

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Wuest Group					2. Regulated Entity No.:				
3. Customer Name: 12800 Silver Creek, LLC					4. Customer No.:				
5. Project Type: (Please circle/check one)	<input checked="" type="checkbox"/> New	Modification			Extension		Exception		
6. Plan Type: (Please circle/check one)	WPAP	<input checked="" type="checkbox"/> CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		<input checked="" type="checkbox"/> Non-residential			8. Site (acres):		14.8 AC	
9. Application Fee:	\$6,500		10. Permanent BMP(s):			Batch Detention/Bioretenention			
11. SCS (Linear Ft.):	separate permit		12. AST/UST (No. Tanks):			n/a			
13. County:	Hays		14. Watershed:			Headwaters Barton Creek Watershed			

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.

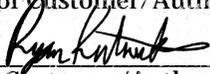
Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input checked="" type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input checked="" type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

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

RYAN KUTNICK, E.I.T.

Print Name of Customer/Authorized Agent



10.19.2023

Signature of Customer/Authorized Agent

Date

****FOR TCEQ INTERNAL USE ONLY****

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

Contributing Zone Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: CAROLINE ECKERT, P.E.

Date: 10/19/2023

Signature of Customer/Agent:



Regulated Entity Name: 12800 Silver Creek, LLC

Project Information

1. County: HAYS
2. Stream Basin: HEADWATERS BARTON CREEK WATERSHED
3. Groundwater Conservation District (if applicable): HAYS TRINITY GCD
4. Customer (Applicant): **(owner)**

Contact Person: DAVID KRUG

Entity: 12800 SILVER CREEK, LLC

Mailing Address: 2506 Toulouse Drive

City, State: Austin, Texas 78748

Telephone: _____

Email Address: dkrug@krugdevelopment.com

Zip: 78748

Fax: _____

5. Agent/Representative (If any): (civil engineer)

Contact Person: CAROLINE ECKERT, P.E.

Entity: WUEST GROUP

Mailing Address: 5207 AIRPORT BOULEVARD

City, State: AUSTIN, TEXAS

Zip: 78701

Telephone: 512-394-1900

Fax: _____

Email Address: COA@WUESTGROUPTX.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 DRIPPING SPRINGS.

The project site is not located within any city's limits or ETJ.

7. The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

LOCATED ON THE WEST SIDE OF SILVER CREEK ROAD, 0.5 MILE SOUTH OF FITZHUGH ROAD

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

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

Project site boundaries.

USGS Quadrangle Name(s).

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

Area of the site

Offsite areas

Impervious cover

Permanent BMP(s)

Proposed site use

Site history

Previous development

Area(s) to be demolished

11. Existing project site conditions are noted below:

Existing commercial site

Existing industrial site

Existing residential site

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

12. The type of project is:

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

13. Total project area (size of site): 14.8 Acres

Total disturbed area: 14.8 Acres

14. Estimated projected population: 100-200

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

Table 1 - Impervious Cover

<i>Impervious Cover of Proposed Project</i>	<i>Sq. Ft.</i>	<i>Sq. Ft./Acre</i>	<i>Acres</i>
Structures/Rooftops	47,923	÷ 43,560 =	1.1
Parking		÷ 43,560 =	
Other paved surfaces	143,721	÷ 43,560 =	3.3
Total Impervious Cover	191,644	÷ 43,560 =	4.4

Total Impervious Cover $\frac{191,644}{43,560} \div$ **Total Acreage** 14.8 **X 100 =** 29.8 % Impervious Cover

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

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

For Road Projects Only

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

N/A

18. Type of project:

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

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

- Concrete
- Asphaltic concrete pavement
- Other: _____

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

Length of R.O.W.: _____ feet.

Width of R.O.W.: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

21. Pavement Area:

Length of pavement area: _____ feet.

Width of pavement area: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

Pavement area _____ acres \div R.O.W. area _____ acres $\times 100 = \text{_____ \%}$ 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.
Refer to sheets 29-36 in the plan set.

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 _____ (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

<i>AST Number</i>	<i>Size (Gallons)</i>	<i>Substance to be Stored</i>	<i>Tank Material</i>
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

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

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

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

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

Table 3 - Secondary Containment

<i>Length (L)(Ft.)</i>	<i>Width(W)(Ft.)</i>	<i>Height (H)(Ft.)</i>	<i>L x W x H = (Ft3)</i>	<i>Gallons</i>

Total: _____ Gallons

30. Piping:

- All piping, hoses, and dispensers will be located inside the containment structure.
- Some of the piping to dispensers or equipment will extend outside the containment structure.
- The piping will be aboveground
- The piping will be underground

31. The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: _____.

32. **Attachment H - AST Containment Structure Drawings.** A scaled drawing of the containment structure is attached that shows the following:

- Interior dimensions (length, width, depth and wall and floor thickness).
- Internal drainage to a point convenient for the collection of any spillage.
- Tanks clearly labeled
- Piping clearly labeled
- Dispenser clearly labeled

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

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

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

Site Plan Requirements

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

34. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 60 '.
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): FLOOD INSURANCE RATE MAP 48209C0106F, COMMUNITY PANEL NO. 480321 DATED 9/2/2005 FOR TRAVIS COUNTY TEXAS AND INCORPORATED AREAS
36. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37. A drainage plan showing all paths of drainage from the site to surface streams.
38. The drainage patterns and approximate slopes anticipated after major grading activities.
39. Areas of soil disturbance and areas which will not be disturbed. **SEE GRADING PLANS.**
40. Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices. **SEE RAIN GARDEN PLANS.**
41. Locations where soil stabilization practices are expected to occur. **SEE EROSION CONTROL PLANS.**
42. Surface waters (including wetlands).
 N/A
43. Locations where stormwater discharges to surface water.
 There will be no discharges to surface water.
44. Temporary aboveground storage tank facilities.
 Temporary aboveground storage tank facilities will not be located on this site.

45. Permanent aboveground storage tank facilities.
 Permanent aboveground storage tank facilities will not be located on this site.
46. Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

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

47. Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.
 N/A
48. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
 The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
 A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____.
 N/A
49. Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
 N/A
50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
 The site will be used for low density single-family residential development and has 20% or less impervious cover.
 The site will be used for low density single-family residential development but has more than 20% impervious cover.
 The site will not be used for low density single-family residential development.

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

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

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

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

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

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

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

N/A

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

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

N/A

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

Prepared and certified by the engineer designing the permanent BMPs and measures

Signed by the owner or responsible party

Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.

Contains a discussion of record keeping procedures

N/A

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

N/A

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

N/A

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

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

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

Administrative Information

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

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Wuest Group

Regulated Entity Location: Austin

Name of Customer: 12800 Silver Creek, LLC

Contact Person: Ryan Kutnick

Phone: 512.394.1900

Customer Reference Number (if issued):CN _____

Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

Hays

Travis

Williamson

San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

Type of Plan	Size	Fee Due
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	14.8 Acres	\$ 6,500
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 10.20.2023

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

<i>Project</i>	<i>Project Area in Acres</i>	<i>Fee</i>
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, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

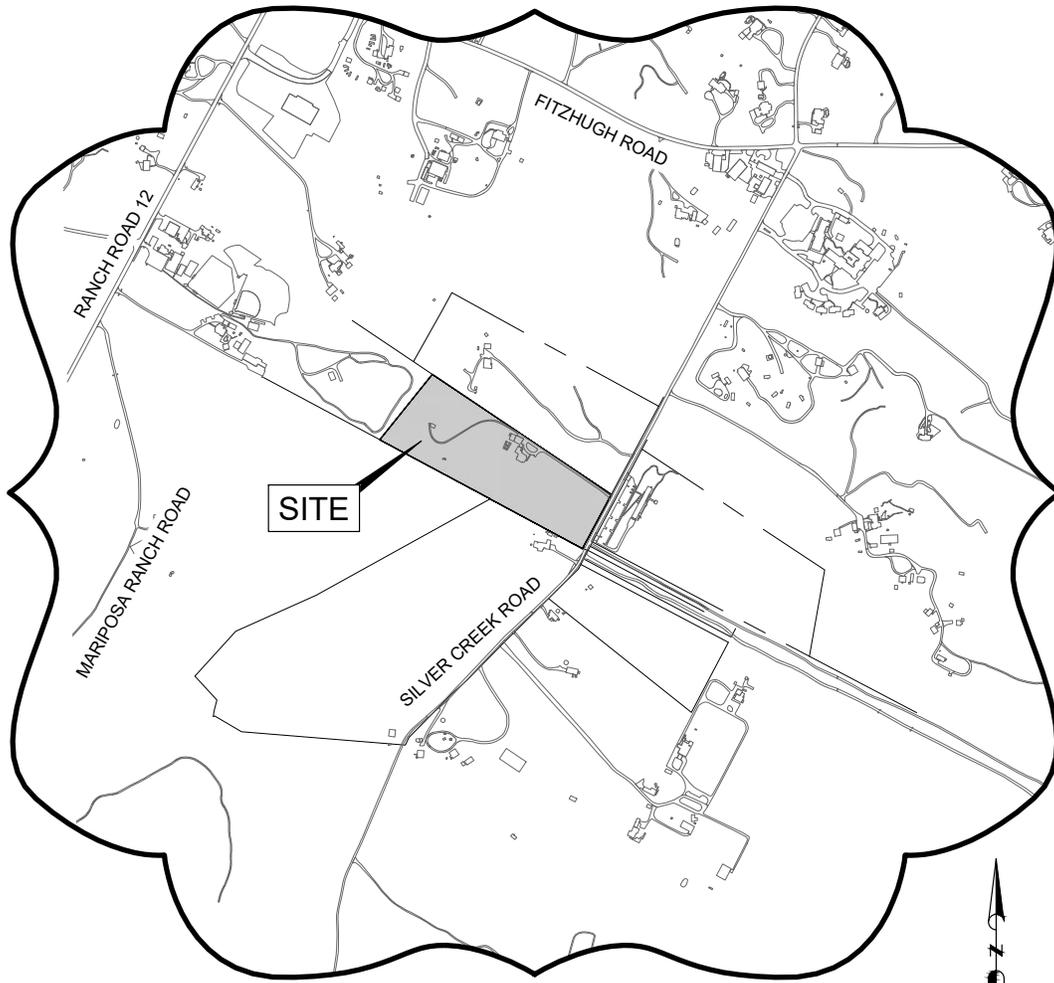
Exception Requests

<i>Project</i>	<i>Fee</i>
Exception Request	\$500

Extension of Time Requests

<i>Project</i>	<i>Fee</i>
Extension of Time Request	\$150

SITE LOCATION MAP



VICINITY MAP

NOT TO SCALE

SILVER CREEK

12800 SILVER CREEK ROAD

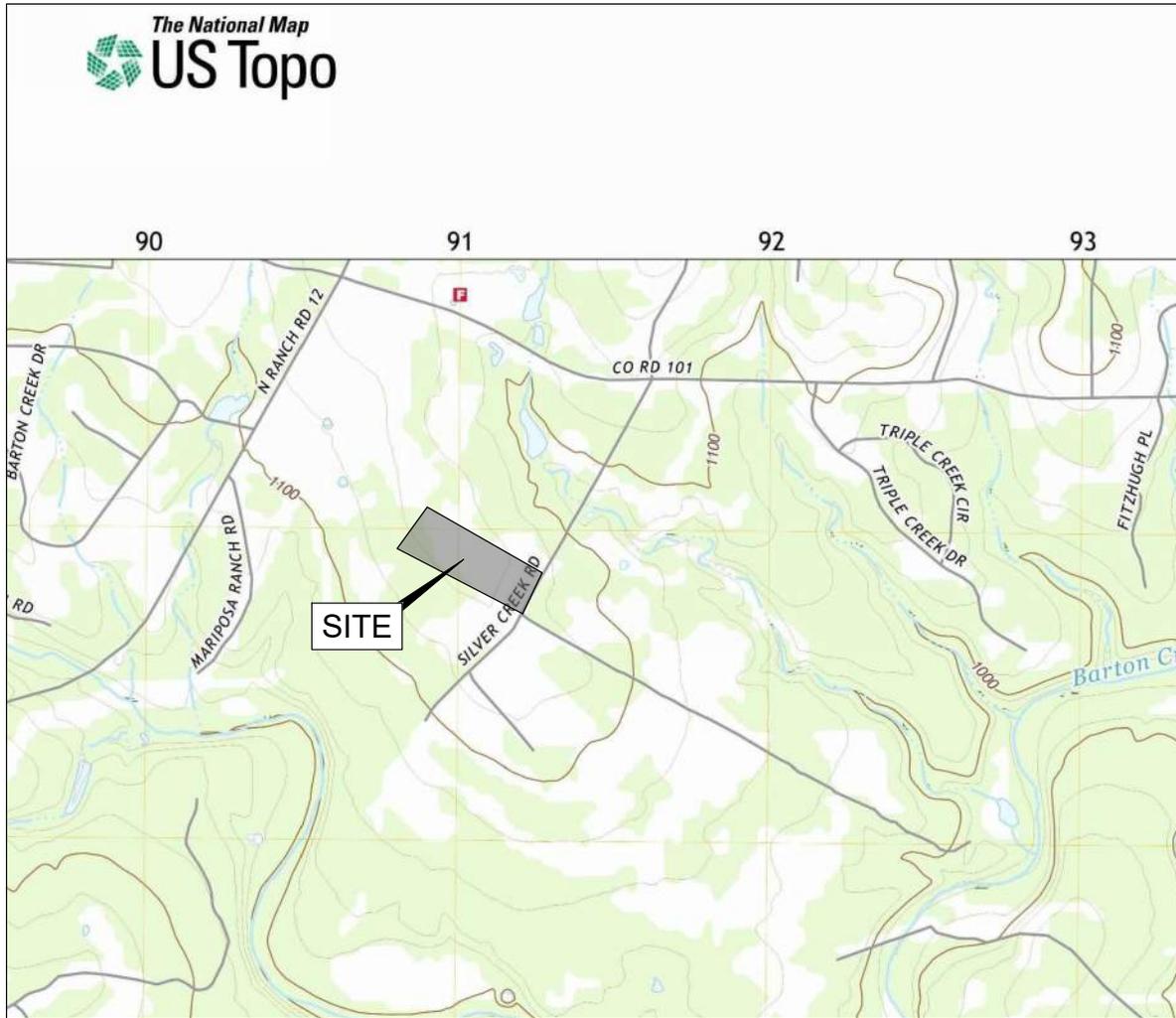
CITY OF DRIPPING SPRINGS ETJ, HAYS COUNTY, TEXAS 78620



**WUEST GROUP
ENGINEERING & SURVEYING**

FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78759
(512)394-1900

USGS DRIPPING SPRINGS QUADRANGLE



1" = 2000'

SILVER CREEK

12800 SILVER CREEK ROAD

CITY OF DRIPPING SPRINGS ETJ, HAYS COUNTY, TEXAS 78620



**WUEST GROUP
ENGINEERING & SURVEYING**

FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78759
(512)394-1900

PROJECT NARRATIVE

PREPARED FOR:

SILVER CREEK HOTEL

12800 SILVER CREEK ROAD

DRIPPING SPRINGS, HAYS COUNTY, TEXAS

DECEMBER 2023



PREPARED BY: WUEST GROUP

5207 Airport Boulevard Austin, Texas 78751

512 394 1900 | coa@wuestgrouptx.com

FIRM REGISTRATION # F-15324

TBPLS # 10194507



WUEST GROUP
ENGINEERING & SURVEYING

October 20, 2023

Planning Department
City of Dripping Springs
511 Mecer Street
Dripping Springs, Texas 78620

Re: *Project Narrative*
Silver Creek Hotel
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

On behalf of the owner, 12800 Silver Creek LLC, please accept this application packet and attached plan set as our request for Site Development Permit for the property located at 12800 Silver Creek Road.

I. PROPERTY INFORMATION

The subject property is 14.8 acres and is located in the Dripping Springs ETJ. The property is currently developed with a single-family house. This project intends to demolish all existing structures and construct a 57-key, cabin-style hotel with associated improvements. The maximum impervious cover is 35%.

II. SITE UTILITIES

The site is not currently serviced by City water or wastewater. An onsite septic system is proposed for wastewater and is being permitted separately through Hays County and TCEQ. Similarly, an onsite water supply system via well is proposed for domestic water and fire sprinkler service. Separate fire tanks are provided onsite for fire protection.

No gas service is proposed to the site. Electric service will be provided by Pedernales Electric and is proposed via underground service from existing overhead lines along Silver Creek Road.

III. TRANSPORTATION

There are two proposed driveway curb cuts off Silver Creek Road. The northern drive will serve as the primary entrance and exit while the southern driveway will be gated and used for emergency services only. A 5' sidewalk is proposed along the Silver Creek Road frontage.

IV. DRAINAGE / WATER QUALITY

The subject property lies within the Edwards Aquifer Contributing Zone in the Headwater Barton Creek Watershed. A Contributing Zone Plan (CZP) shall be submitted to Hays County for approval. No portion of this tract lies within the 100-Year Floodplain as identified by the FEMA FIRM map 48209C0106F, dated September 2nd, 2005. The approximate proposed impervious cover is 35%.

There are three existing onsite drainage areas: EXA, EXB, and EXC. EXA flows east overland to Silver Creek Road (Point of Analysis A). EXB flows west overland and converges at the southwest corner of the site (Point of Analysis B). EXC flows overland south and converges at a point just west of the middle of the south property line (Point of Analysis C).

