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

	Sa	an Antonio Region			
County:	Bexar	Comal	Kinney	Medina	Uvalde
Original (1 req.)					
Region (1 req.)					
County(ies)					
Groundwater Conservation District(s)	Edwards Aquifer Authority Trinity-Glen Rose	Edwards Aquifer Authority	Kinney	EAA Medina	EAA Uvalde
City(ies) Jurisdiction	Castle Hills Fair Oaks Ranch Helotes Hill Country Village Hollywood Park San Antonio (SAWS) Shavano Park	Bulverde Fair Oaks Ranch Garden Ridge New Braunfels Schertz	NA	San Antonio ETJ (SAWS)	NA

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

Pablo H Martinez, P.E.

Print Name of Customer/Authorized Agent

Signature of Customer/Authorized Agent

6/15/22 Date

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

Date: <u>June 15, 2022</u>

Signature of Customer/Agent:

Regulated Entity Name: Double L Ranch Phase 1

Project Information

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

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

TCEQ-10257 (Rev. 02-11-15)

5. Agent/Representative (If any):

Contact Person: Pablo H. Martinez, P.E.Entity: BGE, Inc.Mailing Address: 1701 Directors Blvd, Suite 1000City, State: Austin, TXZip: 78744Telephone: 512-879-0428Fax: _____Email Address: pmartinez@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 <u>City of Dripping Springs</u>.
 - 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 Road 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: <u>107</u>
 Commercial
 Industrial

Other: _____

13. Total project area (size of site): 219.758 Acres

Total disturbed area: 61.25 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	1,279,793	÷ 43,560 =	29.38
Parking		÷ 43,560 =	
Other paved surfaces	1,388,257	÷ 43,560 =	31.87
Total Impervious Cover	2,668,050	÷ 43,560 =	61.25

Total Impervious Cover 61.25 ÷ Total Acreage 219.758 X 100 = 27.87% 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.	Туре	of	project:
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TXDOT road project. County road or roads built to county specifications. City thoroughfare or roads to be dedicated to a municipality. Street or road providing access to private driveways. 19. Type of pavement or road surface to be used: Concrete Asphaltic concrete pavement Other: 20. Right of Way (R.O.W.): Length of R.O.W.: _____ feet. Width of R.O.W.: feet. $L \times W = Ft^2 \div 43,560 Ft^2/Acre = acres.$ 21. Pavement Area: Length of pavement area: _____ feet. Width of pavement area: feet. $L \times W = Ft^2 \div 43,560 Ft^2/Acre = acres.$ Pavement area acres ÷ R.O.W. area acres x 100 = % impervious cover.

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

A rest stop will not be included in this project.

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

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 <u>City of Dripping Springs</u> (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			
	•	1	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. \square The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = <u>100</u>'.

35. 100-year floodplain boundaries:

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

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

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): -------F, 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. \square A drainage plan showing all paths of drainage from the site to surface streams.
- 38. 🖂 The drainage patterns and approximate slopes anticipated after major grading activities.
- 39. \boxtimes Areas of soil disturbance and areas which will not be disturbed.
- 40. 🔀 Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
- 41. 🛛 Locations where soil stabilization practices are expected to occur.
- 42. Surface waters (including wetlands).

🗌 N/A

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

There will be no discharges to surface water.

44. Temporary aboveground storage tank facilities.

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

45. Permanent aboveground storage tank facilities.

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

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

Permanent Best Management Practices (BMPs)

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

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

🗌 N/A

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

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

N/A

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

N/A

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

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

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

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

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

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

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

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

52. X Attachment J - BMPs for Upgradient Stormwater.

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

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

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

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

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

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

N/A

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

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

____N/A

56. X 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 RMPs and

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

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

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

Administrative Information

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



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



DRIPPING SPRINGS QUADRANGLE TEXAS 7.5-MINUTE SERIES





Attachment C - Project Narrative

Double L Phase 1 is a 219.758-acre development consisting of 244 single family residential lots and one amenity center unit along with their required private and public improvements. Improvements include construction of private internal circulation routes, private and public water, wastewater, drainage, and water quality facilities. The project site is within the City of Dripping Springs Extra Territorial Jurisdiction, Hays County, located approximately 2.0 miles due North from the intersection of US 290 and Ranch Road 12. According to the Federal Emergency Management Agency (FEMA) flood insurance rate map #48209C0105F, dated September 2, 2005, a portion of the site lies within the 100-year floodplain.

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 3,929.54 acres, 219.785 acres of which originate onsite. Impervious cover accounts for 61.25 acres of the total drainage area. Hydrologic calculations can be found in the attached Drainage Area Map. In the existing condition the site produces 31492.7 cfs of run-off during the 100-year event. That runoff decreases to 30609.3 cfs in the proposed condition. An engineered storm water system is proposed to return drainage to follow existing drainage patterns and detention is provided in the way of a storm water detention pond. Design features, storage tables, and water surface elevations are provided in the attached construction plans.

Drainage area maps and calculations are provided with this attachment.

Stormwater character may be impacted during construction, but the temporary BMPs proposed will serve to minimize this impact.

Permanent, (Batch Detention) BMPS are being proposed for this project.

Upon exiting the site, existing drainage patterns will be maintained. No additional runoff is generated as a result of the proposed condition.

Attachment E1 – Volume and Character of Stormwater – Calculations

	EXISTING BASIN DATA									
BASIN	AREA	AREA	CN	ΤL	Q ₂	Q ₁₀	Q ₂₅	Q ₁₀₀		
	(AC)	(mi ²)		(min)	(cfs)	(cfs)	(cfs)	(cfs)		
EX-10	1187.97	1.856203	82.79	31.24	1,469.40	2,976.90	4,167.30	6,491.80		
EX-20	266.45	0.416328	80.05	11.87	458.70	969.40	1,378.20	2,179.50		
EX-30	632.22	0.987844	86.57	23.21	1,033.10	1,970.40	2,699.40	4,117.00		
EX-40	720.01	1.125016	82.37	33.55	843.70	1,721.90	2,416.20	3,775.30		
EX-50	637.47	0.996047	83.36	29.47	830.00	1,665.60	2,323.60	3,607.40		
EX-60	485.42	0.758469	81.81	21.03	704.30	1,447.60	2,037.10	3,189.40		

EXISTING HEC-HMS OUTPUT							
	Q2	Q ₁₀	Q ₂₅	Q ₁₀₀			
	(cfs)	(cfs)	(cfs)	(cfs)			
(LEAVING DOUBLE L PROPERTY) POA 1	3,112.00	6,246.40	8,718.10	13,545.80			
(CONNECTION TO BARTON CREEK) POA 2	4,092.90	8,247.30	11,530.10	17,946.90			

	PROPOSED BASIN DATA									
BASIN	AREA	AREA	CN	ΤL	Q2	Q ₁₀	Q ₂₅	Q ₁₀₀		
	(AC)	(mi ²)		(min)	(cfs)	(cfs)	(cfs)	(cfs)		
PR-10	1187.97	1.856203125	82.79	31.24	1,469.40	3,016.60	4,167.30	6,491.80		
PR-BYPASS	109.87	0.171671875	84.96	16.95	198.40	393.10	536.20	824.50		
PR-20A	75.65	0.118203125	83.97	3.00	191.60	392.00	522.10	804.30		
PR-20B	27.34	0.04271875	86.96	3.00	79.60	151.90	204.50	310.40		
PR-20C	33.24	0.0519375	82.18	3.00	82.80	169.90	234.60	365.00		
PR-20D	64.06	0.10009375	86.99	3.00	184.30	356.00	472.40	716.40		
PR-30	604.17	0.944015625	86.94	23.21	998.80	1,917.90	2,590.70	3,943.90		
PR-40	717.68	1.121375	82.43	33.55	842.90	1,741.50	2,410.60	3,765.20		
PR-50	637.47	0.996046875	83.36	29.47	830.00	1,687.50	2,323.60	3,607.40		
PR-60	472.16	0.73775	81.94	21.03	688.40	1,431.00	1,985.30	3,105.80		

PROPOSED HEC-HMS OUTPUT								
	Q ₂	Q ₁₀	Q ₂₅	Q ₁₀₀				
	(cfs)	(cfs)	(cfs)	(cfs)				
(LEAVING DOUBLE L PROPERTY) POA 1	3,070.20	6,119.50	8,518.30	13,204.20				
(CONNECTION TO BARTON CREEK) POA 2	4,040.60	8,061.30	11,225.40	17,405.10				

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 any runoff originating in this area, after running flowing through natural vegetation, will not require further treatment by engineered measures.

Attachment K – BMPs for On-Site Stormwater

Stormwater treatment is provided by batch detention basins.

Calculations for the five (5) batch detention basins are included in this attachment, and are summarized below.