The proposed site consists of four drainage areas: PRA, PRA Bypass, PRB, and PRC. PRA flows into Pond A before being released at the northeast corner of the site. Pond A is designed as a sedimentation pond with stacked detention. PRA Bypass consists of overland flow at the east side of the site that bypasses Pond A and flows to the same Point of Analysis A. PRB flows overland before entering Detention Pond B and is discharged at Point of Analysis B. PRC remains as overland flow to Point of Analysis C. There is a decrease in runoff to all Analysis Points from existing to proposed conditions. Areas EXB and PRB include the small offsite area draining to the site.

Additionally, three proposed onsite rain gardens (A, B, and C) treat drainage area PRB. The details and treatment calculations are in the plan set. The combination of sedimentation in Pond A and the three rain gardens satisfies the required TSS Load Removal for the entire site.

V. ENVIRONMENTAL

Suitable temporary erosion and sedimentation controls are proposed during construction of the site; please refer to the Erosion Control Plan.

We appreciate your time and attention to this project. Please feel free to contact me at (512) 394-1900 if you have any questions or concerns.

Sincerely,



Caroline Eckert, P.E.
Project Manager
Firm # F-15324





E N G I N E E R I N G
& S U R V E Y I N G

October 20, 2023

TCEQ Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

**Re: Factors Affecting Surface Water Quality
Silver Creek Hotel**
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

Surface water quality may be affected during construction of the proposed improvements and by the proposed improvements themselves.

During construction, there will be construction equipment and exposed soils on the site. Temporary best management practices (BMPs) will be employed to mitigate potential impacts to surface water quality. The temporary BMPs include silt fencing, mulch sock and stabilized construction entrances as proposed on the construction documents (see Attachment M) associated with this CZP.

Following construction, there will be roof areas and concrete paving on the site. The wet pond BMPs associated within the site plan will mitigate the potential impacts to surface water quality.

Sincerely,

Ryan Ketchum, E.I.T.
Water Group
Firm Registration No. 15324



E N G I N E E R I N G
& S U R V E Y I N G

October 20, 2023

TCEQ Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

**Re: Volume and Character of Stormwater
Silver Creek Hotel**
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

A hydraulic analysis was conducted as part of the design of this project. The overall, weighted runoff coefficient for the site increases from 0.364 to 0.579 for the 100 year storm as a result of the development.

Two detention ponds will be utilized to mitigate increases in peak flows for the 2, 10, 25, and 100 year storms as a result of the development. The ponds are sized in accordance with the City of Austin Drainage Criteria Manual.

Three rain gardens and one sedimentation pond will be used to treat stormwater runoff from the site. The water quality ponds are sized in accordance with the City of Austin Environmental Criteria Manual.

Sincerely,

Ryan Kutrick, S.I.E.
W&S Group
Firm Registration No. F-10324



Hays County Development Services

2171 Yarrington Road, Suite 100, Kyle TX 78640
512-393-2150 main / 512-493-1915 fax

July 3, 2023

To Whom It May Concern:

Re: On Site Sewage Facility Suitability (OSSF) for the Dripping Springs Hotel located at 12800 Silver Creek Road, Dripping Springs, Texas 78620, parcel ID: R19122.

I have completed my preliminary review of the Facility Planning Report submitted in support of the above referenced development in Hays County. I concur with Erin Banks, P.E., findings that this 14.78-acre parcel can be adequately served by individual on-site sewage facilities. This tract of land will be served by a public water supply provided by a public well.

This review does not authorize the start of any construction and all Hays County development authorizations and subdivision requirements must be obtained before the start of any development.

Please contact me if you have any questions concerning this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Van Gaasbeek".

Eric Van Gaasbeek, R.S., C.F.M.
Chief Environmental Health Specialist
Floodplain Administrator
OS# 0028967



E N G I N E E R I N G
& S U R V E Y I N G

October 20, 2023

TCEQ Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

**Re: BMPs for Upgradient Stormwater
Silver Creek Hotel**
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

Upgradient stormwater is not impacted nor treated by the Silver Creek Hotel project. Post project flows will flow to Point of Analysis B as they do pre-project, but through Detention Pond B.

Sincerely,

Ryan Schick, E.I.T.

Principal

Firm Registration No. E-15324



E N G I N E E R I N G
& S U R V E Y I N G

October 20, 2023

TCEQ Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

**Re: BMPs for On-site Stormwater
Silver Creek Hotel**
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

There are three existing onsite drainage areas: EXA, EXB, and EXC. EXA flows east overland to Silver Creek Road (Point of Analysis A). EXB flows west overland and converges at the southwest corner of the site (Point of Analysis B). EXC flows overland south and converges at a point just west of the middle of the south property line (Point of Analysis C).

The proposed site consists of four drainage areas: PRA, PRA Bypass, PRB, and PRC. PRA flows into Pond A before being released at the northeast corner of the site. Pond A is designed as a sedimentation pond with stacked detention. PRA Bypass consists of overland flow at the east side of the site that bypasses Pond A and flows to the same Point of Analysis A. PRB flows overland before entering Detention Pond B and is discharged at Point of Analysis B. PRC remains as overland flow to Point of Analysis C. There is a decrease in runoff to all Analysis Points from existing to proposed conditions.

Additionally, three proposed onsite rain gardens (A, B, and C) treat drainage area PRB. The details and treatment calculations are in the plan set. The combination of sedimentation in Pond A and the three rain gardens satisfies the required TSS Load Removal for the entire site.

Sincerely,

Ryan Kutnick, E.I.T.
Wuest Group
Firm Registration No. F-15824



E N G I N E E R I N G
& S U R V E Y I N G

October 25, 2023

TCEQ Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

Re: Construction Plans
Silver Creek Hotel
12800 Silver Creek Road
Dripping Springs, Hays County, Texas

To Whom It May Concern,

Applicable Construction Plans for the proposed detention and water quality ponds are included with the site plan sheets listed below.

Silver Creek Site Development Plans by Wuest Group which proposes the construction of the development and associated infrastructure.

1. Cover
4. Overall Erosion Control Plan
5. Erosion Control Plan A
6. Erosion Control Plan B
7. Erosion Control Notes
8. Erosion Control Details
9. Overall Site Plan
10. Site Plan A
11. Site Plan B
12. Site Plan Notes and Details
13. Site Plan Details
22. Overall Storm Plan
23. Storm Plan A
24. Storm Plan B
29. Existing Drainage Area Map
30. Proposed Drainage Area Map
31. Rain Garden A
32. Rain Garden B
33. Rain Garden C
34. Rain Garden Calculations
35. Sedimentation & Detention Pond A
36. Pond A Sedimentation Calculations
37. Detention Pond B
38. Storm Details

**SUGGESTED POND MAINTENANCE PLAN AND SCHEDULE FOR
BIORETENTION BASINS**

PROJECT NAME: Silver Creek Hotel

ADDRESS: 12800 Silver Creek Road

CITY, STATE, ZIP: Dripping Springs, Texas 78620

BIORETENTION BASINS

Monthly: The vegetative growth in the basin shall be checked. The growth shall not exceed 18 inches.

Quarterly: The level of accumulated silt shall be checked. If depth of silt exceeds 3 inches, it shall be removed and disposed of "properly".

The basin shall be checked for accumulation of debris and trash. The debris and trash shall be removed if excessive. All debris and trash shall be removed at least every six months.

Annually: The basin should be checked for structural integrity and repaired if necessary. During each inspection, erosion areas inside and downstream of the basin must be identified and repair or revegetated immediately.

After Rainfall: The basin shall be checked after each rainfall occurrence to ensure that it drains within 72 hours as observed in the observation well. If it does not drain within this time, the filter media shall be removed and replaced with more permeable material.

"Proper" disposal of accumulated silt shall be accomplished following Texas Natural Resource Conservation Commission and City of Dripping Springs guidelines and specifications.

An amended copy of this document will be provided to the Texas Natural Resource Conservation Commission within 30 days of any changes in the following information.

Responsible Party: 12800 SILVER CREEK LLC

Mailing Address: 2506 Toulouse Drive

City, State, Zip: Austin, Texas 78748

David Krug
Signature of Responsible Party

10/30/23
Date

**SUGGESTED POND MAINTENANCE PLAN AND SCHEDULE FOR
BATCH DETENTION BASINS**

PROJECT NAME: Silver Creek Hotel

ADDRESS: 12800 Silver Creek Road

CITY, STATE, ZIP: Dripping Springs, Texas 78620

BATCH DETENTION BASINS

Semiannually: The valve controller shall be exercised to ensure that the valve is opening and closing properly. The level sensor should be inspected. The basin, outlet structure, and trash screen should be inspected and all debris and trash should be removed at least every six months. Mowing should take place at least twice a year to prevent woody growth and control weeds, or more frequently if vegetation exceeds 18 inches in height. The facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Verify that the Logic Controller external indicators are operating properly and initiate a cycle by triggering the level sensor. All circuitry should be inspected for damage, and the controller should be reset.

Annually: The basin should be checked for structural integrity and repaired if necessary. During each inspection, erosion areas inside and downstream of the basin must be identified and repaired immediately.

After Rainfall: The basin should be checked yearly after a rainfall occurrence to ensure that it detains for 12 hours and drains within 48 hours. If it does not drain within this time, the valve should be checked for functionality and the outlet shall be checked for clogging.

Every 5 Years: The level of accumulated silt shall be checked. Sediment should be removed and disposed of "properly" from the basin every 5 years, when silt exceeds 6 inches, when the sediment interferes with the level sensor, or when the basin does not drain within 48 hours.

"Proper" disposal of accumulated silt should be accomplished following Texas Natural Resource Conservation Commission and City of Dripping Springs guidelines and specifications.

An amended copy of this document will be provided to the Texas Natural Resource Conservation Commission within 30 days of any changes in the following information.

Responsible Party: 12800 SILVER CREEK LLC

Mailing Address: 2506 Toulouse Drive

City, State, Zip: Austin, Texas 78748

David Krug
Signature of Responsible Party

10/30/23
Date

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

I DAVID KRUG
Print Name

OWNER
Title - Owner/President/Other

of 12800 Silver Creek, LLC
Corporation/Partnership/Entity Name

have authorized Representatives
Print Name of Agent/Engineer

of Wuest Group
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:

[Signature]
Applicant's Signature

6/28/23
Date

THE STATE OF Texas §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared DAVID KRUG 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 28th day of June, 2023



[Signature]
NOTARY PUBLIC

AMANDA SCHUETZ
Typed or Printed Name of Notary



MY COMMISSION EXPIRES: 06/29/24



TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN		RN

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input checked="" type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
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:	
12800 Silver Creek, LLC			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
804295963		87-3425005	
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other: LLC	
12. Number of Employees		13. Independently Owned and Operated?	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
15. Mailing Address:	1701 Directors Boulevard - Suite 300		
	City	Austin	State TX ZIP 78744 ZIP + 4
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
N/A		dkrug@krugdevelopment.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(773) 750-3706		() -	

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)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> 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.)	
12800 Silver Creek, LLC	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	12800 Silver Creek Road							
	Dripping Springs (Hays County), TX 78620							
	City	D Springs	State	TX	ZIP	78620	ZIP + 4	
24. County	Hays							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	12800 Silver Creek Road							
26. Nearest City					State	Nearest ZIP Code		
Dripping Springs					TX	78620		
27. Latitude (N) In Decimal:	30.2405			28. Longitude (W) In Decimal:	98.0531			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
30°	14'	25.8"	98°	3'	11.16"			
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)			
7011	4941		721199					
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>								
Overnight Cabin Resort								
34. Mailing Address:	Dave Krug							
	2506 Toulouse Drive							
	City	Austin	State	TX	ZIP	78748	ZIP + 4	
35. E-Mail Address:	dkrug@krugdevelopment.com							
36. Telephone Number	37. Extension or Code			38. Fax Number <i>(if applicable)</i>				
(773) 750-3706				() -				

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

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input checked="" type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Dave Krug		41. Title:	Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address	
(773) 750-3706		() -	dkrug@krugdevelopment.com	

SECTION V: Authorized Signature

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

Company:	12800 Silver Creek, LLC	Job Title:	Manager
Name <i>(In Print)</i> :	Dave Krug	Phone:	(773) 750- 3706
Signature:	<i>David Krug</i>	Date:	11/1/22

Storm Water Pollution Prevention Plan INTRODUCTION AND BACKGROUND

In 1972, Congress passed the Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), to restore and maintain the quality of the nation's waters. The ultimate goal of the CWA was to ensure the nation's rivers and streams were fishable, swimmable, and drinkable. The CWA has been amended several times.

One important set of amendments was the Water Quality Act of 1987 that established a phased approach for storm water discharge regulation in the United States. The CWA established the National Pollutant Discharge Elimination System (NPDES), a storm water program which requires operators of construction sites disturbing one acre or more to obtain authorization to discharge under an NPDES construction storm water permit. The development and implementation of storm water pollution prevention plans (SWPPP) is the focus of NPDES storm water permits for regulated construction activities. The Texas Commission on Environmental Quality is authorized in the state of Texas to implement the NPDES program under the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit No. TXR150000.

Development, implementation, and maintenance of the SWPPP provides the framework for reducing soil erosion and minimizing pollutants in storm water during construction. The SWPPP describes and ensures the implementation of practices that will be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site, and assure compliance with the terms and conditions of the TCEQ TPDES program for construction sites.



B Wise Environmental Consulting, Inc. provides innovative solutions to water quality control and treatment issues that arise during construction including controlling erosion and pollution from construction activities. We offer turnkey SWPPP compliance services that relieve the regulatory burden on General Contractors during construction activity. Our goal is to lower the total cost of compliance while raising compliance performance by education, innovation, and a dedication to providing a high level of customer service.

Storm Water Pollution Prevention Plan
DEVELOPED UNDER TPDES CONSTRUCTION GENERAL PERMIT TXR150000

Section 1 PROJECT AND RESPONSIBLE PARTIES

Contact Information

Section 2 SITE DESCRIPTION

Site location

Site area estimates

- Total area
- Total disturbed area

Existing conditions

Runoff factors

- Soil type
- Pre-construction estimate
- Post-construction estimate

Description of construction activity

Intended sequence of construction activity

Major grading activities record

Section 3 MAPS AND SITE PLANS

General location map

Site plans

Receiving waters, wetlands or special aquatic sites

Support facilities, if any

Industrial activity other than construction, if any

Endangered or threatened species or critical habitats, if any

Historic places, if any

Section 4 CONTROLS

Erosion and sedimentation controls

- Short and long term goals and criteria

Stabilization practices

- Short and long term goals and criteria
- Interim and permanent stabilization practices for this site

Structural practices

- Sequence of major erosion and sedimentation control activities

Sedimentation control practices

Permanent storm water management

Other controls

- Waste disposal
- Off-site vehicle tracking
- Dewatering
- Concrete truck wash out
- Pressure washing
- Dust control
- Pollutant sources from support activities and controls
- Measures to protect certain species or habitat, if any
- Measures to protect historical sites, if any

Approved state, local plans or tribal plans

Section 5 MAINTENANCE

Maintenance description and schedule

Section 6 SITE INSPECTIONS

Scope of inspections

Schedule of inspections

SWPPP modifications as a result of inspections

Inspection Report format

Section 7 SPECIAL CONDITIONS

Non-storm water discharges

Other permitted discharges

Spill prevention

- Good housekeeping practices
- Hazardous product practices

Potentially polluting materials

- Product specific practices
- Spill prevention practices

Releases in excess of reportable quantities

Spill response plan

- Leak or spill
- Point of contact in case of reportable quantity release
- Reportable quantities guidance
- Reporting guidance

Potentially polluting activities

Section 8 STANDARD SPECIFICATIONS

Erosion controls

Runoff controls

Sediment controls

Good housekeeping/materials management

Section 9 TPDES GENERAL PERMIT

Copy of Construction General Permit TXR150000

Section 10 CERTIFICATIONS AND DOCUMENTS

Notice of Intent/Construction Site Notice

Notifications

Certifications

Delegation of Authority and Inspector Qualifications

Section 11 SWPPP AMENDMENTS LOG

Log of major modifications, if any, to this SWPPP

Section 12 INSPECTION RECORDS

Completed Inspection Reports

SWPPP Objectives

The SWPPP outlines the steps you will take to comply with the terms and conditions of your construction general permit. Keeping the following objectives in mind as you proceed during construction will help guide you in addressing your permit requirements and in protecting water quality.