The proposed batch detention basin 1-A will treat a drainage basin of 20.07 acres. There are 0.0 acres of existing impervious cover. The proposed impervious cover this basin will treat is 6.41 acres. As designed, the basin provides 5,861 lbs of TSS removal, requiring a water quality volume of 38,515 cf, resulting in a required capacity of 32,096 cf at the water quality elevation. As shown in the attached construction plans, the proposed wet basin provides a total capacity at the water quality elevation of 38,892 cf. Additional pond volume (above the water quality elevation) provides detention for the site. The proposed batch detention basin 1-B will treat a drainage basin of 22.42 acres. There are 0.0 acres of existing impervious cover. The proposed impervious cover this basin will treat is 8.58 acres. As designed, the basin provides 7,841 lbs of TSS removal, requiring a water guality volume of 50,203 cf, resulting in a required capacity of 41,836 cf at the water guality elevation. As shown in the attached construction plans, the proposed wet basin provides a total capacity at the water quality elevation of 136,046 cf. Additional pond volume (above the water quality elevation) provides detention for the site. The proposed batch detention basin 1-C will treat a drainage basin of 46.58 acres. There are 0.0 acres of existing impervious cover. The proposed impervious cover this basin will treat is 11.16 acres. As designed, the basin provides 10,204 lbs of TSS removal, requiring a water quality volume of 70,524 cf, resulting in a required capacity of 70,524 cf at the water quality elevation. As shown in the attached construction plans, the proposed wet basin provides a total capacity at the water quality elevation of 79,952 cf. Additional pond volume (above the water quality elevation) provides detention for the site. The proposed batch detention basin 1-D will treat a drainage basin of 25.94 acres. There are 0.0 acres of existing impervious cover. The proposed impervious cover this basin will treat is 9.77 acres. As designed, the basin provides 8,927 lbs of TSS removal, requiring a water quality volume of 57,279 cf, resulting in a required capacity of 57,279 cf at the water quality elevation. As shown in the attached construction plans, the proposed wet basin provides a total capacity at the water quality elevation of 93,437 cf. Additional pond volume (above the water quality elevation) provides detention for the site. The proposed batch detention basin 1-E will treat a drainage basin of 469.43 acres. There are 0.0 acres of existing impervious cover. The proposed impervious cover this basin will treat is 153.58 acres. As designed, the basin provides 19,261 lbs of TSS removal, requiring a water quality volume of 119,510 cf, resulting in a required capacity of 119,510 cf at the water quality elevation. As shown in the attached construction plans, the proposed wet basin provides a total capacity at the water quality elevation of 130,946 cf. Additional pond volume (above the water quality elevation) provides detention for the site.

TSS Removal	Calculations
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Project Name: Double L - Ph. 1 Date Prepared: 5/25/2022

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:	Calculation	s from RG-348		Pages 3-27 to 3-30	
Page 3-29 Equation 3.3: I	- _M = 27.7(A _N x F	>)			
where: L _{M TOTAL PROJE}	_{CT} = Required T A _N = Net increas P = Average a	SS removal res in impervious nnual precipitation	sulting from the propose area for the project on, inches	ed development = 80% of inc	reased load
Site Data: Determine Required Load Removal Based on the Entire Pr Cour Total project area included in plan	oject ty = Hays * = 469.43	acres			
Predevelopment impervious area within the limits of the plar Total post-development impervious area within the limits of the pla Total post-development impervious cover fraction	n* = 0.00 n* = 152.37 n* = 0.32 P = 33	acres acres inches			
L _{M TOTAL PROJE} * The values entered in these fields should be for the total project are	_{ст} = 139285 а.	lbs.			
Number of drainage basins / outfalls areas leaving the plan are	ea = 5				
2. Drainage Basin Parameters (This information should be provided for	r each basin):				
Drainage Basin/Outfall Area N	o. = Pond 1-	Α			
Total drainage basin/outfall ar Predevelopment impervious area within drainage basin/outfall ar Post-development impervious area within drainage basin/outfall ar Post-development impervious fraction within drainage basin/outfall ar	ea = 20.07 ea = 0.00 ea = 6.412 ea = 0.32	acres acres acres			
L _{M THIS} BAS	_{SIN} = 5861	lbs.			
3. Indicate the proposed BMP Code for this basin.					
Proposed BM Removal efficien	IP = Batch Det	ention percent			
4. Calculate Maximum TSS Load Removed (L _n) for this Drainage Basin	by the selecte	d BMP Type.		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	
RG-348 Page 3-33 Equation 3.7: I	L _R = (BMP effic	iency) x P x (A _I	x 34.6 + A _P x 0.54)		
where:	$A_{C} = Total On-S$ $A_{I} = Impervious$ $A_{P} = Pervious a$ $L_{R} = TSS Load$	ite drainage are area proposed rea remaining ir removed from th	a in the BMP catchmer in the BMP catchment in the BMP catchment and his catchment area by t	nt area area rea he proposed BMP	
,	A _c = 20.07	acres			
,	$A_{\rm P} = 0.412$ $A_{\rm P} = 13.66$	acres			
1	_R = 6884	lbs			
5. Calculate Fraction of Annual Runoff to Treat the drainage basin / ou	tfall area				
Desired L _{M THIS BAS}	SIN = 5885	lbs.			
	F = 0.85				
6. Calculate Capture Volume required by the BMP Type for this drainad	ge basin / outfa	all area.	Calculations from RG	à-348	Pages 3-34 to 3-36
Rainfall Dep Post Development Runoff Coefficier On-site Water Quality Volun	th = 1.37 nt = 0.32 ne = 32096	inches cubic feet			
	Calculation	is from RG-348	Pages 3-36 to 3-37		
Off-site area draining to BM Off-site Impervious cover draining to BM Impervious fraction of off-site are Off-site Rungf Coefficie	IP = 0.00 IP = 0.00 ea = 0 ot = 0.00	acres			
Off-site Water Quality Volun Storage for Sedime	ne = 0	cubic feet			
Total Capture Volume (required water quality volume(s) x 1.2	0) = 38515	cubic feet			

TSS Removal Calculations

Project Name: Double L - Ph. 1 5/25/2022 Date Prepared:

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.

	Colouis		- DC 040	
1. The Required Load Reduction for the total project:	Calcula	ations fro	om RG-348	Pages 3-27 to 3-30
Page 3-29 Equation 3.3: L _M	= 27.7(A _t	_N x P)		
where: L _{M TOTAL PROJECT}	= Require	ed TSS i	removal resu	ulting from the proposed development = 80% of increased load
A _N P	= Net inc = Averag	rease in Je annua	Impervious I precipitatio	area for the project on, inches
Site Data: Determine Required Load Removal Based on the Entire Proje	ct			
County	= Ha	ays D 43	20105	
Predevelopment impervious area within the limits of the plan	= 0.	.00	acres	
Total post-development impervious area within the limits of the plan Total post-development impervious cover fraction *	= <u>152</u> = 0.	2.37 .32	acres	
P	= 3	33	inches	
LM TOTAL PROJECT	= 139	9285	lbs.	
* The values entered in these fields should be for the total project area.				
Number of drainage basins / outfalls areas leaving the plan area	=	5		
2. Drainage Basin Parameters (This information should be provided for ea	ch basin)	<u>):</u>		
Drainage Basin/Outfall Area No.	= Pon	d 1-B		
Total drainage basin/outfall area	= 22	.42	acres	
Predevelopment impervious area within drainage basin/outfall area Post-development impervious area within drainage basin/outfall area	= 0. = 8.5	.00 578	acres acres	
Post-development impervious fraction within drainage basin/outfall area	= 0.	.38	lba	
	- 70	9 4 1	105.	
3. Indicate the proposed BMP Code for this basin.				
Proposed BMP Removal efficiency	= Batch	Detentio	percent	
				Aqualogic Cartridge Filter
				Contech StormFilter
				Extended Detention
				Grassy Swale Retention / Irrigation
				Sand Filter
				Vegetated Filter Strips
				Vortechs Wet Basin
4. Calculate Maximum TSS Load Removed (L _p) for this Drainage Basin by	the selec	ted BM	P Type.	Wet Vault
PC 248 Base 2 22 Equation 2 7: 1	(DMD o	ficiono		24.6 . 4 . 20.54)
HG-346 Page 3-33 Equation 3.7. L _R	= (DIVIP e	enciency	/) x P x (A _l x	(34.0 + A _P X 0.54)
where: A _C	= Total O	on-Site d	rainage area	a in the BMP catchment area
A _P	= Perviou	us area r	emaining in	the BMP catchment area
L _R	= TSS Lo	bad remo	oved from th	is catchment area by the proposed BMP
Ac	- 22	.42	acres	
A ₁	= 8.	578 84	acres	
L _R	= 91	137	lbs	
5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall	area			
	= 78	310	lbs	
	- /		103.	
F	= 0.	.85		
6. Calculate Capture Volume required by the BMP Type for this drainage b	asin / ou	tfall area	<u>a.</u>	Calculations from RG-348 Pages 3-34 to 3-36
Rainfall Depth	= 1	.37	inches	
Post Development Runoff Coefficient	= 0.	.38		
On-site Water Quality Volume	= 418	836	cubic feet	
	Calcula	ations fro	om RG-348	Pages 3-36 to 3-37
Off-site area draining to BMP	= 0	.00	acres	
Off-site Impervious cover draining to BMP	= 0.	.00	acres	
Impervious fraction of off-site area Off-site Runoff Coefficient	= 0.	.00		
Off-site Water Quality Volume	=	0	cubic feet	