- **Minimize the area and duration of exposed soils**
Clearing only land that will be under construction in the near future, a practice known as construction phasing, can reduce off-site sediment loads by 36 percent for a typical development. Additionally, minimizing the duration of soil exposure by stabilizing soils quickly can reduce erosion dramatically.
- **Control the perimeter of your site**
Divert storm water coming on to your site by conveying it safely around, through, or under your site. Avoid allowing run-on to contact disturbed areas of the construction site. For the runoff from the disturbed areas of the site, remember that BMPs such as silt fence is there to capture sediment before it leaves your site.
- **Protect receiving waters adjacent to your site**
Erosion and sediment controls are used around the site as needed, but operators should consider additional controls in areas that are adjacent to receiving waters or other environmentally sensitive areas. *Remember, the primary purpose of erosion and sediment controls is to protect surface waters.*
- **Follow pollution prevention measures**
Provide proper containers for waste and garbage at your site. Store hazardous materials and chemicals so that they are not exposed to storm water. If dewatering is needed, remember that the dirty water must be filtered before discharge offsite. Pay particular attention to the viability and function of your stabilized construction exit and concrete wash out facility.
- **Protect slopes and channels.**
Convey concentrated storm water runoff around the top of slopes and stabilize slopes as soon as possible. This can be accomplished using pipe slope drains or earthen berms or other flow controls that will convey runoff around the exposed slope. Avoid disturbing natural channels and the vegetation along natural channels, if possible.
- **Stabilize the site as soon as possible.**
Get your site to final grade and either permanently or temporarily stabilize all bare soil areas as soon as possible. Take into consideration germination times for the grasses or other vegetation selected, and provide additional stabilization materials (such as Flexible Growth Medium) on erosion prone areas such as slopes and drainage ways. Also consider seasonal limitations to plant establishment and growth, such as drought or cold temperatures, and make an effort to ensure that areas that are not showing adequate vegetation establishment are reseeded immediately. Areas needed for future roads, construction, or other purposes should be temporarily stabilized (see your permit for requirements related to areas of the site not currently under active construction). Establishing a vegetated cover on as much of the site as possible will help to minimize erosion and sediment problems. Perimeter controls should remain in place until final stabilization has been achieved.

Deadlines for SWPPP Preparation, Implementation and Compliance

The SWPPP must be prepared *prior to filing the Notice of Intent (NOI) for a large site (≥ 5 AC) or posting the Construction Site Notice for a small site (≥ 1 AC but < 5 AC), and implemented prior to commencing construction activities that result in soil disturbance.*

Plan Review and Making Plans Available

The SWPPP must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWPPP, but ideally, it would be kept on site in a water resistant lockbox for easy access. The SWPPP must be made readily available at the time of an on-site inspection by federal, state, or local agencies approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site.

In addition to the requirement to post the NOI, a primary operator of a large construction activity must also post the appropriate Construction Site Notice (CSN) near the main entrance of the construction site. A

secondary operator of a large construction activity must post only the appropriate CSN. For small construction sites, the primary and secondary operators must post the appropriate CSN but are not required to file an NOI. These notices must be posted near the main entrance to the construction site and be readily available for viewing by the general public (without having to trespass on your site); local, state, and federal authorities.

Responsibilities of Operators

All secondary operators and primary operators with control over construction plans and specifications must:

- ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of the Texas General Permit;
- ensure that the SWPPP indicates the areas of the project where they have control over project specifications (including the ability to make modifications in specifications) in the event that this project has multiple operators;
- ensure that any other operators that may be affected by modifications in project specifications are notified in a timely manner so that they may modify their best management practices as necessary to remain compliant with the conditions of the general permit; and
- ensure that the SWPPP for portions of the project where they are operators indicates the name and site-specific TPDES authorization numbers for permittees with the day-to-day operational control over those activities necessary to ensure compliance with the SWPPP and other permit conditions. If the party with day-to-day operational control has not been authorized or has abandoned the site, the person with control over project specifications is considered to be the responsible party until the authority is transferred to another party and the SWP3 is updated.

Primary Operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with your SWPPP and other permit conditions must ensure that the SWPPP accomplishes the following requirements:

- meets the requirements of this general permit for those portions of the project where they are operators;
- identifies the parties responsible for implementation of best management practices (BMPs) described in the SWP3;
- indicates areas of the project where they have operational control over day-to-day activities; and
- includes, for areas where they have operational control over day-to-day activities, the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications.

Terminating Coverage

Notice of Termination (NOT) Required

If you submitted an NOI for authorization under the general permit, you must apply to terminate that authorization by submitting a Notice of Termination (NOT) form. Compliance with the conditions and requirements of this SWPPP is required until an NOT is submitted.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge within 30 days after any of the following conditions are met:

- final stabilization has been achieved on all portions of the site that are under your responsibility;
- a transfer of operational control has occurred (see below); or
- you have obtained alternative authorization under an alternative permit.

Termination of Coverage for Small Construction Sites

Each operator must remove the Construction Site Notice (CSN) upon meeting any of the conditions listed below, complete the applicable portion of the CSN related to removal of the site notice, and submit a copy of the completed CSN to the operator of any MS4 receiving the discharge, within 30 days of meeting any of the following conditions:

- final stabilization has been achieved on all portions of the site that are under your responsibility;
- a transfer of operational control has occurred (see below); or
- you have obtained alternative authorization under an alternative permit.

Authorization to discharge under this general permit terminates immediately upon removal of the applicable site notice. Compliance with conditions and requirements of this permit is required until the CSN is removed.

Transfer of Operational Control

Coverage under the general permit is not transferable. A transfer of operational control includes changes to the structure of your company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State.

When the primary operator of a large construction activity changes or operational control is transferred, the original operator must submit a Notice of Termination (NOT) within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control.

Operators of small construction sites who were not required to file an NOI must remove the original Construction Site Notice (CSN), and the new operator must post the required CSN prior to the transfer of operational control.

A transfer of operational control occurs when either of the following criteria is met:

- another operator has assumed control over all areas of the site that have not been finally stabilized; and
- all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWPPP, or transferred to a new operator, provided that the permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Record of this notification (or attempt at notification) shall be retained by the operator with all other SWPPP documentation for three (3) years. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

Definitions Of Terms Found In This SWPPP

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction - The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., stockpiling of fill material, demolition)

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located $\frac{1}{4}$ mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

Construction Activity - Includes soil disturbance activities, including clearing, grading, excavating, construction-related activity (e.g., stockpiling of fill material, demolition), and construction support activity. This does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Construction Support Activity - A construction-related activity that specifically supports construction activity, which can involve earth disturbance of pollutant-generating activities of its own, and can include, but are not limited to, activities associated with concrete or asphalt batch plants, rock crushers, equipment staging or storage areas, chemical storage areas, material storage areas, material borrow areas, and excavated material disposal areas. Construction support activity must only directly support the construction activity authorized under this general permit.

Discharge – For the purposes of this permit, the drainage, release, or disposal of pollutants in storm water and certain non-storm water from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling), or other industrial storm water directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Facility or Activity – For the purpose of this permit, referring to a construction site, the location of construction activity, or a construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures of appurtenances uses at a construction site or industrial site.

Final Stabilization - All soil disturbing activities at the site have been completed and a uniform (i.e., evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices.

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Municipal Separate Storm Sewer System (MS4) - A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a discharger authorized under a general permit requesting termination of coverage.

Operator - The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – the person or persons associated with a large or small construction activity that meets either of the following two criteria:

- the person or persons have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- (b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a storm water pollution prevention plan (SWPPP) for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person whose operational control is limited to the employment of other operators or to the ability to approve or disapprove changes to plans and specifications. A secondary operator is also defined as a primary operator and must comply with the permit requirements for primary operators if there are no other operators at the construction site.

Outfall - For the purpose of this permit, a point source at the point where storm water runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee - An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge storm water runoff and certain non-storm water discharges.

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

Pollution - (from Texas Water Code §26.001(14)) The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land.

Storm Water (or Storm Water Runoff) - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Associated with Construction Activity - Storm water runoff from a construction activity where soil disturbing activities (including clearing, grading, excavating) result in the disturbance of one (1) or more acres of total land area, or are part of a larger common plan of development or sale that will result in disturbance of one (1) or more acres of total land area.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to capture or prevent pollution in storm water runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization - A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Waters of the United States - Waters of the United States or waters of the U.S. means:

- all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- all interstate waters, including interstate wetlands;
- all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - which are used or could be used for industrial purposes by industries in interstate commerce;
- all impoundments of waters otherwise defined as waters of the United States under this definition;
- tributaries of waters identified in paragraphs above;

- the territorial sea; and
- wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR '423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area=s status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

PROJECT AND RESPONSIBLE PARTIES INFORMATION

PROJECT NAME AND LOCATION

Blue Sage Resort & Spa
12800 Silver Creek Road
Dripping Springs, Texas 78620

OWNER NAME AND CONTACT INFORMATION

12800 Silver Creek, LLC
2506 Toulouse Drive
Austin, Texas 78748

David Krug, Manager
773.750.3706

PRIMARY OPERATOR NAME AND CONTACT INFORMATION

SECONDARY OPERATOR NAME AND CONTACT INFORMATION

12800 Silver Creek, LLC
2506 Toulouse Drive
Austin, Texas 78748

David Krug, Manager
773.750.3706

AUTHORIZED SWPPP AUTHOR CONTACT INFORMATION

B Wise Environmental Consulting, Inc.
PO Box 1278
Georgetown, TX 78627
512-863-3000

Brandi Stark, President
CPESC #4248

12/12/2023

SITE LOCATION

The construction site is located at 12800 Silver Creek Road, within the City of Dripping Springs ETJ, in Hays County. The property is bounded on the east by Silver Creek Road and just south of Fitzhugh Road.

Latitude: 30.240963 ° N

Longitude: -98.053488 ° W

SITE AREA ESTIMATES

The total area of the entire property is 14.778 acres. The site area where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas which may be authorized under the permittee's NOI, is approximately 15.2 acres.

EXISTING CONDITIONS

The area to be disturbed is currently partially developed as a single-family residence, with groundcover consisting of grass, trees and a gravel driveway. The site generally drains to the east, south, and southwest.

RUNOFF FACTORS

The project site lies within Hays County. According to the County Soil Report provided by the USDA Natural Resources Conservation Service the soil on this site is described as Doss Silty Clay, Real-Comfort-Doss Complex, and Brackett-Rock Outcrop-Comfort Complex.

The Pre-construction Runoff Coefficient "C" for the site is:

- .20

The Weighted Runoff Coefficient "C" for the overall project after construction, including utilized and reserved areas, is calculated as:

- .80

CONSTRUCTION ACTIVITY

This project entails the construction of resort and spa, with all associated parking areas, access drives, sidewalks, and utilities.

INTENDED SEQUENCE OF MAJOR CONSTRUCTION ACTIVITY

The Construction Schedule for this project can be found in this section.

Due to the nature of construction activity, these time frames may overlap.

Phase 1

Includes the installation of sediment and erosion controls and tree protection fencing as required.

Phase 2

Includes demolition, clearing, grading, excavation, building and parking area construction, and utility installation.

Phase 3

Includes the installation of landscaping and the stabilization of all areas disturbed during construction.

Phase 4

Includes the removal of all sediment and erosion controls once the site has achieved stabilization requirements.

Total construction time is expected to be approximately 24 months.

MAJOR GRADING AND OTHER SITEWORK ACTIVITIES

Notations as to ongoing grading and other site work activities can also be found in both the weekly SWPPP Inspection Reports and in the Project Superintendent’s daily report on the status of this project and may be referenced therein as a part of the documentary record called for by TXR150000.

***Blanks are to be utilized to indicate other activities not listed and to indicate dates when construction activities temporarily or permanently cease on a portion of the site. When logging stabilization activities, indicate specific area.

ACTIVITY	BEGIN DATE	END DATE
BMP Installation		
Demolition		
Clearing		
Rough Cut Pond/Sedimentation Basin		
Rough Grade		
Underground Utilities		
Curb and Gutter		
Pad Preparation		
Paving Preparation		
Concrete Placement		
Final Grading		
Pond Stabilization		
Landscaping		
Final Stabilization		

GENERAL LOCATION MAP

Site location maps are located behind this page. If new site locations are identified later during construction, the location maps and this SWPPP will be revised as appropriate.

SITE PLANS

All available site plans and related engineer's construction drawings, which provide information on site conditions, drainage and stabilization, are located behind this page. In general, these drawings (to the extent applicable and practicable) include the following:

- drainage patterns and approximate slopes anticipated after major grading activities;
- areas where soil disturbance will occur;
- locations of all major structural controls either planned or in place;
- locations where temporary or permanent stabilization practices are expected to be used;
- locations of construction support activities, including off-site activities, that are authorized under the permittee's NOI, including material, waste, borrow, fill, or equipment storage areas;
- surface waters (including wetlands) either at, adjacent, or in close proximity to the site;
- locations where storm water discharges from the site directly to a surface water body or a municipal separate storm sewer system; and
- vehicle wash areas.

If new construction drawings are made available later during construction, relevant drawings will be added to this section and this SWPPP will be revised as appropriate.

RECEIVING WATERS, WETLANDS AND SPECIAL AQUATIC SITES

This project is located in the Barton Creek watershed, TCEQ Segment #1430, and the Tributaries to Barton Creek watershed, TCEQ Segment #1430B, which both ultimately receive storm water runoff from the site through the existing storm sewer system. Neither water body is listed on the 2022 State of Texas 303d list of Impaired Water Bodies. There is currently not an approved TMDL or Implementation plan for either water body. No existing wetlands or other special aquatic sites have been identified at or near this site. However, if any are discovered, this SWPPP will be revised to reflect such information.

This site is located over the Contributing Zone of the Edwards Aquifer. A Contributing Zone Plan has been completed and approved for this project and is incorporated here via reference.

SUPPORT FACILITIES

Offsite support for this project will be provided by the following vendors/sources. These facilities are not covered under this Operator's permit.

Concrete

The specific batch plant, certain only on the day of any particular pour, can be identified by contacting:

Select Fill/Soil

Will be sourced from:

Asphalt

Will be provided by the company indicated below. The specific batch plant can be identified by contacting:

INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION

There will be no discharge at this site that is associated with any activity other than construction.

ENDANGERED OR THREATENED SPECIES OR CRITICAL HABITATS

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not permitted, unless the requirements of the Endangered Species Act are satisfied. Measures will be taken to prevent adverse effects on listed endangered or threatened species or their critical habitat, including the implementation of site-specific controls where required. If such measures are needed, this SWPPP will be revised to reflect such information.

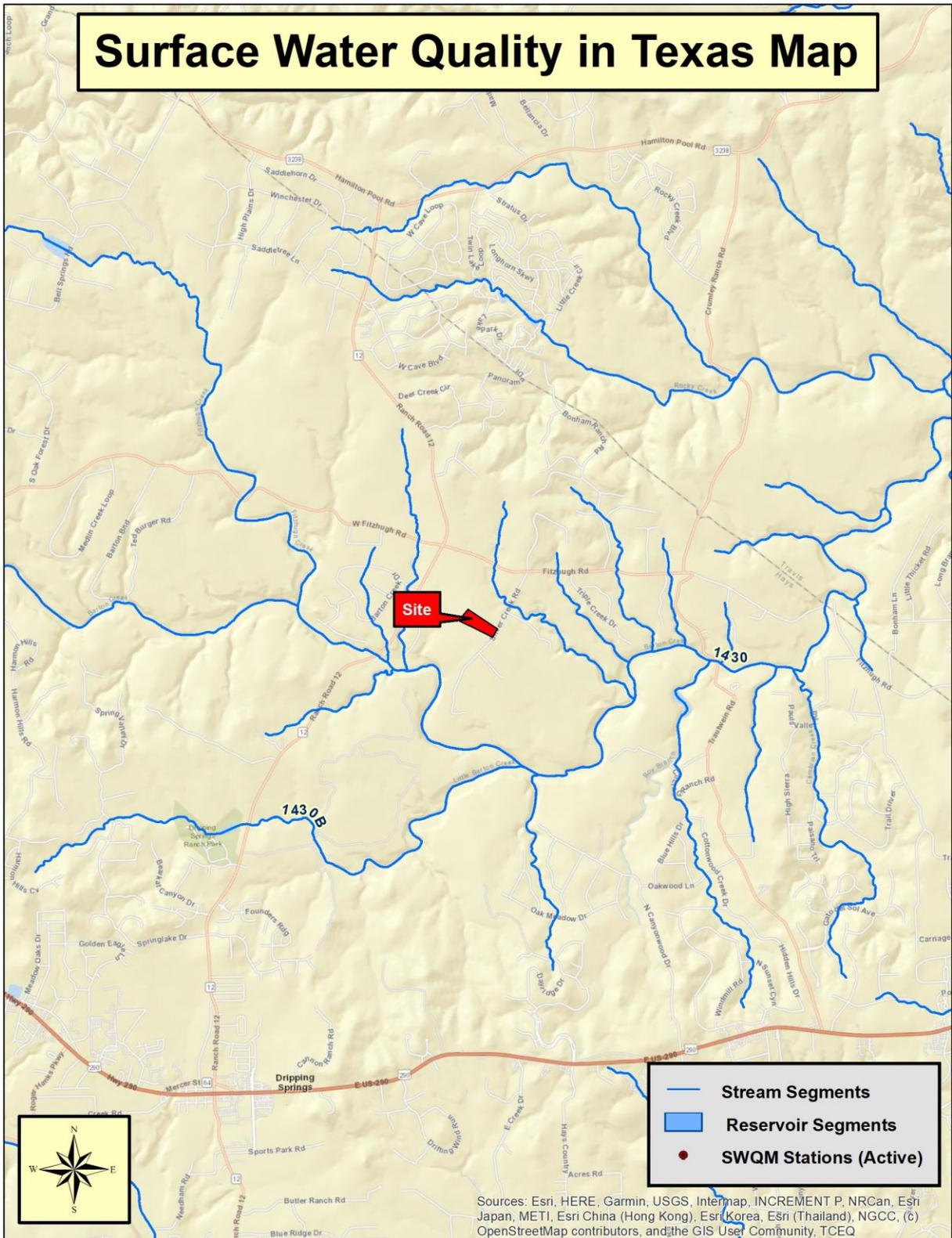
HISTORIC PLACES

No historic sites are known to exist at this site. However, if any historic sites are discovered, this information will be revised to reflect such information.