Storage for Sediment = 8367 Total Capture Volume (required water quality volume(s) x 1.20) = 50203 cubic feet

TSS Removal Calculations

Project Name: Double L - Ph. 1 Date Prepared: 5/25/2022

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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	s from RG-348	Pages 3-27 to 3-30	
Page 3-29 Equation 3.3: L _M	= 27.7(A _N x P))		
where:	= Required TS	SS removal res	$\frac{1}{1000}$ with the proposed development = 80% of inc	reased load
An P	= Net increase = Average an	e in impervious nual precipitatio	area for the project on, inches	
Site Data: Determine Required Load Removal Rased on the Entire Proje	rt .			
County	= Hays			
Total project area included in plan	= 469.43	acres		
Predevelopment impervious area within the limits of the plan*	= 0.00	acres		
Total post development impervious area within the mints of the plan	= 0.32	acres		
Р	= 33	inches		
	= 139285	lbs.		
* The values entered in these fields should be for the total project area.				
	_			
Number of drainage basins / outfalls areas leaving the plan area	= 5			
2. Drainage Basin Parameters (This information should be provided for ea	ch basin):			
Drainage Basin/Outfall Area No.	= Pond 1-C	;		
Total drainage basin/outfall area	= 46.58	acres		
Predevelopment impervious area within drainage basin/outfall area	= 0.00	acres		
Post-development impervious area within drainage basin/outfall area	= 11.16	acres		
Post-development impervious fraction within drainage basin/outfall area	= 0.24 = 10204	lbs.		
3. Indicate the proposed BMP Code for this basin.				
Proposed BMP	= Batch Dete	ntion		
Removal efficiency	= 91	percent	Aqualogic Cartridge Filter	
			Bioretention	
			Contech StormFilter	
			Constructed Wetland	
			Grassy Swale	
			Retention / Irrigation	
			Sand Filter	
			Stormceptor	
			Vortechs	
			Wet Basin	
4. Calculate Maximum TSS Load Removed (L_{R}) for this Drainage Basin by	the selected l	BMP Type.	Wet Valit	
RG-348 Page 3-33 Equation 3.7: L _R	= (BMP efficie	ency) x P x (A ₁)	x 34.6 + A _P x 0.54)	
whore:	- Total On-Sit	o drainado aro	a in the BMP catchment area	
A _I	= Impervious	area proposed	in the BMP catchment area	
A _P	= Pervious ar	ea remaining ir	the BMP catchment area	
L _R	= TSS Load re	emoved from th	nis catchment area by the proposed BMP	
٨	- 46.58	acros		
~с А,	= 40.00 = 11.163	acres		
A _P	= 35.42	acres		
L _R	= 12173	lbs		
5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall	area			
Desired Lyzys acou	- 10400	lbs		
DOSITOR EM THIS BASIN	- 10400	103.		
F	= 0.85			
6. Calculate Capture Volume required by the BMP Type for this drainage b	asin / outfall :	area.	Calculations from RG-348	Pages 3-34 to 3-36
Raintall Depth Post Development Bunoff Coefficient	= 1.37 = 0.25	inches		
On-site Water Quality Volume	= 58770	cubic feet		
	Calculations	s from RG-348	Pages 3-36 to 3-37	
Off-site area draining to BMP	= 0.00	acres		
Off-site Impervious cover draining to BMP	= 0.00	acres		
Off-site Runoff Coefficient	= 0.00			
Off-site Water Quality Volume	= 0	cubic feet		
Storage for Sediment	= 11754			

70524

cubic feet

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

TSS Removal Calculations	Project Name: Double I	L - Ph. 1	
	Date Prepared:	5/25/2022	
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 Guid	ance 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 f	irom RG-348	Pages 3-27 to 3-30	
Page 3-29 Equation 3.3: L _M	= 27.7(A _N x P)			
where: L _{M TOTAL PROJECT} A _N	 Required TSS Net increase Average anni 	S removal res in impervious ual precipitatio	ulting from the proposed development = 80% of incre area for the project n, inches	ased load
Site Data: Determine Required Load Removal Based on the Entire Project	ct			
County Total project area included in plan * Predevelopment impervious area within the limits of the plan * Total post-development impervious area within the limits of the plan * Total post-development impervious cover fraction *	= Hays = 469.43 = 0.00 = 152.37 = 0.32 = 33	acres acres acres inches		
$L_{\rm M}$ total project area. The values entered in these fields should be for the total project area.	= 139285	lbs.		
Number of drainage basins / outfalls areas leaving the plan area	= 1			
Drainage Basin Parameters (This information should be provided for ea	ich basin):			
Drainage Basin/Outfall Area No.	= Pond 1-D			
Total drainage basin/outfall area	= 25.94	acres		
Post-development impervious area within drainage basin/outfall area Post-development impervious area within drainage basin/outfall area	= 0.00	acres		
Post-development impervious fraction within drainage basin/outfall area $$L_{\rm M}$$ This basin	= 0.38 = 8927	lbs.		
Indicate the proposed BMP Code for this basin.				
Proposed BMP	= Batch Deten	tion		
			Bioretention Contech Storm Filter Constructed Wetland Extended Detention Grassy Swale Retention / Irrigation Sand Filter Stormceptor Vegetated Filter Strips Vortechs Wet Basin Wet Vault	
Calculate Maximum TSS Load Removed (L _p) for this Drainage Basin by PG 248 Page 2 22 Equation 2 7: 1	the selected B	MP Type.	24.6 . 4 . 40.54)	
independent age 5-55 Equation 5.7. Eg			- in the DMD entries and	
where: A _C	= Impervious ar	rea proposed	in the BMP catchment area	
Ap	= Pervious area = TSS Load rea	a remaining in moved from th	the BMP catchment area	
	= 25.94 = 9.766	acres		
Ap	= 16.17	acres		
LR	= 10410	IDS		
Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall	area			
Desired L _{M THIS BASIN}	= 8900	lbs.		
F	= 0.85		Coloriations from BC 249	Bagas 2 24 to 2 24
	asin / outian a	iea.	Galculations from NG-346	Fages 3-34 10 3-31
Rainfall Depth Post Development Runoff Coefficient On-site Water Quality Volume	= 1.37 = 0.37 = 47732	inches cubic feet		
	Calculations f	irom RG-348	Pages 3-36 to 3-37	
Off-site area draining to BMP Off-site Impervious cover draining to BMP	= 0.00 = 0.00	acres acres		
Off-site Runoff Coefficient Off-site Runoff Coefficient Off-site Water Quality Volume	= 0 = 0.00 = 0	cubic feet		
Storage for Sediment	= 9546			

Total Capture Volume (required water quality volume(s) x 1.20) = 57279 cubic feet

TSS Removal Calculations	Project Name: Double L - Ph. 1				
	Date Prepared:	5/25/2022			
Additional information is provided for cells with a red triangle in the upper right corner.	Place the cursor ov	er the cell.			
Text shown in blue indicate location of instructions in the	Technical Gu	idance 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 f	rom RG-348	Pages 3-27 to 3-30	
Page 3-29 Equation 3.3: L_{M} =	= 27.7(A _N x P)			
where: $$L_{\rm M}$ _{\rm TOTAL PROJECT}$ = $A_{\rm N}$ = $$	Required TSS Net increase	S removal res in impervious ual precipitatio	sulting from the proposed development = 80% of increased load a area for the project on, inches	
Site Data: Determine Required Load Removal Based on the Entire Project				
County - Total project area included in plan * Predevelopment impervious area within the limits of the plan * Total post-development impervious area within the limits of the plan* Total post-development impervious cover fraction * P =	Hays 469.43 0.00 152.37 0.32 33	acres acres acres inches		
$L_{\rm M\ TOTAL\ PROJECT}$ * The values entered in these fields should be for the total project area.	139285	lbs.		
Number of drainage basins / outfalls areas leaving the plan area =	1			
2. Drainage Basin Parameters (This information should be provided for each	h basin):			
Drainage Basin/Outfall Area No. =	Pond 1-E			
Total drainage basin/outfall area = Predevelopment impervious area within drainage basin/outfall area = Post-development impervious area within drainage basin/outfall area = Post-development impervious fraction within drainage basin/outfall area =	42.32 0.00 21.07 0.50 19261	acres acres acres Ibs.		
3. Indicate the proposed BMP Code for this basin.				
Proposed BMP = Bemoval efficiency =	Batch Deten	tion percent		
			Aqualogic Cartridge Filter Bioretention Contech Storm Filter Constructed Wetland Extended Detention Grassy Swale Retention / Irrigation Sand Filter Stormceptor Vegetated Filter Strips Vortechs Wet Basin Wet Yault	
$\underline{4.}$ Calculate Maximum TSS Load Removed (L_n) for this Drainage Basin by t	he selected B	MP Type.	wet van	
RG-348 Page 3-33 Equation 3.7: L _R =	 (BMP efficien 	icy) x P x (A ₁ >	x 34.6 + A _P x 0.54)	
where: A_o $_{\rm O}$ A_{\rm I} = A_{\rm I} A_ $_{\rm I}$ = $$A_{\rm P}$$ = $$L_{\rm R}$ =$	 Total On-Site Impervious ar Pervious area TSS Load rer 	drainage are rea proposed a remaining in moved from th	a in the BMP catchment area in the BMP catchment area the BMP catchment area his catchment area by the proposed BMP	
A _C =	42.32	acres		
A _i = A _P = L _R =	 21.071 21.25 22238 	acres acres Ibs		
5 Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall a	1703			
Desired L _{M This Basin}	= 19000	lbs.		
F =	0.85			
6. Calculate Capture Volume required by the BMP Type for this drainage be	asin / outfall ar	rea.	Calculations from RG-348 Pages 3-34 to 3	3-36
Rainfall Depth = Post Development Runolf Coefficient = On-site Water Quality Volume =	■ 1.37 0.47 ■ 99592	inches cubic feet		
	Calculations f	rom RG-348	Pages 3-36 to 3-37	
Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient =	= 0.00 = 0.00 = 0 = 0.00	acres acres		
Off-site Water Quality Volume = Storage for Sediment = Total Capture Volume (required water quality volume(s) x 1.20) =	= 0 = 19918 = 119510	cubic feet		

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.

CITY OF AUSTIN ECM 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 COA 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 CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.

PLAN SHEETS SUBMITTED TO THE CITY OF AUSTIN MUST SHOW THE FOLLOWING:

DIRECTION OF FLOW DURING GRADING OPERATIONS.

LOCATION, DESCRIPTION, AND CALCULATIONS FOR OFF-SITE FLOW DIVERSION STRUCTURES.

AREAS THAT WILL NOT BE DISTURBED; NATURAL FEATURES TO BE PRESERVED.

DELINEATION OF CONTRIBUTING DRAINAGE AREA TO EACH PROPOSED BMP (E.G., SILT FENCE, SEDIMENT BASIN, ETC.).

LOCATION AND TYPE OF E&S BMPS FOR EACH PHASE OF DISTURBANCE.

CALCULATIONS FOR BMPS AS REQUIRED.

LOCATION AND DESCRIPTION OF TEMPORARY STABILIZATION MEASURES.

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.

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

1. INSTALLATION SEQUENCE OF CONTROLS (E.G. PERIMETER CONTROLS, THEN SEDIMENT BASINS, THEN TEMPORARY STABILIZATION, THEN PERMANENT, ETC.) 2. PROJECT PHASING IF REQUIRED (LOC GREATER THAN 25 ACRES) 3. SEQUENCE OF GRADING OPERATIONS AND NOTATION OF TEMPORARY STABILIZATION MEASURES TO BE USED 4. SCHEDULE FOR CONVERTING TEMPORARY BASINS TO PERMANENT WQ CONTROLS 5. SCHEDULE FOR REMOVAL OF TEMPORARY CONTROLS 6. ANTICIPATED MAINTENANCE SCHEDULE FOR TEMPORARY CONTROLS

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

3.1 MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL

- 3.2 CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT 3.3 STABILIZE SOILS
- 3.4 PROTECT SLOPES
- 3.5 PROTECT STORM DRAIN INLETS
- 3.6 ESTABLISH PERIMETER CONTROLS AND SEDIMENT BARRIERS
- 3.7 RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES
- 3.8 ESTABLISH STABILIZED CONSTRUCTION EXITS 3.9 ANY ADDITIONAL BMPS
- NOTE THE LOCATION OF EACH BMP ON YOUR SITE MAP(S).
- FOR ANY STRUCTURAL BMPS, YOU SHOULD PROVIDE DESIGN SPECIFICATIONS AND DETAILS AND REFER TO THEM.

- FOR MORE INFORMATION, SEE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL 1.4.

3. 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 HE APPROVED GRADING/TREE AND NATURAL AREA PLAN.

4. 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 DEVELOPMENT SERVICES DEPARTMENT, 512-974-2278 OR BY EMAIL AT

ENVIRONMENTAL.INSPECTIONS@AUSTINTEXAS.GOV, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.

5. 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 COA 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.

6. 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 (1/2) 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 (%) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.

7. 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.

8. 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 AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.

9. 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 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:

TEMPORARY VEGETATIVE STABILIZATION:

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.

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	LONGEVIT Y	TYPICAL APPLICATIONS	APPLICATION RATES
100% OR ANY 3LEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0-3 MONTHS	MODERATE SLOPES; FROM FLAT TO 3:1	1500 TO 2000 LBS PER ACRE

PERMANENT VEGETATIVE STABILIZATION

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

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

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.

2.B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.

- 2.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.
- 2.D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 11/2 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.
- 2.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 RECOMMENDATIO NS)
10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)	

10. DEVELOPER INFORMATION

PHONE#:-----BGE INC PHONE#:512-879-0400

OWNER: DOUBLE | DEVELOPMENT, LLC ADDRESS: 1600 WEST LOOP SOUTH, STE 2600 HOUSTON, TEXAS, 77027 OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS: PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE: GENERAL CONTRACTOR TO BE DETERMINED PHONE #:------PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE: GENERAL CONTRACTOR TO BE DETERMINED PHONE#:------

11. 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

2.A. FERTILIZER USE SHALL FOLLOW THE RECOMMENDATION OF A SOIL TEST, SEE ITEM 606S.

Street Classification	Subgrade Material	Hot Mix Asphaltic Concrete, in	Crushed Limestone Base, in	Subgrade Improvements Required
Local	More than 2 feet of expansive subgrade $PI > 35$	2.0	8	X*
Streets	Less than 2 feet of expansive subgrade $PI > 35$		8	-
Minor	Minor More than 2 feet of expansive subgrade PI > 35		10	X*
Collector	Collector Less than 2 feet of expansive subgrade PI > 35		10	-
Major	More than 2 feet of expansive subgrade $PI > 35$	3.0	13	X*
Collector	Less than 2 feet of expansive subgrade $PI > 35$	3.0	13	-

- Specifications.
- placed below the crushed limestone base layer.
- 10 feet

- 4. The subgrade improvements should be extended 3 feet beyond the back of the curb line.
- conditions.













0	50'	100'	200'
	0'		

LEGEND



PROPERTY BOUNDARY PLAT BOUNDARY — PROPOSED CONTOUR — EXISTING CONTOUR PROPOSED STORM DRAIN LINE LIMITS OF CONSTRUCTION TEMPORARY SILT FENCE TEMPORARY SILT FENCE W/ J HOOKS TEMPORARY INLET PROTECTION

STABILIZED CONSTRUCTION ENTRANCE

TEMPORARY SPOILS AND STORAGE AREA

PROPOSED ROCK RIPRAP

SLOPE MATTING

ROCK BERM





CONCRETE WASHOUT

- EROSION AND SEDIMENTATION CONTROL NOTES: 1. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS STABILIZE BY REVEGETATION MATTING. 2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY
- EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN-COMPLIANCE WITH THE CITY OF AUSTIN RULES AND REGULATIONS.
- 3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
- 4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS AND MINIMUM OF ONCE DAILY.
- 5. ALL SPOILS ARE TO BE PLACED BACK IN TRENCH EVERY NIGHT; OR IF SPOILS
- MUST BE PLACED ON THE UPHILL SIDE OF TR4ENCH WITHIN THE LOC. 6. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS
- REQUIRED PRIOR TO ANY SITE DISTURBANCE.
- 7. CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY SEDIMENT TRANSPORTED FROM THE LOV TO THE OFFSITE DETENTION / WATER QUALITY POND(S). 8. EACH SINGLE FAMILY LOT IN A RESIDENTIAL SUBDIVISION MUST CONTAIN AT LEAST TWO TREES OF AT LEAST TWO DIFFERENT SPECIES LISTED IN ECM APPENDIX F. EACH TREE MUST HAVE A MINIMUM DIAMETER OF 2 INCHES AND

EACH TREE MUST BE MAINTAINED IN ACCORDANCE WITH THE ECM.