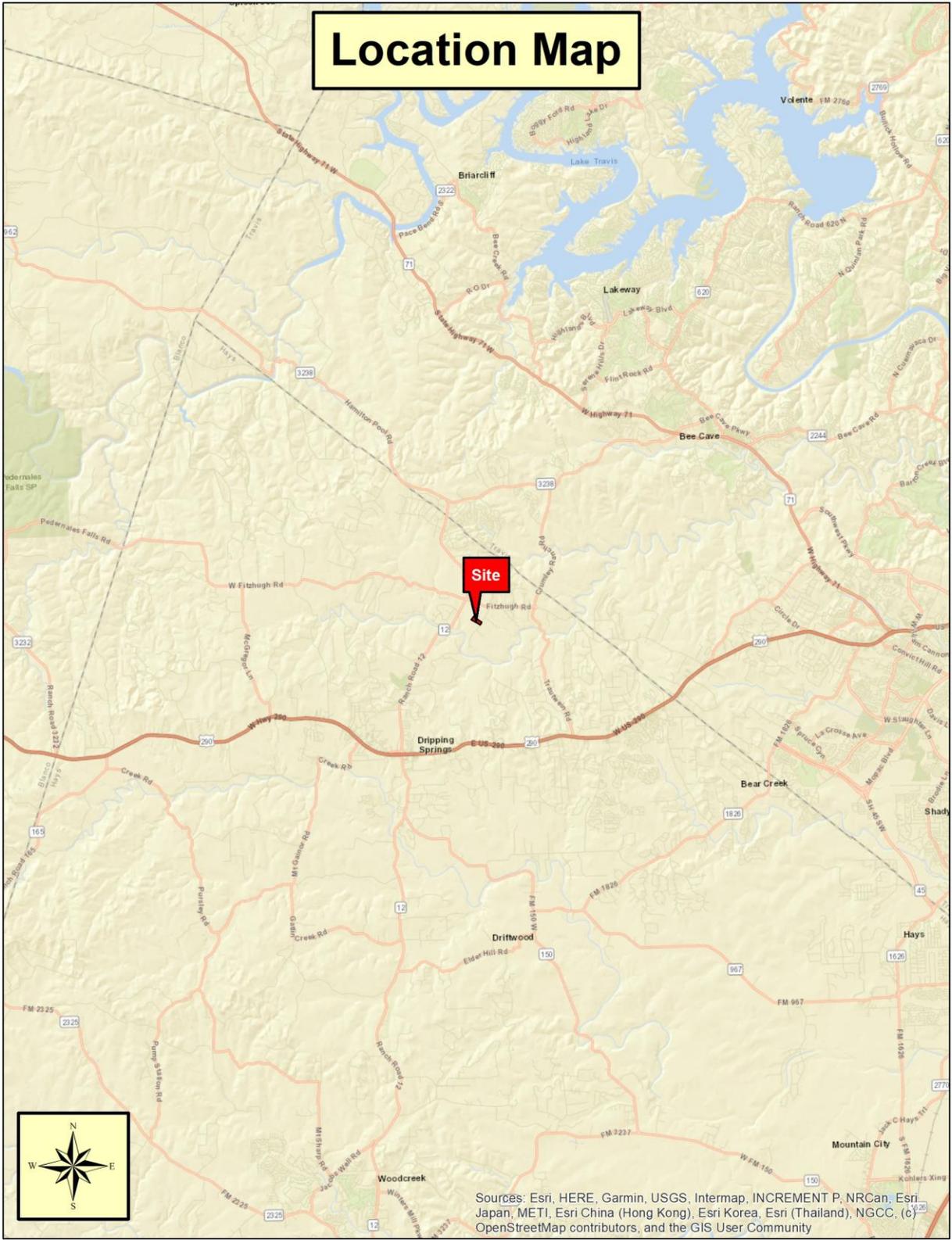
Aerial Map



Surface Water Quality in Texas Map



Location Map



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

EROSION AND SEDIMENTATION CONTROLS

Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

Major erosion and sedimentation controls are indicated on the SWPPP Site Plan, located in the previous section, *Section 3 Maps and Plans*.

Short and Long Term Goals and Criteria:

- Sediment will be retained on site to the extent practicable with consideration for local topography, soil type, and rainfall.
- Control measures will be properly selected, installed, and maintained in accordance with manufacturers' specifications and good engineering practices.
- If periodic inspections or other information indicates that a control is being used incorrectly, or that the control is performing inadequately, it will be replaced or modified immediately upon discovery.
- If sediment escapes the site, off-site accumulations will be removed at a frequency to minimize negative impacts and whenever feasible, prior to the next rain event.
- Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.
- Litter, construction debris, and construction chemicals exposed to storm water will be removed, covered or otherwise prevented from becoming a pollutant source.
- Offsite materials storage areas, if used (also including overburden and stockpiles of dirt, borrow areas, etc.), are considered a part of the project and will be addressed in the SWPPP.

There are currently no plans for offsite material storage areas. Should this status change, this SWPPP will be revised as appropriate.

STABILIZATION PRACTICES**Short and Long Term Goals and Criteria:**

- Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next working day, following the day when earth disturbing activities have permanently ceased.
- Except as provided below, stabilization measures will be initiated within 14 days after construction activity in the applicable portion of the site has temporarily or permanently ceased:
 - When precluded by snow or frozen ground
 - When earth disturbing activities will be resumed within 21 days
 - In arid areas, semiarid areas, and areas experiencing droughts where vegetative controls are not feasible due to arid conditions, the operator shall install non-vegetative erosion controls.
 - In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWPPP the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequency established for unstabilized sites.

Interim and Permanent Stabilization Practices for this Site include:

- A stabilized construction exit will be constructed of 3x5 open graded rock to minimize, to the extent practicable, the offsite tracking of sediment and generation of dust unless existing pavement is available.

- Native topsoil will be preserved, unless the intended function of a specific area of the site dictates that the soil be disturbed or removed, or it is infeasible.
- Any staging or parking areas will also be stabilized to minimize to the extent practicable, the offsite tracking of sediment and generation of dust.
- Newly graded areas will have textured soil surfaces to reduce sheet flow and improve surface water impoundment.
- Filter Fabric Fence will be used to protect perimeters and temporary earth stockpiles while they are in use.
- Vegetative stabilization will be initiated on all disturbed soil at the completion of construction.
- Efforts will be made to minimize soil compaction in post-construction pervious areas, unless the intended function of a specific area of the site dictates that the soil be compacted. In areas of the site where final vegetative stabilization will occur or where infiltration practices will be installed, vehicle and equipment use will be restricted to avoid soil compaction, or prior to seeding or planting areas of exposed soil that have been compacted, techniques that condition the soils to support vegetative growth will be used if necessary and feasible.
- Tree protective fencing will be implemented around specific trees during the construction project as designated on plans.
- Upon completion of construction, landscaping, consisting of sod/hydro-mulch, mulch, trees, shrubs, and miscellaneous plant material will be installed.

STRUCTURAL PRACTICES

These practices will be utilized to divert flows away from exposed soils, to limit contact of runoff with disturbed areas, or to lessen the off-site transport of eroded soils.

- Filter Fabric Fence will be erected at the perimeter of the area to be disturbed, as needed to prevent the escape of silt and sediment from the construction activity.
- Inlet Protection Barriers will be placed in existing storm drain inlets as needed to prevent silt and sediment from entering the storm sewer system.
- Inlet Protection Barriers will also be placed in new storm drain inlets as they are installed.
- Stabilization measures will be utilized on the detention pond slopes to minimize rill erosion.
- Flow Control Barriers, acting as a velocity dissipation device, will be installed at the detention pond outfall to minimize scouring at discharge and the escape of silt and sediments.
- Flow Control Barriers will be placed in the ditch/channel adjacent to the site to provide non-erosive flow velocity, so that natural physical and biological characteristics and functions are maintained and protected.

Any additional controls which are implemented in response to changing conditions during construction are to be noted below:

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Sequence of Major Erosion and Sediment Control Activities

Phase 1

The Filter Fabric Fence will be installed at the site boundaries where needed to prevent the escape of silt and sediment, prior to any disturbance of the soil on this site. Inlet Protection Barriers will be placed in existing storm drain inlets as needed. Tree protecting fencing will be installed prior to disturbance of soil on site as specified.

Phase 2

Inlet Protection Barriers will be placed in new storm drain inlets as they are installed. Flow Control Barriers will be installed at the detention pond outfall upon completion. Stabilization Measures will be installed at the detention pond slopes upon final grading.

Phase 3

When construction activity is substantially complete, temporary structural controls will then be removed and all disturbed soils will be stabilized with plant material.

SEDIMENTATION CONTROL PRACTICES

Sedimentation Basins

A sedimentation basin will be utilized as required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

The permanent storm water detention pond will be rough cut at the beginning of the project and will serve as a temporary sedimentation basin during construction.

PERMANENT STORM WATER MANAGEMENT

The area surrounding the new building(s) will be planted with shrubs and other plant material providing flow attenuation and partial vegetative filtration in unpaved areas disturbed by construction activities. Additional measures shall be performed as required to ensure establishment of soil cover where evidence of erosion occurs.

Storm water will discharge from the site to the existing storm sewer system, via an onsite detention pond with restricted outfall and a series of rain gardens.

This Operator is responsible only for the installation and maintenance of the described storm water management measures prior to final stabilization of the site or prior to submission of an NOT.

OTHER CONTROLS

Waste Disposal

Waste Materials

All waste materials will be collected and stored in a metal dumpster provided by:

_____ . The dumpster will meet all local and state solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The trash and debris will be hauled to an approved landfill. No construction waste material will be buried or burned onsite. Maintenance work on vehicles/equipment will not be allowed onsite except for emergency repair. All construction personnel will be instructed regarding the correct procedure for waste disposal. The Project Superintendent, who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Hazardous Waste

No hazardous waste is expected to be generated or encountered in this project. In the event that hazardous waste is encountered, all hazardous waste materials will be disposed of in the manner specified by local or

state regulation or by the manufacturer. The Project Superintendent, who manages day-to-day site operations, will be responsible for seeing that these practices are followed.

- **Sanitary Waste**

Sanitary portable units will be provided for use by construction personnel. Sanitary waste will be collected and disposed of offsite. A licensed sanitary waste management contractor:

_____, will regularly collect all sanitary waste from the portable units.

- **Compliance with State, Tribal and Local Disposal Regulations**

Methods for collecting, hauling and disposing of spoil, waste material, sanitary and hazardous wastes will be in compliance with applicable federal, state, and local regulations.

Offsite Vehicle Tracking

A stabilized construction entrance will be provided at necessary locations to minimize offsite tracking of sediments and generation of dust, to the extent practicable. In the event that tracking occurs, the paved public roadways affected by work operations will be cleaned as necessary to remove any excess mud, dirt or other matter tracked from the site.

Dewatering

Should site dewatering be required, all storm water runoff that requires dewatering shall be filtered to reduce sediment transport.

When pumping (dewatering) standing storm water from the site, the operator shall use appropriate Best Management Practices (BMPs). Untreated/Direct discharge into a storm sewer will not be allowed.

Concrete Truck Wash Out

Concrete washouts are used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solids for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding.

Direct discharge of concrete truck wash out water to surface waters or storm drain conveyances is prohibited. Wash out water will be discharged only to structural controls which have been designed specifically for this purpose. Wash out during rain events should be avoided.

Pressure Washing

If pressure washing is done at the site, all run-off will be captured and treated as necessary.

Dust Control

The transport of air-borne dust and sediment from this site will be controlled as needed, to the extent practicable, by appropriate methods which may include periodic watering or use of approved chemical stabilizers.

Pollutant Sources from Support Activities and Controls

No discharges of storm water from associated construction activities, including concrete batch plants, asphalt batch plants, equipment staging areas, and material storage yards, material borrow areas and excavated material disposal areas will take place under this SWPPP. All work will be conducted at the project site. If any support activities occur off site, this SWPPP will be amended to describe them and any additional control measures that may be needed beyond those described herein.

Measures to Protect Certain Species, or Critical Habitat

There are no special measures required to protect threatened or endangered species/critical habitat on this site.

Measures to Protect Historical Sites

There are no historical sites known to exist at this site. However, if any historical sites are discovered, this information will be revised to reflect appropriate coordination.

APPROVED STATE, LOCAL OR TRIBAL PLANS

This plan meets the storm water management and erosion and sediment control measures as required by the City of Dripping Springs, Hays County and the TPDES General Permit TXR150000.

This SWPPP will be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or storm water management site plans or site permits approved by state or local officials from whom the permittee receives written notice.

No tribal land is known to occur at the site. However, if tribal land is found to occur at the site, then the information will be revised to reflect appropriate coordination.

It shall be the responsibility of the primary operator to insure all erosion and sedimentation control measures and practices identified in this SWPPP are maintained in effective operating condition as follows:

- Erosion and sediment control measures that have been improperly installed or have been disabled, run-over, removed, or otherwise rendered ineffective will be replaced or corrected immediately upon discovery.
 - If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the control will be replaced or modified as practicable after making the discovery.
- Maintenance and repairs identified as necessary in an inspection (see *Section 6 Site Inspections* below) will be conducted before the next anticipated storm event, if feasible.
- If maintenance prior to the next anticipated storm event is impracticable, the reason will be documented in the SWPPP and maintenance will be scheduled and accomplished as soon as practicable.
- Sediment will be removed from the sediment fences and inlet protection barriers before it reaches 33% of the above ground height of the barrier.
- If sediment escapes the site, accumulations will be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee will work with the owner or operator of the property to remove the sediment

The Maintenance log in Section 12 will be updated as needed to reflect maintenance activities performed.

SCOPE OF INSPECTIONS

- Disturbed areas of the construction site which have not been finally stabilized;
- Areas used for storage of materials that are exposed to precipitation will be inspected for evidence of, or the potential for, pollutants entering the drainage system;
- Erosion and sediment control measures identified in the plan will be observed for evidence of, or the potential for, pollutant entering the drainage system—and to ensure that they are operating correctly;
- Locations where vehicles enter or exit the site will be inspected for evidence of offsite sediment tracking; and,
- Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

SCHEDULE OF INSPECTIONS

- Inspections will be conducted by the responsible person at least once every 7 calendar days or
- Inspections will be conducted by the responsible person at least once every 14 calendar days and within 24 hours after a rain event of 0.5 inch or greater.
- If a change is made to the inspection schedule, the change can only occur a maximum of one time each month, the change must occur at the beginning of the calendar month and the reason for the schedule change must be documented in this plan.
- In the event of flooding or other uncontrollable situations which prohibit access the site, inspections will be conducted as soon as access is practicable.

SWPPP MODIFICATIONS AS A RESULT OF INSPECTIONS

Based on the results of each inspection, *Section 2 Site Description* and *Section 4 Controls* elsewhere in this SWPPP will be revised as appropriate, but in no case later than 7 calendar days following the inspection. If modifications to BMPs are necessary, they will be implemented whenever possible before the next storm event, or if that is impracticable, the changes will be implemented as soon as practicable. Major modifications to this SWPPP will be logged in *Section 11 SWPPP Amendments Log* as they are made.

In addition to indicating changing BMP needs and locations on the SWPPP Site Map, current locations of the following shall also be noted when applicable:

- Portable toilets
- Material storage areas
- Vehicle and equipment fueling and maintenance areas
- Concrete Washouts
- Paint and stucco washouts
- Dumpsters or other trash and debris containers
- Spill Kits
- Stockpiles
- Any temporarily removed structural BMPs

INSPECTION REPORT FORMAT

A report summarizing the scope of the inspection, name of personnel making the inspection, the date of the inspection, major observations relating to the implementation of the SWPPP, and actions taken in accordance the schedule noted above will be made and retained as part of this SWPPP for at least three years from the date that the site is finally stabilized. The reports will be signed in accordance with the TPDES General Permit. The completed Inspection Reports related to this SWPPP are found in *Section 12 Inspection Records*.

A sample of the Inspection Report Form to be used in conjunction with this SWPPP is included immediately behind this page.

Qualifications of the site inspector(s) may be found in *Section 10 Certifications and Documents*, elsewhere in this SWPPP, as well as the formal delegation of inspection responsibility by the Operator, to this individual/entity.

DEWATERING INSPECTION FORM

Date		
Name		
Title		
Time	Start:	Finish:

IS THE DISCHARGE CONTINUOUS?

YES

NO

Estimated rate of discharge (Gallons per day)

INDICATIONS OF POLLUTANT DISCHARGE:

Foam

Oil Sheen

Noticeable odor

Floating solids

Suspended sediments

Other: _____

OBSERVATIONS/LOCATIONS:

Erosion/ Discharge location:

Location of BMPs that need to be maintained:

Location of BMPs that failed to operate:

Locations where additional BMPs are needed:

NON-STORM WATER DISCHARGES

The following eligible non-storm water discharges at the site will be allowed only when such flows are diverted to site erosion and sediment control measures as detailed in *Section 4 Controls*:

- discharges from fire fighting activities (fire fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities);
- uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);
- water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;
- uncontaminated water used to control dust;
- potable water sources including waterline flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
- uncontaminated air conditioning condensate;
- uncontaminated ground water or spring water, including foundation or footing drains
- where flows are not contaminated with industrial materials such as solvents; and
- lawn watering and similar irrigation drainage.

OTHER PERMITTED DISCHARGES

Any discharge authorized under a separate NPDES, TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

SPILL PREVENTION

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

Good Housekeeping Practices

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough products required to construct the project.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer, and only when ready to be used.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The Project Superintendent will inspect daily to ensure proper use and disposal of materials onsite.

Hazardous Product Practices

These practices will be used to reduce the risks associated with hazardous materials, if hazardous materials are used.

- Products will be kept in original containers unless they are not re-sealable.
- Original labels and material safety data will be retained.
- If surplus product must be disposed of, manufacturers' or local and state recommended methods for proper disposal will be followed.

POTENTIALLY POLLUTING MATERIALS

The following potential pollutants listed below are expected to be stored onsite during construction. As they are utilized, they or the waste material generated in utilizing them, may also be stored as waste material prior to being properly disposed of:

Material/Chemical	Physical Description	Stormwater Pollutants	Location*
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic	Herbicides used for noxious weed control
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous	Newly seeded areas
Plaster	White granules or powder	Calcium sulphate, calcium carbonate, sulfuric acid	Building construction
Cleaning solvents	Colorless, blue, or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Black solid	Oil, petroleum distillates	Streets and roofing
Concrete	White solid/grey liquid	Limestone, sand, pH, chromium	Curb and gutter, building construction
Glue, adhesives	White or yellow liquid	Polymers, epoxies	Building construction
Paints	Various colored liquid	Metal oxides, stoddard solvent, talc, calcium carbonate, arsenic	Building construction
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter
Wood preservatives	Clear amber or dark brown liquid	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads and building construction
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates	Secondary containment/staging area
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Leaks or broken hoses from equipment
Sanitary toilets	Various colored liquid	Bacteria, parasites, and viruses	Staging area

* Area where material/chemical is used on site.

Product Specific Practices

The following product specific practices will be followed onsite:

■ **Petroleum Products**

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used onsite will be applied according to manufacturer's recommendations.

■ **Paints**

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm water sewer system but will be properly disposed of according to manufacturer's instructions or State and local regulations.

■ **Fertilizers**

Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to storm water. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills or suitably covered storage area.

■ **Concrete Trucks**

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash on this site, except into a specified and properly designated area designed for this purpose.

Spill Prevention Practices

In addition to the good housekeeping and material management practices discussed above, the following practices will be followed for spill prevention and cleanup:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state or local government agency regardless of size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The Project Superintendent responsible for day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup.

RELEASES IN EXCESS OF REPORTABLE QUANTITIES

The discharge of hazardous substances or oil in the storm water discharges will be prevented or minimized as provided below. The General Contractor will comply with the reporting requirements under the Construction General Permit. Spills or releases will be reported immediately to the Texas Commission on Environmental Quality 800.832.8224. The SWPPP will be modified within 14 days to provide description of release, circumstances leading to release and the date of the release.

SPILL RESPONSE PLAN

Leak or Spill

- Employees will not be punished for reporting spills.
- Contain spill and start cleanup
- Report if over reportable quantity.

Point of Contact in Case of Reportable Quantity Release

Texas Commission on Environmental Quality

800.832.8224

Reportable Quantities

Material	Material Released To	Reportable Quantity
Engine oil, fuel, hydraulic & brake fluid	Land	~25 gallons
Engine oil, fuel, hydraulic & brake fluid	Water	Visible Sheen
Anti-freeze	Land	100 lbs (~13 Gallons)
Battery Acid	Land, Water	100 lbs (~6 Gallons)
Freon	Air	1 lb
Gasoline	Air, Land, Water	100 lbs (~15 Gallons)
Engine Degreasers	Air, Land, Water	100 lbs (~14 Gallons)

Information To Report

When making a telephone report of a spill or pollution complaint, it will be helpful if the following information is available:

- The date and time of the spill or release;
- The identity or chemical name of material released or spill as well as whether the substance is an extremely hazardous material;
- An estimate of the quantity of material released or spilled and the time or duration of the event;
- The exact location of the spill, including the name of the waters involved or threatened, and/or other medium or media affected by the release or spill;
- The source of the release or spill;
- The name, address, and telephone number of the party in charge of, or responsible for the facility, vessel, or activity associated with the release or spill;
- The extent of actual and potential water pollution;
- The party at the release or spill site, who is in charge of operations at the site and the telephone number of this party;
- The steps being taken or proposed to contain and clean up the released or spilled material and any precautions taken to minimize impacts including evacuation;
- The extent of injuries, if any;
- Any known or anticipated health risks associated with the incident and, where appropriate, advice regarding medical attention necessary for exposed individuals;
- Possible hazards to the environment (air, soil, water, wildlife, etc.). This assessment may include references to accepted chemical databases, material safety data sheets, and health advisories. Estimated or measured concentrations of a contaminant may be requested by the TCEQ for the state's hazard assessment; and,
- Identity of governmental and/or private sector representatives responding on-scene.

POTENTIALLY POLLUTING ACTIVITIES

The activities in the following chart have been identified as potentially polluting. The Best Management Practices described in this section, and those described in *Section 4 Controls* are to be implemented to protect the water quality of any discharge from this site, or escape to any adjacent waterway.

Areas of Consideration	Primary Pollutant	Other Pollutants							
	Sediment	Nutrients	Heavy metals	pH (acids & bases)	Pesticides & herbicides	Oil & grease	Bacteria & viruses	Trash, debris, solids	Other toxic chemicals
Clearing, grading, excavating, and unstabilized areas	✓							✓	
Paving operations	✓							✓	
Concrete washout and waste			✓	✓				✓	
Structure construction/ painting/cleaning		✓		✓				✓	✓
Demolition and debris disposal	✓							✓	
Dewatering operations	✓	✓							
Drilling and blasting operations	✓			✓				✓	
Material delivery and storage	✓	✓	✓	✓	✓	✓		✓	✓
Material use during building process		✓	✓	✓	✓	✓		✓	✓
Solid waste (trash and debris)								✓	✓
Hazardous waste			✓	✓	✓	✓			✓
Contaminated spills		✓	✓	✓	✓	✓			✓
Sanitary/septic waste		✓		✓			✓		✓
Vehicle/equipment fueling and maintenance						✓			✓
Vehicle/equipment use and storage						✓			✓
Landscaping operations	✓	✓						✓	

BEST MANAGEMENT PRACTICE SPECIFICATIONS

Although not required under the General Permit, details for suggested Best Management Practices are found in this section. They may differ from those found in the construction drawings, and in that case these should be considered recommended alternatives. It is the Operator's responsibility to select the most effective control for specific site conditions.

Items Specified for Erosion Control

- Surface Control
 - Flexterra
 - Mulching
 - Mulch Berm

Items Specified for Runoff Control

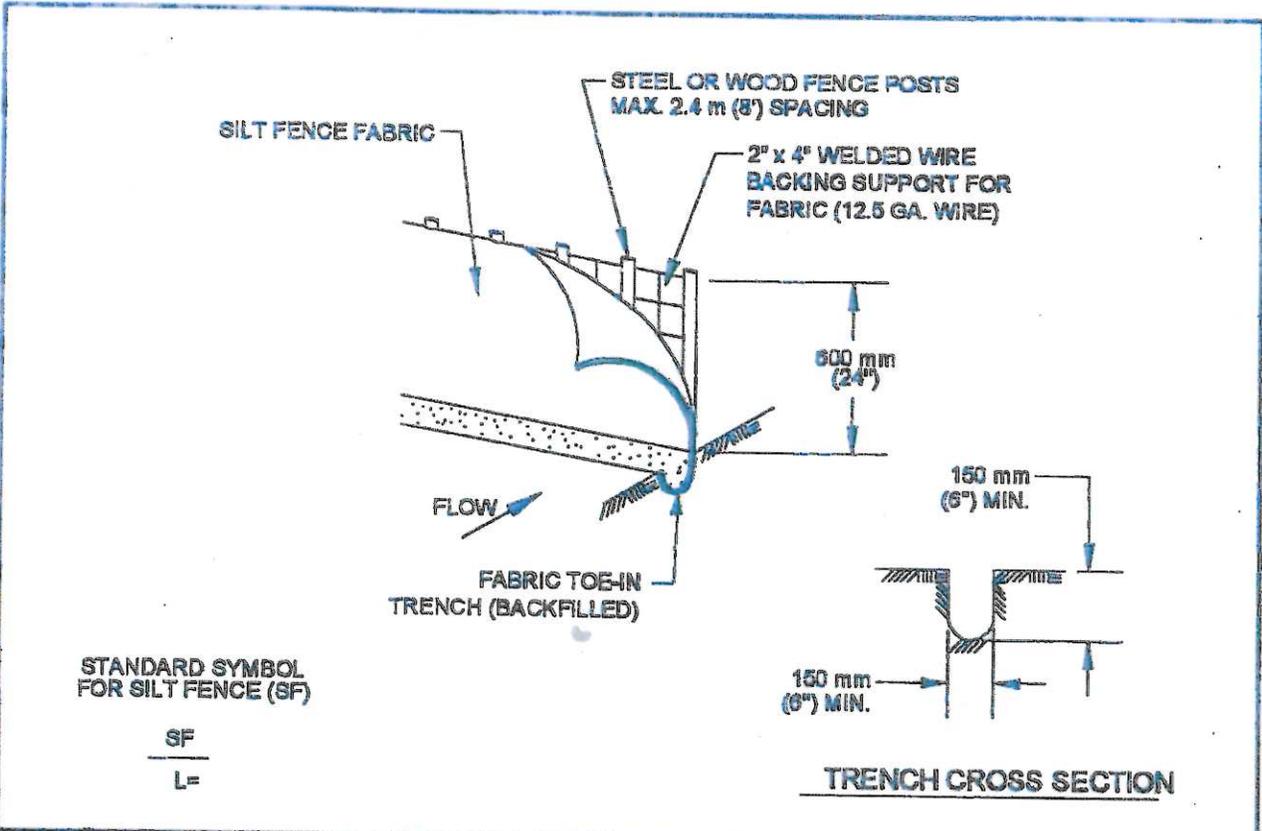
- Check Dams and Other Flow Control Barriers
 - Mulch Socks
 - Straw Wattles
 - Rock Berms
 - Erosion Eels
- Dewatering Devices
 - Dirtbag
 - Site constructed dewatering system

Items Specified for Sediment Control

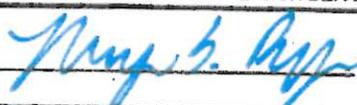
- Filter Fabric Fence
 - Slice-inserted Silt fence
 - Reinforced Silt Fence (trenched) – City of Austin
- Inlet Protection Barrier
 - Siltsack IPB
 - GutterGator IPB
 - GeoCurve Inlet Filter
- Stabilized Construction Exit

Items Specified for Good Housekeeping/Materials Management

- Concrete Washout
 - Concrete Wash Out Berm
 - Lined Concrete Wash Out Pit
 - Portable Concrete Wash Out Container
- Spill Response



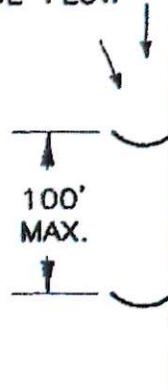
1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 INCHES) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 INCHES) DEEP AND 150 mm (6 INCHES) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 INCHES). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
 9/1/2011 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

PLAN VIEW

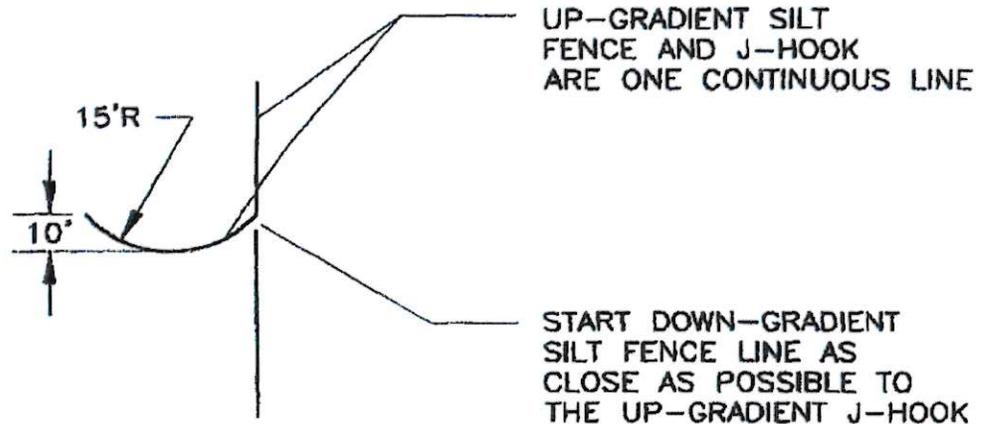
I. SPACING REQUIREMENTS

DIRECTION OF SURFACE FLOW

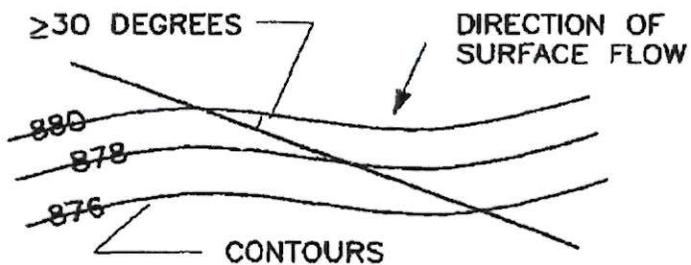


NOTE: SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET.

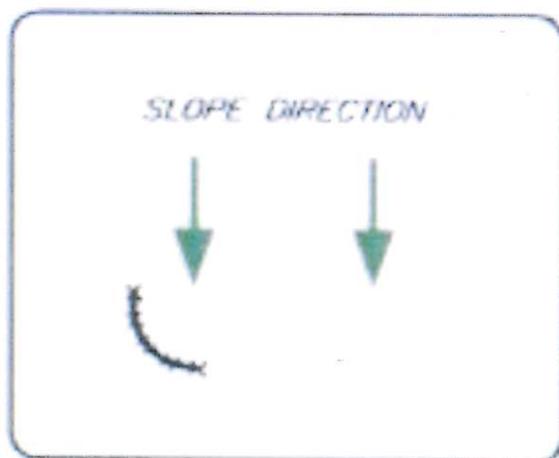
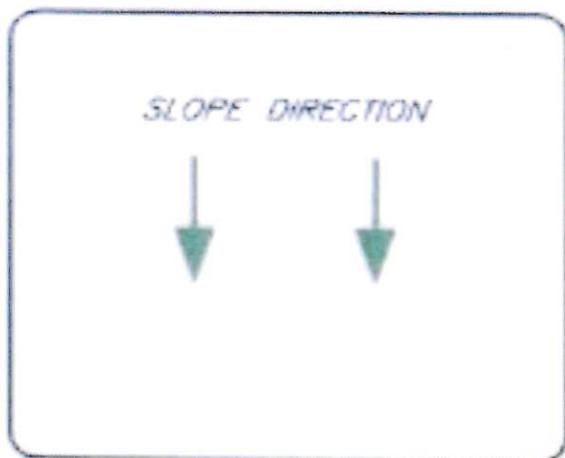
II. SIZING REQUIREMENTS:



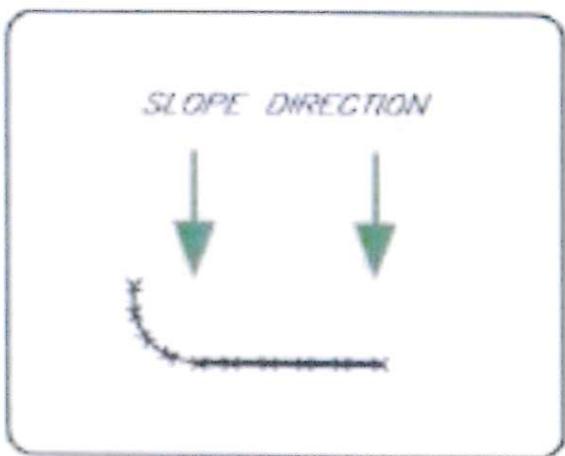
FOR CATCHMENT AREA < 0.25 ACRES



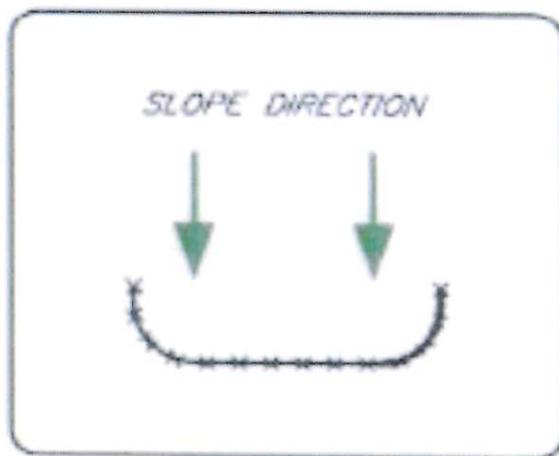
NOTE: J-HOOKS SHALL ALSO BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.