 $\Box \Box \Box \Box \Box \Box$ DESIGNED BY: **REVIEWED BY:** DRAWN BY: BCE **BGE, INC.** 1701 Directors Blvd., Suite 1000 AUSTIN, TX 78744 TBPE Registration No. F-1046 TEL: 512-879-0400 www.bgeinc.com 4) ОF (2 AN RANCH Ω CONTROL DOUBLE EDIMENT S AND EROSION Nº W JUAN P. MARTINE D. 106158 CENSER SHEET

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Drawdown Ca $A_o = 0.001BM$	Iculations (Extended De $P_{Vol}/C\sqrt{(2gH_{avg})}$	etention): $H_{avg} = H_T/2$
Orifice Elev:	1107.63	
WQ Elev:	1113	
WQ Vol.:	38,892.90	

BMP _{Vol} =	38,893 cf	required basin volume
C=	0.62	orifice coefficient
g=	32.2 ft/s ²	acceleration due to grav
H _T =	5.3/π	total hydraulic head (diff
H _{a∨g} =	2.68 ft	average hydraulic head
A _o =	4.77 in ²	maximum orifice area
Orifice Dia.	2.46 in	maximum diameter area







Texas Commission on Environmental Quality

Additional information is provided for cells with a red triangle in the upp Text shown in blue indicate location of instructi

1. The Require	d Load Reduction for the total project:	Calculations
	Page 3-29 Equation 3.3: $L_M =$	27.7(A _N x P)
where:	LM TOTAL PROJECT =	Required TS
	A _N =	Net increase
		Average ann
Site Data:	Determine Required Load Removal Based on the Entire Project County =	Hays
	Total project area included in plan * =	469.43
Total	post-development impervious area within the limits of the plan =	153.58
	Total post-development impervious cover fraction * =	0.33
	LMTOTAL PROJECT =	140387
The values e	intered in these lields should be for the total project area.	
Nu	mber of drainage basins / outfalls areas leaving the plan area =	5
2. Drainage Ba	sin Parameters (This information should be provided for ea	ch basin):
	Drainage Basin/Outfall Area No. =	Pond 1-A
Dec -1	Total drainage basin/outfall area =	20.07
Pred Post-d	evelopment impervious area within drainage basin/outfall area = evelopment impervious area within drainage basin/outfall area =	6.412
Post-deve	lopment impervious fraction within drainage basin/outfall area =	0.32
	L _{MTHS} BASN =	5861
3. Indicate the	proposed BMP Code for this basin.	
	Proposed BMP =	Batch Deter
	Removal efficiency =	91
		41 1 4 1
	RG-348 Page 3-33 Equation 3.7: L _R =	(BMP efficier
where:	Ac =	Total On-Site
		Pervious area
	Ap – L _R =	TSS Load re
	Δ	20.07
	Ac - Ai =	6.412
	Ap =	13.66
	L _R =	0884
5. Calculate Fra	action of Annual Runoff to Treat the drainage basin / outfall	area
	Desired L _{MTHS BASN} =	5885
	F =	0.85
6. Calculate Ca	pture Volume required by the BMP Type for this drainage b	oasin / outfall
	Rainfall Denth =	1.37
	Post Development Runoff Coefficient =	0.32
	On-site Water Quality Volume =	32096
		Calculations
	Off-site area draining to BMP =	0.00
	Off-site Impervious cover draining to BMP =	0.00
	Off-site Runoff Coefficient =	0.00

	[
	150 mm (6") 150 mm (6") 300 mm (12") S	B B B BECTION B	- B	300 mm (12") m ↓ 100 mm (4")				
	A 450 mm (18") 500 mm (20") B 750 mm (30") 800 mm (32") D 150 mm (6") 200 mm (8") L 600 mm (24") 600 mm (24")	550 mm (22") 850 mm (34") 250 mm (10") 750 mm (30")	600 mm (24") 1.05 m (42") 300 mm (12") 900 mm (36")	675 mm (27") 1.27 m (51") 375 mm (15") 1.2 m (48")				
	CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW RECORD COPY SIGNED BY GEORGE E. OSWALD ADOPTED	HEAD W THE ARCHIT RESPONSIBI OF THIS STA	VALL FOF PIPE 150 ect/engine lity for af indard.	R FILTRATION PC mm (6") T0 375 m er assumes propriate use	DNDS W/OUTFALL m (15") DIA. STANDARD NO. 508S-15 2 OF 2			
Com	nission on Environmental Quality							
emoval	Calculations			Project Name: Date Prepared:	Double L - Ph. 1 1/20/2022	2		
onal info	ormation is provided for cells with a red triangle	in the uppe	r right cor	ner. Place the cu	rsor over the cell.			
t sho sters sh	wn in blue indicate location of in nown in red are data entry fields.	structio	ns in t	he Technica	al Guidance Ma	nual -	RG-3	48/
cters sl	nown in black (Bold) are calculated fields. Chan	ges to these	fields wil	l remove the equa	tions used in the spre	adsheet.		
Required	Load Reduction for the total project:	Calculations fro	om RG-348		Pages 3-27 to 3-30			
where:	Fage 3-29 Equation 3.3. EM -	Required TSS	removal resu	lting from the proposed	I development = 80% of incre	ased load		
	A _N = P =	Net increase in Average annua	impervious a I precipitation	area for the project n, inches				
e Data: D	Determine Required Load Removal Based on the Entire Project County =	Havs						
P	Total project area included in plan * = redevelopment impervious area within the limits of the plan * =	469.43 0.00	acres acres					
Total po	Total post-development impervious cover fraction * =	0.33	inches					
	LMTOTAL PROJECT =	140387	lbs.					
Num	ber of drainage basins / outfalls areas leaving the plan area =	5						
age Basi	<u>n Parameters (This information should be provided for ea</u> Drainage Basin/Outfall Area No. =	ch basin): Pond 1-A						
Prode	Total drainage basin/outfall area =	20.07	acres					
Post-develo	relopment impervious area within drainage basin/outfall area = pment impervious fraction within drainage basin/outfall area =	6.412 0.32	acres					
ate the p	LMTHIS BASIN =	5861	lbs.					
	Proposed BMP =	Batch Detenti	o n					
	i venioval efficiency =	VI			Aqualogic Cartridge Filter Bioretention			
					Contech StormFilter Constructed Wetland Extended Detention			
					Grassy Swale Retention / Irrigation Sand Filter			
					Stormceptor Vegetated Filter Strips			
					Wet Basin Wet Vault			
ilate Max	imum TSS Load Removed (L _B) for this Drainage Basin by t	(BMP officier	WP Type.	346+4-2054				
where:	Ac =	Total On-Site d	rainage area	in the BMP catchmen	tarea			
	A _I = A _P =	Impervious area	a proposed in remaining in	n the BMP catchment a the BMP catchment ar	area ea			
	L _R =	20.07	acres	s catchment area by th	e proposed BMP			
	A _l = A _P =	6.412 13.66	acres acres					
	L _R =	6884	lbs					
late Frac	tion of Annual Runoff to Treat the drainage basin / outfall	area						
	Desired L _{MTHS BASN} =	5885	lbs.					
late Cor	F =	0.85	rea	Calculations from BC	348	Pages 2	34 to 3.26	
nate Cap	the systeme required by the BINF Type for this drainage b	aont i outtall a	<u></u>	Saluations from RG		rages 3-	u ວ-36	
	Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume =	1.37 0.32 32096	unches cubic feet					
		Calculations fro	m RG-249	Pages 3-36 to 2.27				
	Off-site area draining to BMP =	0.00	acres	3-3 - 00 10 0-01				
	Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient =	0.00	aures					
	Off-site Water Quality Volume =	0 6419	cubic feet					
Total Ca	apture Volume (required water quality volume(s) x 1.20) =	38515	cubic feet					





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SEDIMENTATION MARKER N.T.S.

		1-B		
Elevation (ft)	Inc Area	Inc Volume.	Cum Volume.	
Elevation (It)	(sq.ft)	(cu.ft)	(cu.ft)	
1104	3607.7	NA	0.00	Pond Bottom
1105	9449.7	6528.7	6528.7	
1106	13396.9	11423.3	17952.0	
1107	15375.4	14386.2	32338.2	
1108	17431.4	16403.4	48741.6	
1108.1	17599.8	16568.8	50202.6	WQ/Weir Elev.
1109	19563.2	18497.3	67238.9	
1110	21771.0	20667.1	87906.0	
1111	24054.4	22912.7	110818.7	
1112	26400.4	25227.4	136046.2	Top of Pond



TSS Removal Calculations

Characters shown in red are data entry fields. 1. The Required Load Reduction for the total project:

	Page 3-29 Equation 3.3: $L_M =$	27.7(A _N x P)
where		Permitted TCC
where:	LMTOTAL PROJECT =	Required 155
	A _N =	Net increase in
	P =	Average annua
Site Data:	Determine Required Load Removal Based on the Entire Project	
	County =	Hays
	Total project area included in plan * =	469.43
	Predevelopment impervious area within the limits of the plan * =	0.00
Total p	post-development impervious area within the limits of the plan* =	153.58
	Total post-development impervious cover fraction * =	0.33
	P =	33
		140387
* The values e	ntered in these fields should be for the total project area.	140307
Nu	mber of drainage basins / outfalls areas leaving the plan area =	5
2. Drainaαe Ba	sin Parameters (This information should be provided for ea	ch basin):
	Drainage Basin/Outfall Area No. =	Pond 1-B
876 - ²	Total drainage basin/outfall area =	22.42
Pred	evelopment impervious area within drainage basin/outfall area =	0.00
Post-d	evelopment impervious area within drainage basin/outfall area =	8.578
Post-deve	lopment impervious fraction within drainage basin/outfall area =	0.38
	L _{MTHIS} BASIN =	7841
3. Indicate the	proposed BMP Code for this basin.	
	Proposed BMP =	Batch Detenti
	Removal efficiency =	91
4. Calculate Ma	ximum TSS Load Removed (L _R) for this Drainage Basin by	the selected B
	PC 249 Page 2 22 Equation 2 7: 1	
	Ко-очо гаде 5-55 Ефианов 5.7. Ц	
where:	Ac =	Total On-Site d
	A, =	Impervious are
	A _P =	Pervious area
	L _R =	TSS Load remo
	25	0.000 202
	A _C =	22.42
	A ₁ =	8.578
	A _P =	13.84
	lo=	9137
		0101
5. Calculate Fra	action of Annual Runoff to Treat the drainage basin / outfall	area
	Designed I	7040
	Desirea L _{MTHSBASN} =	7010
	F =	0.85
6. Calculate Ca	pture Volume required by the BMP Type for this drainage b	asin / outfall a
	Rainfall Deoth =	1.37
	Post Development Runoff Coefficient =	0.38
	On-site Water Quality Volume =	41836