STEP 1 - CONSTRUCT LEG



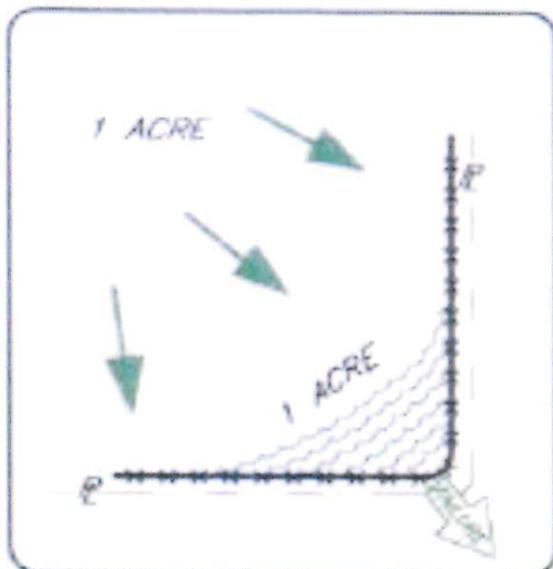
STEP 2 - CONSTRUCT DAM



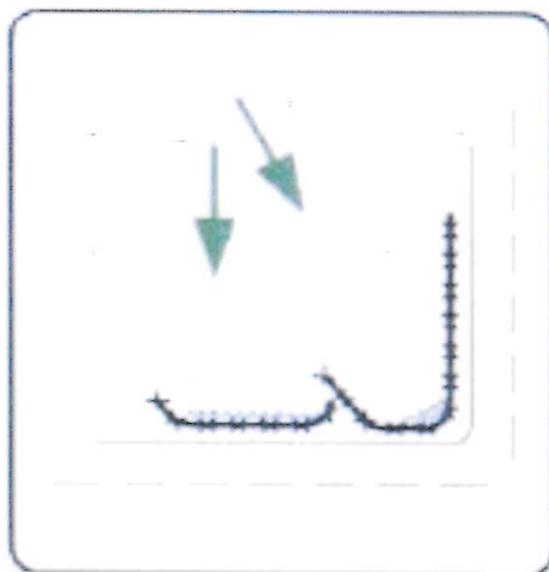
STEP 3 - CONSTRUCT LEG 2

INSTALLATION WITH J-HOOKS OR 'SMILES' INCREASE SILT FENCE EFFICIENCY.

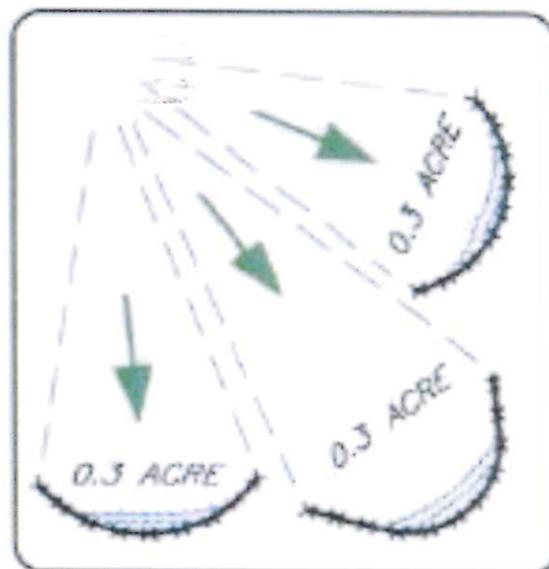
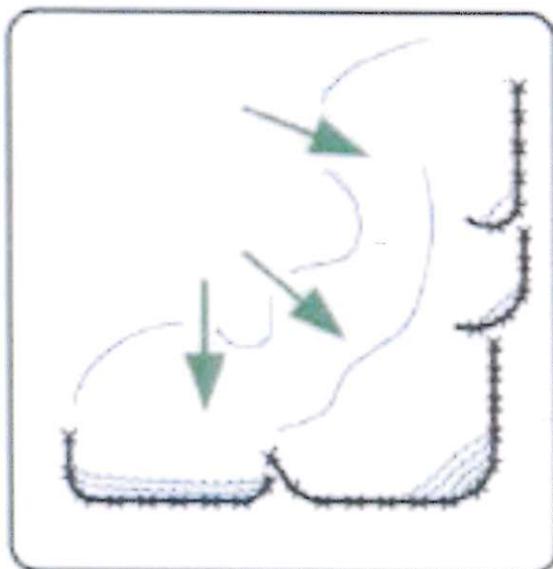
SILT FENCE
TYPICAL PLACEMENT-ONE SLOPE



Incorrect - Do Not layout "perimeter control" silt fences along property lines. All sediment laden runoff will concentrate and overwhelm the system.



Correct - Install J-hooks



Discreet segments of silt fence, installed with J-hooks or "smiles" will be much more effective.

SILT FENCE PLACEMENT FOR PERIMETER CONTROL

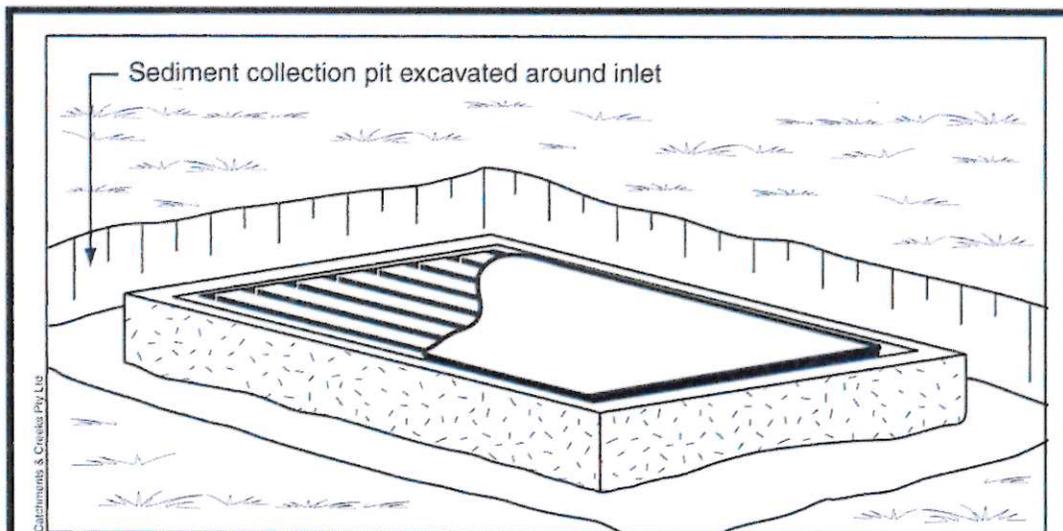


Figure 1 – Fabric wrap drop inlet protection (fabric shown partially exposed for visual display purposes only)

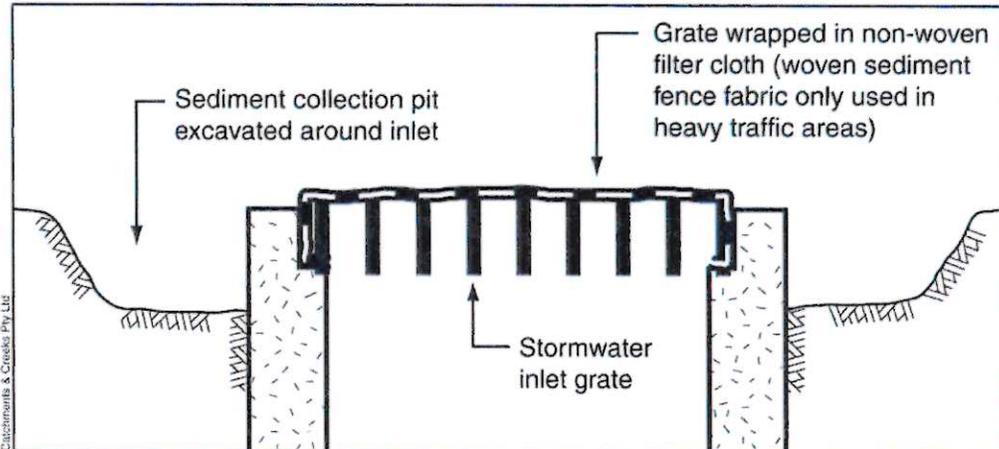


Figure 2 – Fabric wrap drop inlet protection with optional sediment collection trench

Description

Fabric wrap drop inlet protection systems consist of filter fabric wrapped around the stormwater inlet grate. It is essential for the inlet grate to be completely covered with fabric and that all other flow entry points are also fully protected with filter cloth.

Purpose

Used to limit sediment movement into an underground drainage network.

Most commonly used on small residential building sites.

Consideration should be given to the use of a gully bag insert before adopting this technique.

Limitations

Primarily used to collect the coarser sediment particles. This technique provides limited collection of clay-sized particles, as such there is usually no measurable change in the turbidity of water passing through the fabric.

Should only be used in small sub-catchments, otherwise consider using a Fabric, Block & Aggregate, or Mesh & Aggregate drop inlet protection system.

In most circumstances these traps should be supplementary to a more substantial downstream sediment trap.

Catchment area limited to around 0.1ha.



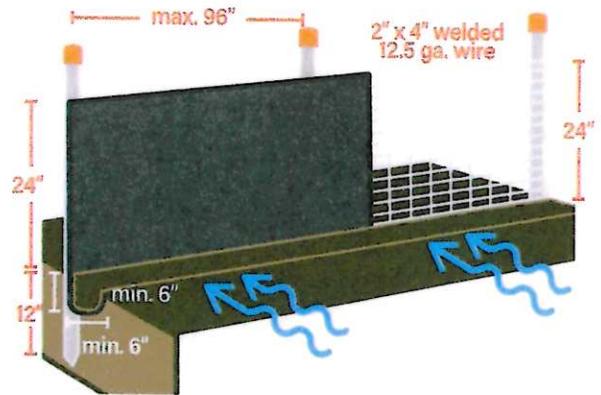
TREE PROTECTION AND EROSION/SEDIMENT CONTROLS

CONTROLS: ENVIRONMENTAL PROTECTION

Install Erosion and Sedimentation Controls (ESC) before any work takes place on your work site.

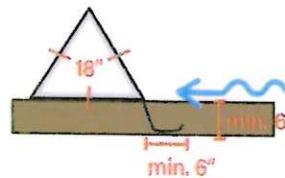
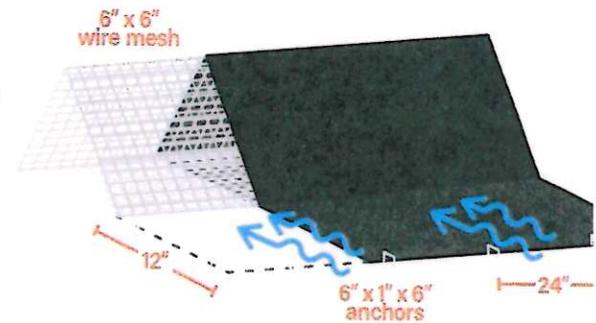
Silt Fence: A non-woven fabric filter material supported by welded wire fabric (WWF, 2"x 4", 12.5 gauge wire) anchored by 4 ft. (48") steel or wood posts.

- Silt fence must be at least 24" high with fabric facing towards the anticipated flow
- Posts must be embedded at least 12" in the ground and no more than 8 ft. (96") apart
- Bottom 12" flap of filter fabric should be trenched 6" in the ground
- When installed on impervious cover, the bottom flap should be extended upstream
- Vertical joints should overlap at least 12"
- The end of the silt fence should turn back in a 'hook'
- Long sections of silt fence should incorporate J-hooks as needed to capture sediment uphill, especially on slopes

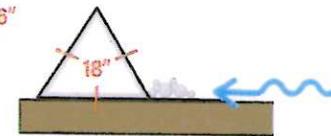


Triangular Sediment Filter Dike: Typically easier and faster to install than other ESCs, a Triangular Filter Dike (or Tri-Dike) is prefabricated from 6x6-D2.9xD2.9 welded wire mesh and 4.5 oz. non-woven polyester filter fabric fastened to welded wire mesh. It has a 12" skirt that is a continuous extension of the filter fabric on the upstream face.

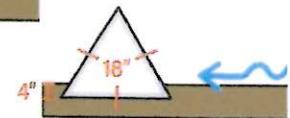
- Dikes are placed in a row with ends tightly abutting the adjacent dike
- Each filter dike and skirt are anchored in place using 6" staples, 24" apart maximum
- The skirt may be trenched in:
 - with 6" minimum (see Fabric Toe-In illustration)
 - weighted down with a continuous layer of 3-5" open graded rock or with sand/gravel bags placed 18" on center (see Open Graded Rock illustration)
 - the entire structure can also be trenched in 4" (see Trenched in 4" illustration)



Fabric Toe-In



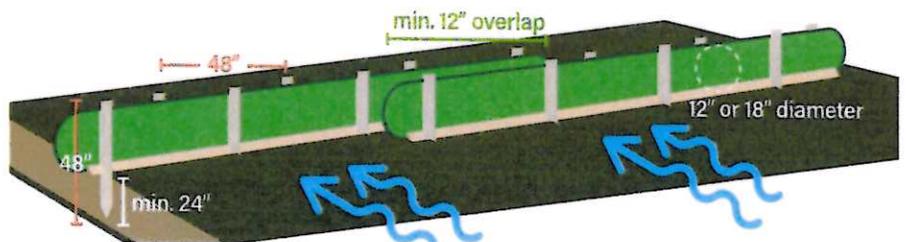
Open Graded Rock



Trenched In 4"

Mulch Socks: A mulch sock consists of material encased in a 12" or 18" diameter tube of mesh and provides an environmentally-sensitive alternative to silt fencing.

- Mulch material may consist of shredded bark, stump grindings and/or composted bark and should be produced from a 3" minus screening process. Do NOT use HAY/STRAW!
- Ends of adjacent socks should overlap a minimum of 12"
- Install using steel or wood posts (48" minimum) placed on 4 ft. (48") centers driven at least 24" into the ground on alternating sides of the sock
- Mulch socks should not be used on slopes greater than 2:1 or in concentrated flow area





TREE PROTECTION AND EROSION/SEDIMENT CONTROLS

CONTROLS: TREE PROTECTION

Protecting a tree's Critical Root Zone (CRZ) is crucial for tree survival during construction or demolition. All trees measuring 19" or greater in diameter (60" in circumference) are classified as protected and require a permit before construction or demolition. These CRZ protections also apply to any trees extending onto a property from neighboring properties.

Tree Measuring Tips

Measure the trunk at 4.5 ft. above the ground to find the tree's diameter.

- **Misshapen or Swollen Trunk:** if the bend or swell is on the trunk at 4.5 ft. from the ground, measure just below the distortion
- **Multi-Trunk:** add the total diameter of the largest trunk to half the diameter of each additional trunk

CRZ Calculating Guidelines

Each inch of the tree's diameter = 1-foot radius of the full CRZ.

- Example: 20" diameter = 20 ft. radius, place fencing 20 ft. from all points of the tree

Full CRZ Protection

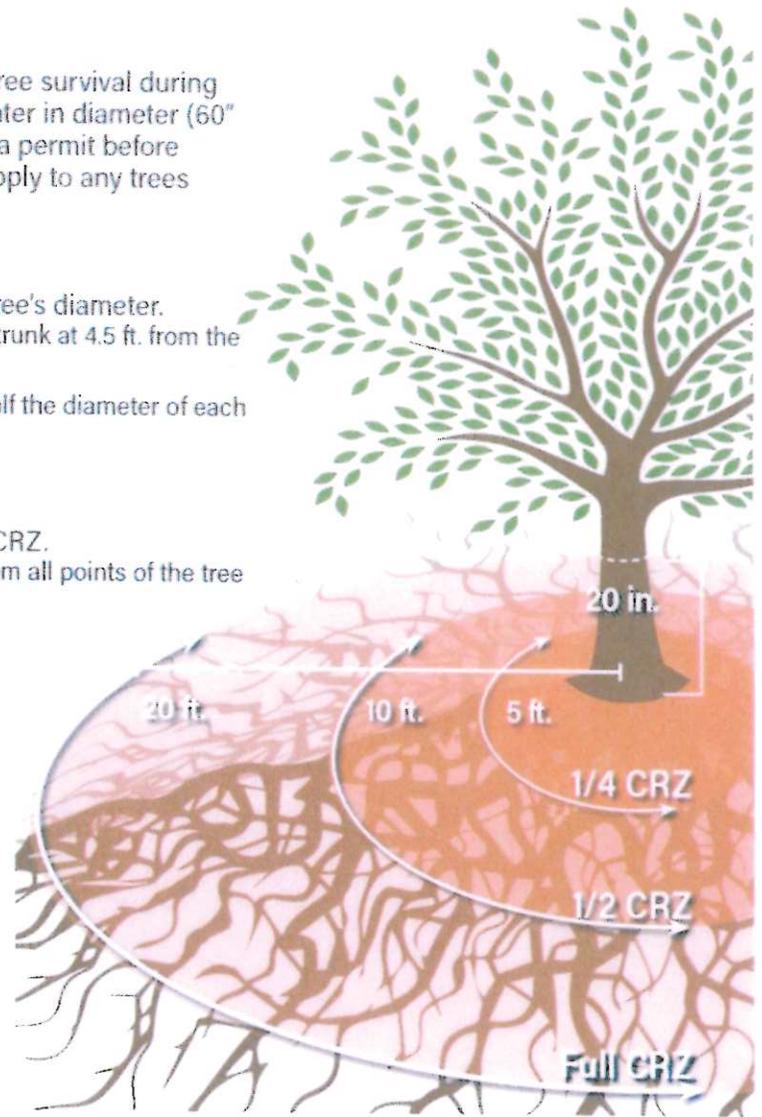
- Apply 8" of hardwood mulch within the entire Full CRZ
- Place 5 ft. tall chain-link fencing around the entire Full CRZ

1/2 CRZ Protection

- Apply 8" of hardwood mulch within the entire Full CRZ
- Fence as much of the Full CRZ as possible
- If fencing cannot be put around the Full CRZ, fencing can be pulled back but cannot cross into the 1/2 CRZ

1/4 CRZ Protection

- Apply 8" of hardwood mulch within the entire Full CRZ
- NO IMPACTS are allowed in the 1/4 CRZ
- Vertically strap 2"x4"x6' or greater size lumber around the tree itself in areas where fencing is not an option
- Confirm with your inspector before installing protective planks in lieu of fencing



NOTES: If the site requires an access route crossing the CRZ of a protected tree, contact your Tree Inspector to discuss alternative root protection measures.