168	OF	266



						Batch Detention	Drawdown
						WQ Vol.:	70,524.00
						VVQ Elev: Orifice Elev:	1099.5 1091.57
						Drawdown Calcu	ations (Extende
						$A_o = 0.001BMP_{Vol},$	$C\sqrt{(2gH_{avg})}$
						——————————————————————————————————————	0.62
	RADE					g= H _T =	32.2 ft/s² 7.93 ft
						H _{avg} =	3.97 ft 7.12 in ²
						Orifice Dia.	3.01 in
	×						
<u> </u>	RE: 1099.50			_			
	<u> </u>						
							7-
4+	00	5+	00	6.	+00		7+00







SEDIMENTATION MARKER N.T.S.

		1-C		
Flowation (ft)	Inc Area	Inc Volume.	Cum Volume.	
Elevation (IT)	(sq.ft)	(cu.ft)	(cu.ft)	
1095	10045.7	NA	0	Pond Bottom
1096	12160.2	11214.0	11214.0	
1097	14465.2	13312.7	24526.7	
1098	16992.5	15728.8	40255.5	
1099	19844.7	18418.6	58674.1	
1099.5	21441.1	20011.0	70524.2	WQ/Weir Elev.
1100	22711.1	21277.9	79952.0	Top of Pond



Characters shown in red are data entry fields.

. The Require	d Load Reduction for the total project:	Calcu
	Page 3-29 Equation 3.3: $L_M =$	27.7(
where:	L _{MTOTAL} PROJECT =	Requ
	A _N =	Net in
	P =	Avera
Site Data:	Determine Required Load Removal Based on the Entire Project	
	County =	- H
	Total project area included in plan * =	4
	Predevelopment impervious area within the limits of the plan * =	
Total p	post-development impervious area within the limits of the plan* =	1:
	Total post-development impervious cover fraction * =	

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

Drainage Basin/Outfall Area No. =	Po
Total drainage basin/outfall area =	e 1
Predevelopment impervious area within drainage basin/outfall area =	
Post-development impervious area within drainage basin/outfall area =	
Post-development impervious fraction within drainage basin/outfall area =	
L _{MTHIS} BASIN =	1
3. Indicate the proposed BMP Code for this basin.	

	RG-348 Page 3-33 Equation 3.7: $L_R =$	(BMP e
where:	A _C =	Total Or
	A1 =	Impervie
	A _P =	Perviou
	L _R =	TSS Lo
	A _C =	46.
	A1 =	11.1
	A _P =	35.
	L _R =	121
5. Calculate Fra	action of Annual Runoff to Treat the drainage basin / outfall	area
	Desired LMTHIS BASIN =	104

F=	0.8
te Capture Volume required by the BMP Type for this drainage	oasin / o
Rainfall Depth =	1.3
Post Development Runoff Coefficient =	0.2
On-site Water Quality Volume =	587
	Calculat
Off-site area draining to BMP =	0.0
Off-site Impervious cover draining to BMP =	0.0

Total Capture Volume (required water quality volume(s) x 1.20) = 70524 cubic feet







ACCUMULATION REACHES A DEPTH OF 6 INCHES.

> SEDIMENTATION MARKER N.T.S.

		1-D		
Flowation (ft)	Inc Area	Inc Volume.	Cum Volume.	
Elevation (It)	(sq.ft)	(cu.ft)	(cu.ft)	
1096	5619.9	NA	0.0	Pond Bottom
1097	12465.7	9042.8	9042.8	
1098	14142.5	13304.1	22347.0	
1099	15890.7	15016.6	37363.5	
1100	17716.5	16803.6	54167.1	
1100.17	18033.2	17114.1	57278.7	WQ/Weir Elev.
1101	19616.1	18666.3	72833.4	
1102	21590.8	20603.5	93436.9	
1102	17837.1	0.0	93436.9	Top of Pond



	Drainage Basin/Outfall Area No. =
	Total drainage basin/outfall area =
Predevelopme	nt impervious area within drainage basin/outfall area =
Post-developme	nt impervious area within drainage basin/outfall area =
ost-development i	mpervious fraction within drainage basin/outfall area =
	LMTHIS BASIN =

						NOTE
150 mm (6") 150 mm (6") 300 mm (12")	SECTION B - B			MINIMUM 11 GAUGE WIRE TOP OF GABION GEOTEXTILE FILTER FABRIC SIEVE SIZE 80 TO 12" DEPTH FLOW POND BOTTOM T.O. PAD CAR	3' WATER QUALITY ELEVATION 5' MIN. 5' MIN. 5' MIN. 4 6''-12'' MIN. DIA. ROCK RIP-RAP w/Fill TER FABRIC (18'' DEPTH) ENGINEERED REINFORCED CONCRETE #4 @ 8'' C-C E.W. 48'' W × 6'' THICK, WITH 24'' TOE-DOWNS	1. F 2. S 3. 7 4. (5. (6. (7. 7) 8. (8. (8. (8. (8. (8. (8. (8. (
A 450 mm (18") 500 mi (20") B 750 mm (30") 800 mi (32") D 150 mm (6") 200 mi (8") L 600 mm (24") 600 mi (24") E 600 mm (24") 600 mi (24") D 600 mm (24") 600 mi (24") E 600 mm (24") 600 mi (24") E 600 mm (24") 600 mi (24") E CITY OF AUSTIN (24") 150 mi (24") D E 600 mi (24") 3/15/05 (3/15/05) BY GEORGE E. OSWALD 3/15/05	m 550 mm (22") 600 mm (24") 675 mm (27") m 850 mm (34") 1.05 m (42") 1.27 m (51") m 250 mm (10") 300 mm (12") 375 mm (15") m 750 mm (30") 900 mm (36") 1.2 m (48") m 750 mm (50 mm (6") T0 375 m (50 mm (50 mm	PONDS W/OUTFALL mm (15") DIA. STANDARD NO. 508S-15 2 OF 2			Solar Panel	Battery +
mission on Environmental Quality	Broject Name	Double L - Ph. 1				
formation is provided for cells with a red triangle Dwn in blue indicate location of in shown in red are data entry fields. shown in black (Bold) are calculated fields. Chan d Load Reduction for the total project: Page 3-29 Equation 3.3: L _M = L _{MTOTAL FROJECT} = A _N = P = Determine Required Load Removal Based on the Entire Project County = Total project area included in plan * = Predevelopment impervious area within the limits of the plan * = Dost-development impervious area within the limits of the plan * = P = L _{MTOTAL FROJECT} = ntered in these fields should be for the total project area. Imber of drainage basins / outfalls areas leaving the plan area = sin Parameters (This information should be provided for ea Drainage Basin/Outfall Area No. =	Project Name Date Prepared Date Prepared In the upper right corner. Place the constructions in the Technic ges to these fields will remove the equ Calculations from RG-348 27.7(ANIX P) Required TSS removal resulting from the propose Net increase in impervious area for the project Average annual precipitation, inches t Hays 469.43 acres 0.00 acres 0.33 33 inches 1 ch basin): Pond 1-D	t J/20/2022 ursor over the cell. al Guidance Man ations used in the spread Pages 3-27 to 3-30 d development = 80% of increas	ual - RG-348A Jsheet.			Level
evelopment impervious area within drainage basin/outfall area = evelopment impervious area within drainage basin/outfall area = elopment impervious fraction within drainage basin/outfall area =	0.00 acres 9.77 acres 0.38					
proposed BMP Code for this basin. Proposed BMP = Removal efficiency =	Batch Detention 91 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				- PERFORATED 12" SCHE WITH REMOVABLE SOLI - 1.5"X1.5" GALVANI FROM TRASH RAC SET INTO CONCRI
ximum TSS Load Removed (L _R) for this Drainage Basin by RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _L = A _P = L _R = A _C = A _P = L _R = A _L =<	the selected BMP Type. (BMP efficiency) x P x (A ₁ x 34.6 + A _P x 0.54) Total On-Site drainage area in the BMP catchment Impervious area proposed in the BMP catchment Pervious area remaining in the BMP catchment a TSS Load removed from this catchment area by the second removed from	nt area area rea he proposed BMP				REMOVABLE TRA FROM GALVANIZE FABRIC OPENING CONE OF 2"-3" SURROUNDING GALVANIZED ST WITH ANCHOR I RISER PIPE SET IN WAL WATERPRO
F = pture Volume required by the BMP Type for this drainage b Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume =	Los Calculations from RC 1.37 inches 0.37 cubic feet 47732 cubic feet Calculations from RG-348 Pages 3-36 to 3-37 0.00 acres 0 ocubic feet	G-348 F	Pages 3-34 to 3-36		TRASH RACK/RISER	• 4' X4' - 4" CONCRETE PAD
Storage for Sediment =	9546					

				7		NOT
						1. MINIMUM 11 GAUGE WIRE —2
		- 300 mm (12")				TOP OF GABION 2. GEOTEXTILE FILTER FABRIC SIEVE SIZE 80
150 mm						TO 12" DEPTH WATER QUALITY ELEVATION 3.
150 mm — (6")	D 150 (6")	mm ↓				$\frac{\text{FLOW}}{\text{FLOW}} \qquad $
		<u>I</u> IIII				
300 mm	В	100 mm (4")				
(12")						
	SECTION B - B					$ \begin{array}{c} \hline \\ \hline $
						ENGINEERED REINFORCED CONCRETE #4 @ 8" C-C E.W.
						48" W X 6" THICK, WITH 24" O. TOE-DOWNS
						<u>SECTION D-D</u> GABION WALL DETAIL
						N.T.S.
A 450 mm 500 m (18") (20")	im 550 mm 600 m) (22") (24"	nm 675 mm) (27")				
B 750 mm 800 m (30") (32")	m 850 mm 1.05 m) (34") (42" m 250 mm 300 m	m 1.27 m) (51") nm 375 mm				
D (6") (8") (6") 600 mm 600 m	(10") (12" m 750 mm 900 m) (15") 1m 1.2 m				Solar Papel
) (30") (36") (48")				Battery
						9
						Fuse 6
				4		
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REV	HEADWALL FO	0 mm (6") T0 375 n	ONDS W/OUTFALL nm (15") DIA.	_		
RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05	THE ARCHITECT/ENGI RESPONSIBILITY FOR OF THIS STANDARD.	NEER ASSUMES APPROPRIATE USE	508S-15			Solar Controller
			2 OF 2			
Texas Commission on Environmental Quality		Project Name:	Double L - Ph. 1			
		Date Prepared:	1/20/202	2		
Additional information is provided for cells with a red triangle Text shown in blue indicate location of it	e in the upper right co nstructions in t	orner. Place the cu the Technica	irsor over the cell. I Guidance Ma	nual - RG-3	348A	
Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Char	nges to these fields wi	ill remove the equa	itions used in the spre	eadsheet.		
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 x P)					
where:	Required TSS removal res	ulting from the proposed	development = 80% of incr	eased load		
P =	Average annual precipitation	on, inches				
Site Data: Determine Required Load Removal Based on the Entire Project County =	t Hays					
Predevelopment impervious area within the limits of the plan * = Total post-development impervious area within the limits of the plan * =	0.00 acres 153.58 acres					
Total post-development impervious cover fraction * = P =	= 0.33 = 33 inches					
LMTOTAL PROJECT =	= 140387 lbs.					
Number of drainage basins / outfalls areas leaving the plan area =	1					
2. Drainage Basin Parameters (This information should be provided for ea	ach basin): Pond 1-D					
Total drainage basin/outfall area =	= 25.94 acres					
Predevelopment impervious area within drainage basin/outfall area = Post-development impervious area within drainage basin/outfall area = Post-development impervious fraction within drainage basin/outfall area =	= 0.00 acres = 9.77 acres = 0.38					
L _{MTHSBASN} =	= 8927 lbs.					
Proposed BMP Code for this basin. Proposed BMP =	Batch Detention					
Removal efficiency =	91 percent		Aqualogic Cartridge Filter			
			Contech StormFilter Constructed Wetland			
			Extended Detention Grassy Swale			
			Sand Filter Stormceptor			PERFORATED 12" SCHE WITH REMOVABLE SOL
			Vegetated Filter Strips Vortechs			- 1.5"X1.5" GALVAN
4. Calculate Maximum TSS Load Removed (L _R) for this Drainade Basin by	the selected BMP Type.		Wet Vault			SET INTO CONCR
RG-348 Page 3-33 Equation 3.7: L _R =	(BMP efficiency) x P x (A	x 34.6 + A⊳ x 0.54)				
where: A _C =	Total On-Site drainage are	a in the BMP catchment	t area			
A _i = A _P =	 Impervious area proposed Pervious area remaining ir TSS I and remained from the 	In the BMP catchment and the BMP catchment and the BMP catchment and the set of the set	ea			CONE OF 2"-3" SURROUNDING
L _R =	= 155 Load removed from tr	nis catenment area by th	e proposed BIVIP			GALVANIZED ST
A _i = A _P =	= 9.766 acres = 16.17 acres					
L _R =	= 10410 lbs					
5. Calculate Fraction of Annual Runoff to Treat the drainage beein / cutfol	area					WATERPRO
Desired L _{MTHSBASN} =	= 8900 lbs.					
F =	0.85					
6. Calculate Capture Volume required by the BMP Type for this drainage	<u>basin / outfall area.</u>	Calculations from RG-	-348	Pages 3-34 to 3-36		- 4' X4' - 4" CONCRETE PAD
Rainfall Depth =	= 1.37 inches					
On-site Water Quality Volume =	47732 cubic feet					
	Calculations from RG-348	Pages 3-36 to 3-37				TRASH RACK/RISER PIPE DETAIL
Off-site area draining to BMP = Off-site Impervious cover draining to BMP =	0.00 acres 0.00 acres					NTS
Impervious fraction of off-site area = Off-site Runoff Coefficient =	= 0 = 0.00 = 0 oubic feet					
Storage for Sediment =	= 9546					
Total Capture Volume (required water quality volume(s) x 1.20) =	57279 cubic feet					





WQ Vol.:	119,509.80
WQ Elev:	1090.57
Orifice Elev:	1082.76

$A_o = 0.001 BMP$	$C_{Vol}/C\sqrt{(2gH_{avg})}$	$H_{ava} = H_T/2$	* 48 -hou	
BMP _{Vol} =	119,510 cf	required basin volume	LCRA H	
C=	0.62	orifice coefficient		
g=	32.2 ft/s ²	acceleration due to gravity	1	
H⊤=	7.81 ft	total hydraulic head (difference		
H _{avg} =	3.90 ft	average hydraulic head		
A _o =	12.16 in ²	maximum orifice area		
Orifice Dia.	3.93 in	maximum diameter area		







1090.57

1091

26576.0

27413.3

25621.2

26445.3

119509.8

130946.2 |Top of Pond

WQ/Weir Elev.

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

Batch Detention Basins:

Inspections should occur at least twice a year. If possible these inspections should be conducted during wet weather to determine if the pond is meeting target detention times. Inspections should check for clogging of the primary outfall mechanism, as well as erosion problems in the upper stage pilot channel, all flow paths, and any erodible areas inside and downstream of the basin. If any slumping or erosion is discovered, immediate regrading or revegetation should be performed to correct the problems. Structural faults discovered during inspection should be identified and repaired immediately. Faults to check for include cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. All inlet/outlet and riser pipes will eventually deteriorate and require replacement.

The upper stage, side slopes, and embankment must be mowed regularly. Grass in and around the basin should be mowed at least twice a year and whenever vegetation height exceeds 18". When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed.

Debris and litter should be removed from outlet control device during all mowing and inspection operations.

Accumulated sediment should be removed from the lower stage when sediment buildup fills 20% of the volume of the basin, or at least every 10 years (whichever is more frequent).

The logic controller in the batch detention basin should be inspected twice a year as well. During the inspection, verify that the external indicators are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the switch to verify valve operation and to assist in inspecting the valve for debris. Any dust or debris on the solar panel should be removed. Wiring and other circuitry should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. The controller should be reset at the end of inspection.

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

Contributing Zone Plan
<u>1</u>

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:Pablo H. Martinez, P.E. – Brown & Gay Engineers, Inc.Mailing Address:1701 Directors Blvd, Suite 1000City, state, Zip:Austin, Texas 78744Telephone:(512) 879-0428

(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. On-site detention has been provided, so 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: Pablo H. Martinez

Date: 06/15/2022

Signature of Customer/Agent:

Regulated Entity Name: Double L Ranch Phase 1

Project Information

Potential Sources of Contamination

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

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

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

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

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

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

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

Sequence of Construction

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

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

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

Temporary Best Management Practices (TBMPs)

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

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

 A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site. A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
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.
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.
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 at one time.