Chemical toilet, concrete washout, dumpster, equipment placement, material staging, erosion and sediment controls are NOT allowed within the 1/2 CRZ of a Protected tree.

SILTSACK

SEDIMENT CAPTURE DEVICE

INLET PROTECTION



Are you looking for a cost-effective, easy way to stop silt and sediment from entering catch basins on construction site? Siltsack is the simple and economical solution to prevent clogging of catch basins.

Siltsack is a sediment control device used to prevent silt and sediment from entering your drainage system by catching the silt and sediment while allowing water to pass through freely. Siltsack can be used as a primary or secondary sediment control device to prevent failure of your drainage system due to clogging. It must be maintained on a regular basis to function properly.

Siltsack is available in both high-flow or regular flow. A modified Siltsack is also available with a curb opening deflector attached to prevent sediment and debris from entering through curb openings. Siltsack is a quality product designed to save time and money.

Routine inspection of a Siltsack's collected sediment level is important to prevent "ponding" around storm drains. We recommend the following maintenance schedule:

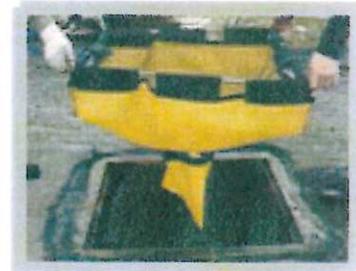
- Each Siltsack should be inspected after every major rain event.
- If there have been no major events, Siltsack should be inspected every 2-3 weeks.
- The yellow restraint cord should be visible at all times. If the cord is covered with sediment, the Siltsack should be emptied.

ADVANTAGES:

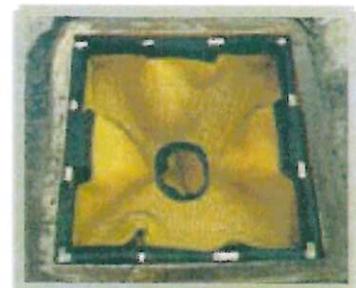
- Made to fit any size inlet
- Easy to Install and economical
- US Patented
- Undergrate design so it is not easily disturbed
- Type B, Type C Adjustable Frame, and Floc Model available



Type A - Installed.



Type C - Adjustable hanging frame.



Adjustable frame installed.
Adjusts from 16x24 to 24x36.

INSTALLATION

LET'S GET IT DONE

SPECIFICATIONS:

Siltsack Regular Flow

PROPERTY	TEST METHOD	MINIMUM AVERAGE ROLL VALUE
Grab Tensile Strength	ASTM D4632	315 lbs
Grab Tensile Elongation	ASTM D4632	15%
Puncture Strength	ASTM D4833	140 lbs
Mullen Burst	ASTM D3786	800 psi
Trapezoid Tear	ASTM D4533	125 x 115 lbs
UV Resistance @ 500 hrs	ASTMD4355	80%
AOS	ASTM D4751	40 Sieve
Permittivity (sec-1)	ASTM D4491	0.70 (sec-1)
Flow Rate	ASTM D4491	50 gpm/ft2

Siltsack High Flow

PROPERTY	TEST METHOD	MINIMUM AVERAGE ROLL VALUE
Grab Tensile Strength	ASTM D4632	255x275 lbs
Grab Tensile Elongation	ASTM D4632	20x15%
Puncture Strength	ASTM D4833	135 lbs
Mullen Burst	ASTM D3786	420 psi
Trapezoid Tear	ASTM D4533	40x50 lbs
UV Resistance	ASTMD4355	90%
AOS	ASTM D4751	20 Sieve
Permittivity (sec-1)	ASTM D4491	1.50 (sec-1)
Flow Rate	ASTM D4491	200 gpm/ft2

All properties are Minimum Average Roll Values (MARV)

SIMILAR PRODUCTS IN THIS FAMILY:

PRODUCT



PRODUCT

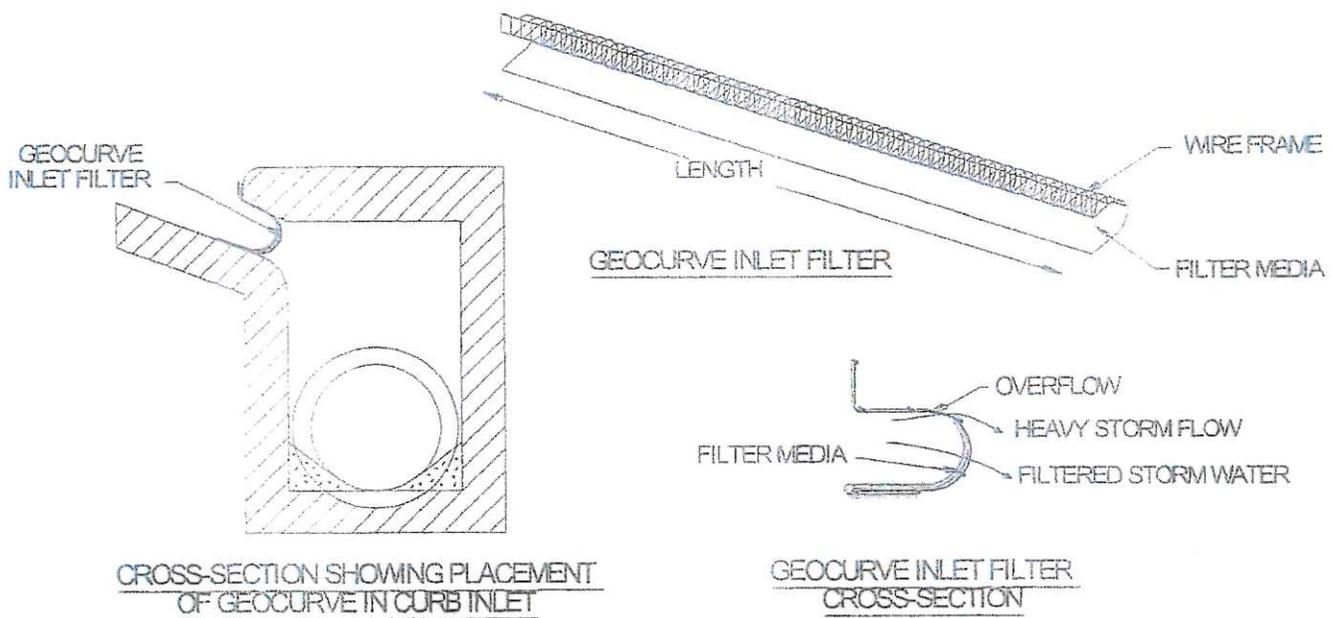


PRODUCT



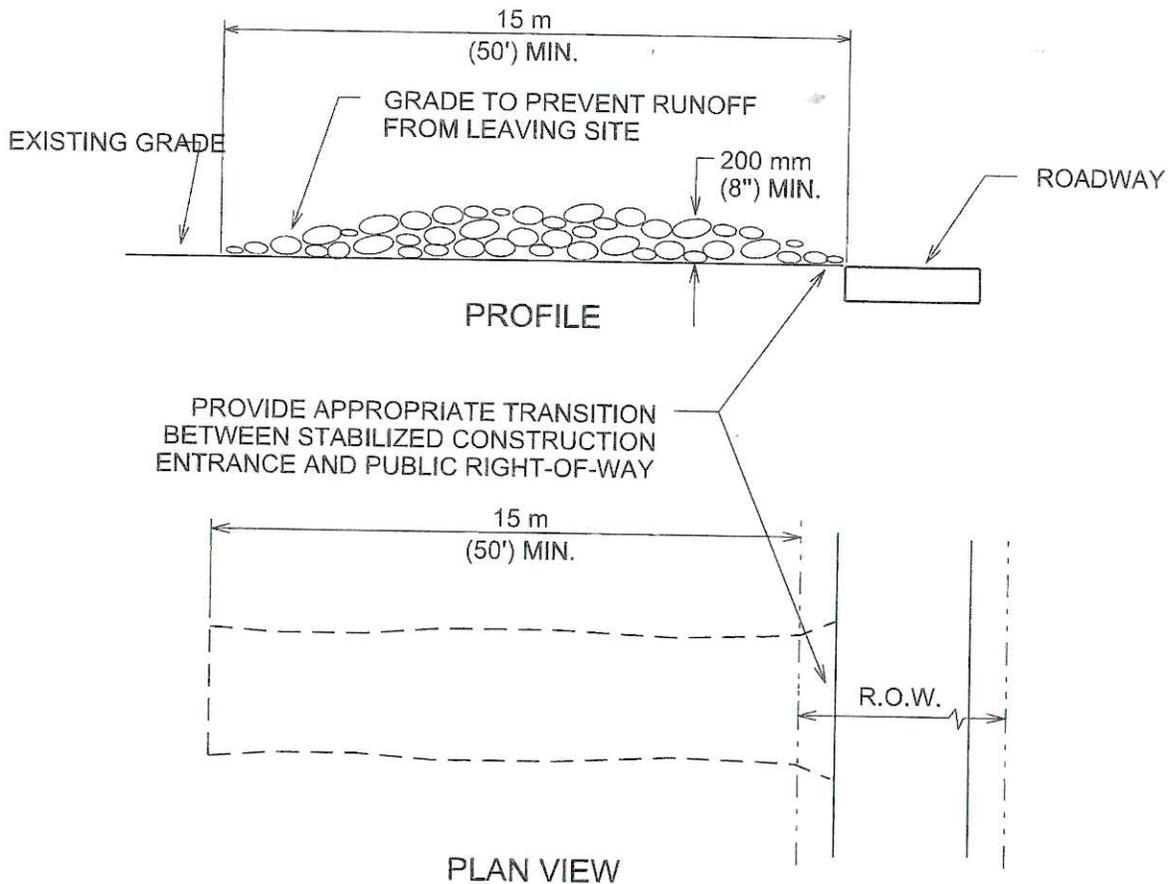
Product Data Sheet
GeoCurve Inlet Filter

The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 12 gauge welded wire frame (2" x 4" openings) with an upper retention flange. The device effectively filters stormwater, can easily be removed for maintenance and cleaning and incorporates an overflow window for heavy storm events.



FILTER MEDIA PROPERTIES: Mono-filament Woven Filter Fabric

PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	----
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
UV Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf



NOTES:

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

CITY OF AUSTIN

WATERSHED PROTECTION DEPARTMENT

STABILIZED CONSTRUCTION ENTRANCE

RECORD COPY SIGNED
BY J. PATRICK MURPHY

5/23/00

ADOPTED

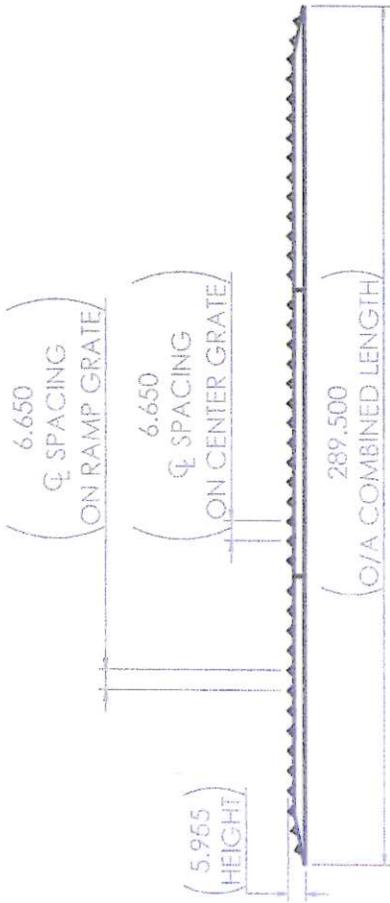
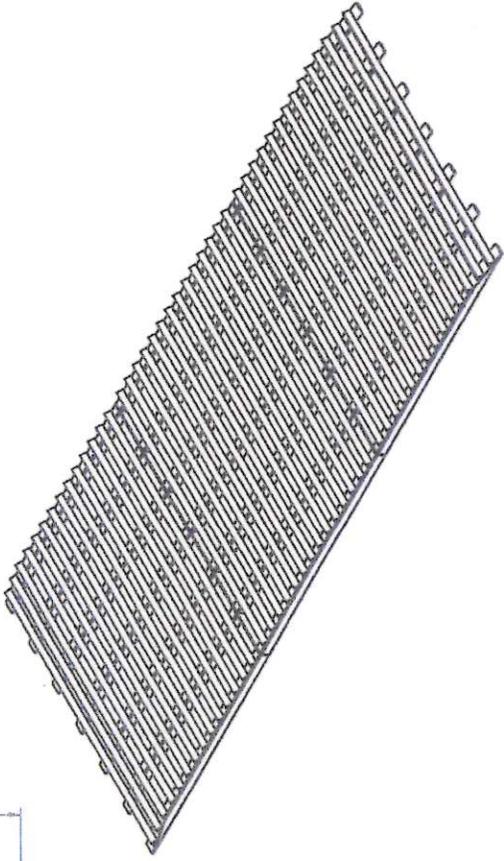
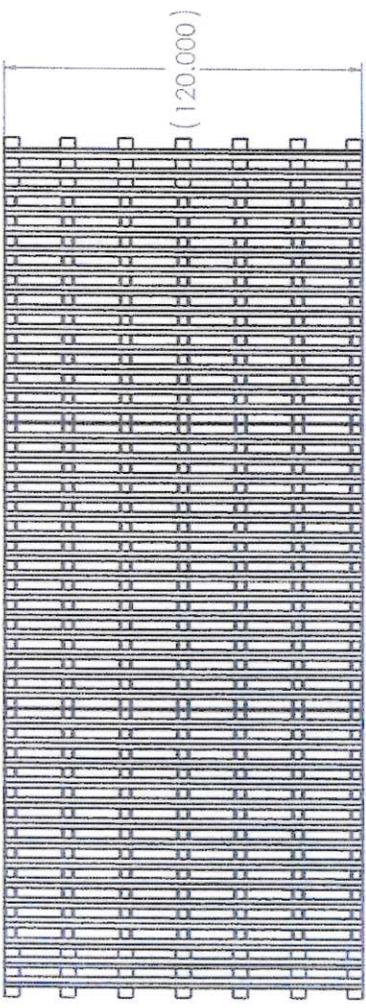
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR APPROPRIATE USE
OF THIS STANDARD.

STANDARD NO.