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

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

Soil Stabilization Practices

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

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

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

Administrative Information

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

Attachment A – Spill Response Action

No spills of hydrocarbons or hazardous substances are expected. However, in the event that such an incidence 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	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:

- 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, as well as an estimated area of disturbance for each, is listed below:
 - I. Clearing and grubbing Limits of Construction ~48 acres
 - II. Excavation of basins ~1.43 acres
 - III. Grading and excavation for roadway and residential units ~48 acres
 - IV. Excavation for utilities-~2.5 acres
 - V. Construction of utilities-~2.5 acres
 - VI. Paving, striping, etc. limits of roadway 4.01 acres
 - VII. Re-vegetation ~23 acres
- 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.
- D. Rock Berms Used for sediment filtration and velocity dissipation crushed gravel or stone will slow and filter runoff, diverting it from open traffic areas and releasing it in sheet flow.

Attachment G – Drainage Area Map

Existing and proposed drainage area maps are attached.



SHEET 113 OF 266

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

The five (5) proposed batch detention basins: 1-A, 2-B, 1-C, 1-4, and 1-E, will serve as temporary sediment basins. See attached construction plans for details and calculations.

Attachment I – Inspection and Maintenance for BMPs

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

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.

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

Robert E. Fondren

Print Name

Manager

Title - Owner/President/Other

of Double L Development, LLC

Corporation/Partnership/Entity Name

have authorized Pablo H. Martinez, 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:

Ap Signat

6.15.22

THE STATE OF _____ §

County of <u>HARRIS</u> §

BEFORE ME, the undersigned authority, on this day personally appeared **Robert E. Fondren** known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 5^{-4} dav of 2082

NOTARY PUB

Frances K. Ard Typed or Printed Name of Notary

MY COMMISSION EXPIRES: April 14, 2026

Application Fee Form

Texas Commission on Environme	ntal Quality				
Name of Proposed Regulated Enti	ty: <u>Double L Ranch Ph</u>	<u>ase 1</u>			
Regulated Entity Location: 2.0 mile	es due North from the	intersection of US 290	and Ranch Rd 12		
Name of Customer: Double L Deve	elopment, LLC.				
Contact Person: Robert E. Fondrer	<u>n</u> Pho	ne: <u>(713)-623-2466</u>			
Customer Reference Number (if is	sued):CN <u>-</u>				
Regulated Entity Reference Numb	er (if issued):RN <u>-</u>				
Austin Regional Office (3373)					
🔀 Hays	Travis	□ w	illiamson		
San Antonio Regional Office (336	2)				
Bexar	Medina	U\	valde		
Comal	 Kinney				
Application fees must be paid by c	heck, certified check,	or money order, payab	le to the Texas		
Commission on Environmental Qu	uality. Your canceled	check will serve as you	r receipt. This		
form must be submitted with you	ir fee payment . This j	payment is being subm	itted to:		
🔀 Austin Regional Office		San Antonio Regional C	an Antonio Regional Office		
Mailed to: TCEQ - Cashier	Overnight Delivery to: TCEQ - Cashier				
Revenues Section	12100 Park 35 Circle				
Mail Code 214		Building A, 3rd Floor			
P.O. Box 13088		Austin, TX 78753			
Austin, TX 78711-3088		(512)239-0357			
Site Location (Check All That App	y):				
Recharge Zone	Contributing Zone	e 🗌 Transi	ition Zone		
Type of Pla	า	Size	Fee Due		
Water Pollution Abatement Plan,	Contributing Zone				
Plan: One Single Family Residentia	l Dwelling	Acres	\$		
Water Pollution Abatement Plan,	Contributing Zone				
Plan: Multiple Single Family Reside	Acres	\$			
Water Pollution Abatement Plan, Contributing Zone					
Plan: Non-residential	Acres	\$ 8,000			
Sewage Collection System	L.F.	\$			
Lift Stations without sewer lines		Acres	\$		
Underground or Aboveground Sto	rage Tank Facility	Tanks	\$		
Piping System(s)(only)		Each	\$		
Exception		Each	\$		
Extension of Time	Each	\$			

Signature:

Date: <u>06-15-2022</u>

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	Fee
Exception Request	\$500

Extension of Time Requests

Project	Fee
Extension of Time Request	\$150


TCEQ Core Data Form

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

SECTION I: General Information

1. Reason fo	or Submission (If other is c rmit, Registration or Author	checked pleas	e descri Data Fo	ibe in spa rm shoul	ace prov d be su	vided.) bmitteo	d with	the pr	rogram applicatio	on.)		
Renewal (Core Data Form should be submitted with the renewal form) Other												
2. Customer Reference Number (if issued)				Follow this link to search			3. Regulated Entity Reference Number (if issued)					
CN			for CN or RN numbers in Central Registry**			F	RN					
SECTION	II: Customer Info	ormation										
4. General C	ustomer Information	5. Effective	e Date fo	or Custo	mer In	format	ion U	pdate	s (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 Custo	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	Double L Development, LLC											
7. TX SOS/CI	7. TX SOS/CPA Filing Number 8. TX S			te Tax ID (11 digits)			9. Federal Tax ID (9 digits) 10. DUNS Number (if app					
08029	0802983550		32066782940				82	2–55	26408			
11. Type of C	11. Type of Customer: Corporation		Individual				Partnership: General Limited					
Government:	Government: 🔲 City 🗋 County 🗋 Federal 🛄 State 🗋 Othe			r Sole Proprietor			rship 🔀 Other: LLC					
12. Number (X 0-20	12. Number of Employees ☎ 0-20) [] 501 and higher			13. lı XX Y	Independently Owned and Operated? Yes No				
14. Customer Role (Proposed or Actual) - as it relates to the Regulated Entity listed on this form. Please check one of the following												
Owner Operator Owner & Operator Occupational Licensee Responsible Party Voluntary Cleanup Applicant Other:												
	1600 West Loop South, Suite 2600											
15. Mailing												
Address:	City Houston		St	ate]	ГХ	ZI	> 7	7702	7	ZIP + 4	3051	
16. Country I			17	7. E-Mail Address (if applicable)								
18. Telephon	18. Telephone Number			19. Extension or Code			20. Fax Number (if applicable)					
(713)62	(713) 623-2466								() -			

SECTION III: Regulated Entity Information

 21. General Regulated Entity Information (If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)

 ☑ New Regulated Entity
 □ Update to Regulated Entity Name
 □ Update to Regulated Entity Information

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

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

Double L Ranch Phase 1

23. Street Address of the Regulated Entity:												
(No PO Boxes)	0.11	TT .										
	City	Houston	State	TX	ZIP	77027	ZIP + 4	3051				
24. County	Hays											
	E	Enter Physical	Location Descrip	tion if no st	treet addres	s is provided.						
25. Description to Physical Location:	1.5 mile	1.5 miles North of US 290 and Ranch Road 12										
26. Nearest City						State	Nea	rest ZIP Code				
Dripping Springs						TX	78	620				
27. Latitude (N) In Deci	mal:	nal: 30.22050446°			Longitude (W) In Decimal:	-98.0726	-98.07264184°				
Degrees	Minutes	Minutes Seconds		Degr	ees	Minutes		Seconds				
30		13 13.82N			98		4 21.5					
29. Primary SIC Code (4	l digits) 30.	Secondary SI	C Code (4 digits)	31. Prima (5 or 6 digi	ary NAICS (ts)	ode 32. 3 (5 or	Secondary NA 6 digits)	ICS Code				
1521		16	11	11-11	236115		237210					
33. What is the Primary	Business o	of this entity?	(Do not repeat the SI	C or NAICS de	scription.)							
Subdivision-Multi	ple Single	Family Re	sidential									
			16	00 West Lo	op South, S	Suite 2600						
34. Mailing												
Address:	City	City Housotn State			ZIP	77027	ZIP + 4 3051					
35. E-Mail Address	;	1										
36. Teleph	one Numbe	r	37. Extensi	on or Code		38. Fax N	umber <i>(if appli</i>	icable)				
()	-) -) -							
TCEQ Programs and II n. See the Core Data Form	D Numbers	Check all Program	ns and write in the pe ince.	ermits/registra	ation numbers	that will be affected	d by the updates	submitted on this				
Dam Safety			Edwards Aquifer		Emissi	ons Inventory Air	Industrial Hazardous Was					
Municipal Solid Waste	New Source Review Air				Petrole	eum Storage Tank	PWS					
Sludge	Storm Water		Title V Air		Tires		Used Oil					
7 Voluptary Cleanup	Waste Water		Wastewater Agriculture		Motor.	Piahto	C Other:					
			wastewater Agriculture		L_ Water	rights						
CTION W. D.	enarer D	iformation										
LUTION IV: Pre	- <u> </u>	tinez										
0. ame: Pablo H Mar	rtinez			41. Title:	Senio	or Project Ma	nager					
0. ame: Pablo H Mai 2. Telephone Number	rtinez 43. Ext./Coo	ie 44. Fa	x Number	41. Title: 45. E-N	senio	or Project Ma	nager					

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					
Name (In Print):	Pablo H Martinez	Phone:	(512) 879- 0428				
Signature:				Date:	6/15/22		