641S-1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RUMBLE RAMP	4" X 4" X 3/8" SQUARE TUBE 96" CUT LENGTH	14
2	RUMBLE ANGLE	2.5" X 2.5" X .375" ANGLE - 120" LENGTH	42
3	RUMBLE BORDER	4" X 120" X .375 FLAT STOCK 120" LENGTH	4
4	RUMBLE RAMP PLATE	RUMBLE GRAT COVER UP PLATE	14
5	RUMBLE TUBE CENTER	4" X 4" X .375" SQ TUBING 96" LENGTH	7

NOTES:
 USE ONLY 1/4 OR 3/8" THICK MAT'L
 1 68' OF 4" SQUARE TUBING NEEDED PER COMPLETE STRIP
 420' OF 2.5" X .375 ANGLE IRON NEEDED PER COMPLETE STRIP
 40' OF 4" X .375" FLAT STOCK NEEDED PER COMPLETE STRIP
 2X LASER CUT RAMP PLATES NEEDED PER COMPLETE STRIP



THIS PRINT IS USED FOR GOLDEN BEAR SERVICE PURPOSES ONLY

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL: ± 1/32"
 ANGULAR: BEND ± 1/2°
 TWO PLACE DECIMAL ± .020"
 THREE PLACE DECIMAL ± .010"

NAME: S. KEPLER
 DATE: 5-29-2015
 DRAWN: GOLDEN BEAR SERVICE
 CHECKED: 562-310-3017
 ENG APPR: 8240 CABALLO WAY
 MFG APPR: FLAGSTAFF, AZ 86004

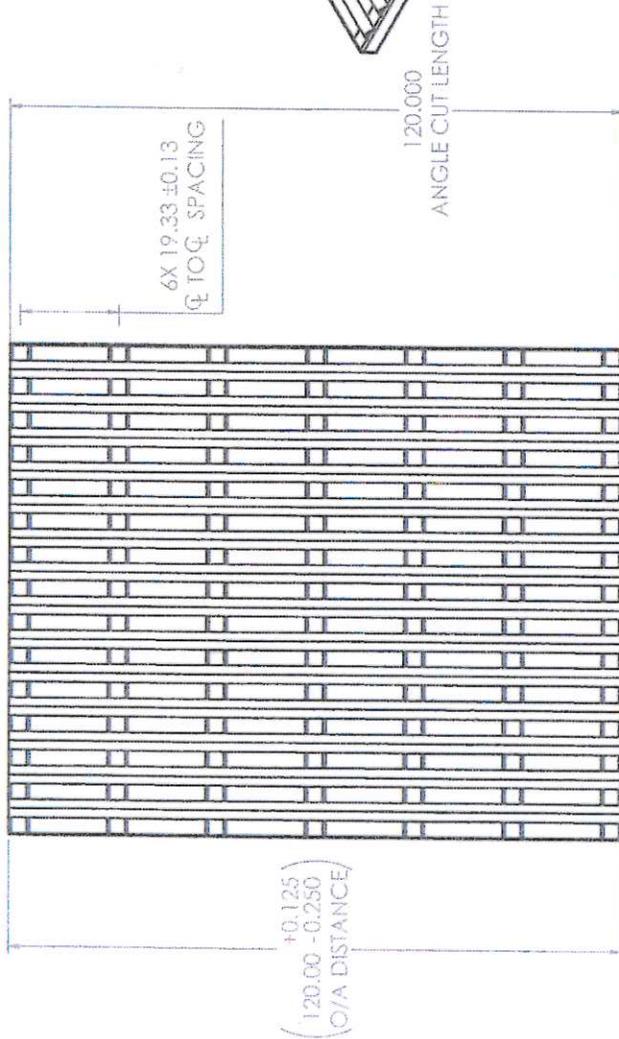
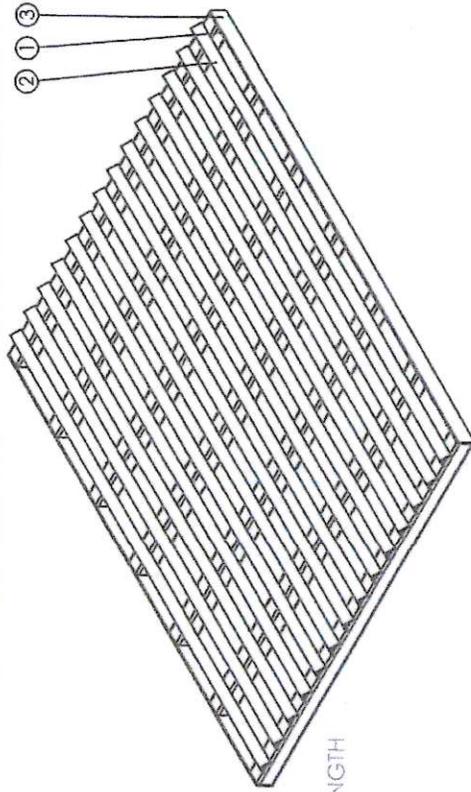
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SIZE DWG. NO. A
 RUMBLE STRIP
 REV
 SCALE: 1:60
 SHEET 1 OF 1

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 COMMENTS:
 MATERIAL: WEIGHT: 5577.88
 FINISH: USED ON
 NEXT ASSY: APPLICATION: DO NOT SCALE DRAWING

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GOLDEN BEAR SERVICES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF GOLDEN BEAR SERVICES IS PROHIBITED.

NO.	PART NUMBER	DESCRIPTION	QTY.
1	RUMBLE TUBE CENTER	4" X 4" X .375" SQ TUBING 96" LENGTH	7
2	RUMBLE ANGLE	2.5" X 2.5" X .375" ANGLE - 119" LENGTH	14
3	RUMBLE BORDER	4" X 120" X .375 FLAT STOCK 120" LENGTH	2



NOTES:
 USE ONLY 3/8" THICK MAT'L
 56' OF 4" SQUARE TUBING NEEDED PER CENTER
 140' OF 2.5" X .375 ANGLE IRON NEEDED PER CENTER
 20' OF 4" X .375" FLAT STOCK NEEDED PER CENTER

THIS PRINT IS USED FOR GOLDEN BEAR SERVICE PURPOSES ONLY

NAME DATE GOLDEN BEAR SERVICE
 S. KEPLER 5-29-2015 562-310-3017
 8260 CABALLO WAY
 FLAGSTAFF, AZ 86004

TITLE: RUMBLE GRAT-CENTER

SIZE DWG. NO. REV
 A RUMBLE CENTER

SCALE: 1:35 SHEET 1 OF 1

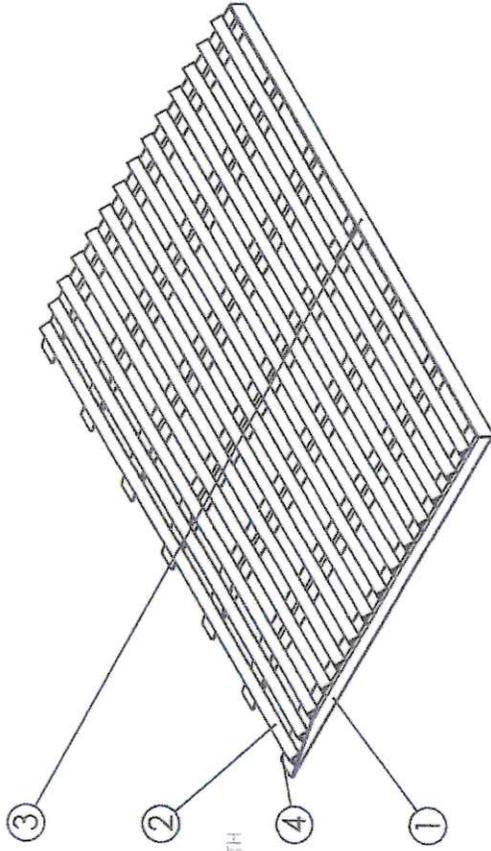
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 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ± 1/32"
 ANGULAR: BEND ± 1/2°
 TWO PLACE DECIMAL ± .020"
 THREE PLACE DECIMAL ± .010"
 DRAWN CHECKED
 ENG APPR. MFG APPR.

INTERPRET GEOMETRIC TOLERANCING PER:
 MATERIAL
 FINISH RAW
 COMMENTS:
 G.A.

WEIGHT: 1922.72
 USED ON
 APPLICATION

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RUMBLE RAMP	4" X 4" X 3/8" SQUARE TUBE 96" CUT LENGTH	7
2	RUMBLE ANGLE	2.5" X 2.5" X .375" ANGLE - 119" LENGTH	14
3	RUMBLE BORDER	4" X 120" X .375" FLAT STOCK 120" LENGTH	1
4	RUMBLE RAMP PLATE	RUMBLE GRAT COVER UP PLATE	7



NOTES:
 USE ONLY 3/8" THICK MAT'L
 56' OF 4" SQUARE TUBING NEEDED PER CENTER
 140' OF 2.5" X .375 ANGLE IRON NEEDED PER CENTER
 10' OF 4" X .375" FLAT STOCK NEEDED PER CENTER
 LASER CUT (7) 1/4" RAMP PLATE

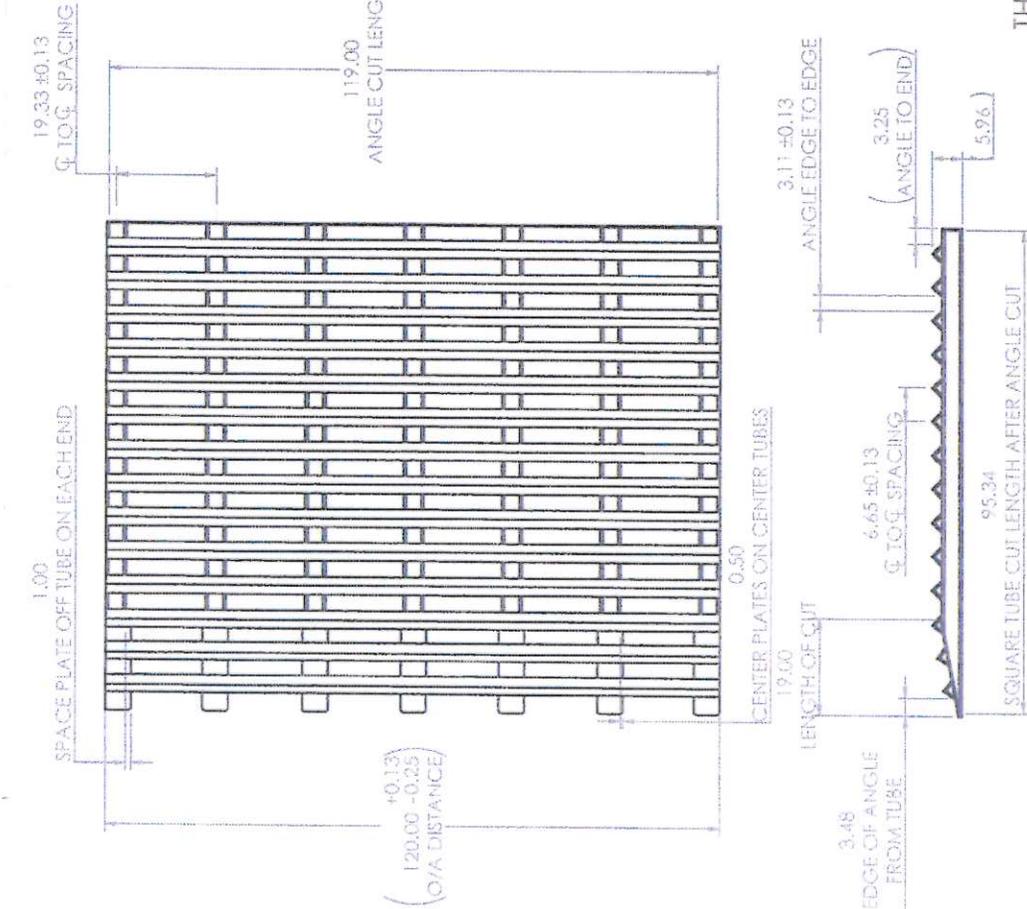
THIS PRINT IS USED FOR GOLDEN BEAR SERVICE PURPOSES ONLY

NAME DATE GOLDEN BEAR SERVICE
 S. KEPLER 5-29-2015 562-310-3017
 8260 CABALLO WAY
 FLAGSTAFF, AZ 86004

TITLE: RUMBLE GRAT - RAMP

SIZE DWG. NO. REV
 A RUMBLE RAMP

SCALE: 1:35 SHEET 1 OF 1

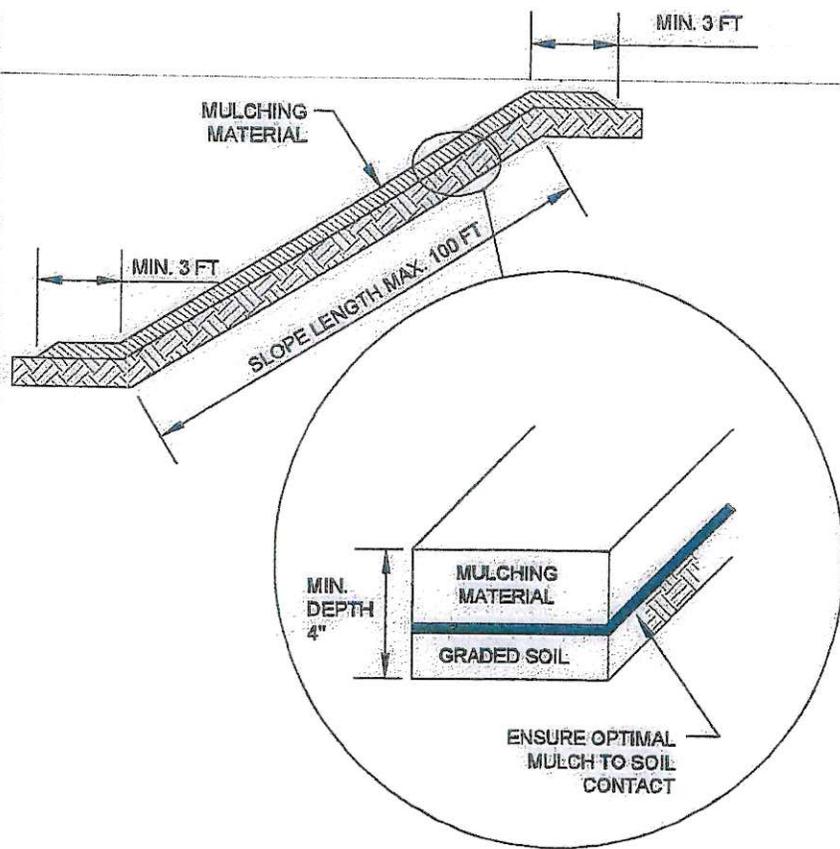


UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ± 1/32"
 ANGULAR: BEND ± 1/2°
 TWO PLACE DECIMAL ± .020"
 THREE PLACE DECIMAL ± .010"
 DRAWN CHECKED
 ENG APPR. MFG APPR.

INTERPRET GEOMETRIC TOLERANCING PER: Q.A.
 MATERIAL FINISH RAW
 COMMENTS: DO NOT SCALE DRAWING

WEIGHT: 1827.59
 USED ON
 APPLICATION

PROPRIETARY AND CONFIDENTIAL
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MULCHING MATERIAL

USE UNTREATED WOOD CHIPS PRODUCED FROM A 3 (THREE) INCH MINUS SCREENING PROCESS (EQUIVALENT TO TXDOT ITEM 161, COMPOST, SECTION 1.6.2.B, WOOD CHIP REQUIREMENTS).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. MULCHING ON SLOPES OF 3:1 OR FLATTER USE A MINIMUM DEPTH OF FOUR (4) INCHES.
2. MULCHING IS PERFORMED AFTER GRADING AND SOIL SURFACE PREPARATION IS COMPLETED. THE EFFECTIVENESS OF THE MULCHING MATERIAL DEPENDS ON GOOD CONTACT BETWEEN THE SOIL AND MULCHING MATERIAL. PROVIDE A SMOOTH MULCHING APPLICATION SURFACE BY TRACKING, ROLLING, RAKING, ETC. TO ENSURE OPTIMAL MULCH TO SOIL CONTACT.
3. APPLY MULCHING MATERIAL A MINIMUM OF THREE (3) FEET OVER THE SHOULDER AND BEYOND THE BASE OF THE SLOPE OR INTO EXISTING VEGETATION WHERE POSSIBLE TO PREVENT RILL FORMATION AND TRANSPORT OF THE MATERIAL. THE MULCHING MATERIAL SHALL BE PLACED EVENLY AND UNIFORMLY TO PROVIDE 100% COVERAGE.
4. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
5. THE MULCHED AREA SHALL BE INSPECTED REGULARLY AND AFTER EACH LARGE RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY, WITH ADDITIONAL MULCHING MATERIAL PLACED ON TOP OF THE MULCH TO REACH THE RECOMMENDED THICKNESS.
6. WHEN THE MULCH IS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED OR INEFFECTIVE, IT MUST BE REPLACED OR REPAIRED.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

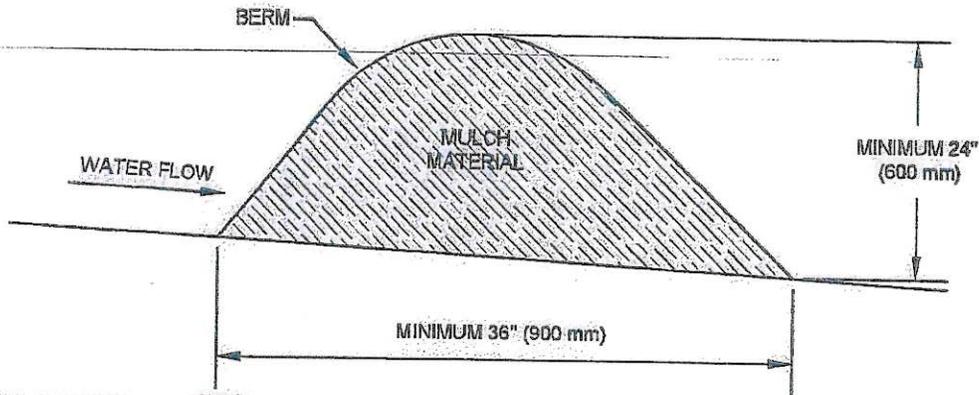
MULCHING

Map. S. Rep. P.E.

08/24/2010
ADOPTED

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR APPROPRIATE USE
OF THIS STANDARD.

STANDARD NO.
645S-1



MULCH BERM MATERIAL

USE UNTREATED WOOD CHIPS LESS THAN OR EQUAL TO 125mm (5 inches) IN LENGTH WITH 95% PASSING A 2-INCH SCREEN AND LESS THAN 30% PASSING A 1-INCH SCREEN (TXDOT SPECIAL SPECIFICATION 1011, MULCH FILTER BERM).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. MULCH BERMS SHOULD BE A MINIMUM OF 600mm (24 inches) HIGH AND 900mm (36 inches) WIDE.
2. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
3. MULCH BERMS SHOULD BE INSTALLED PARALLEL TO THE SLOPE OR THE OTHER AFFECTED AREA. FOR BEST SEDIMENTATION DEPOSITION, A MULCH BERM SHOULD BE PLACED ON THE LEVEL CONTOUR OF A SLOPE SO THAT FLOWS ARE DISSIPATED INTO UNIFORM SHEET FLOW WHICH HAS LITTLE ENERGY FOR TRANSPORTING SEDIMENT.
4. WHEN A DIVERSION OR PERIMETER CONTROL MULCH BERM IS INSTALLED IN THE DIRECTION OF A SLOPE, A 20-FOOT LENGTH OF BERM SHOULD BE TURNED IN, ACROSS THE SLOPE, AT REGULAR INTERVALS TO CREATE A "J"-HOOK (SEE EGM 1.4.5.G, SILT FENCE "J" HOOK DETAIL).
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.J.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

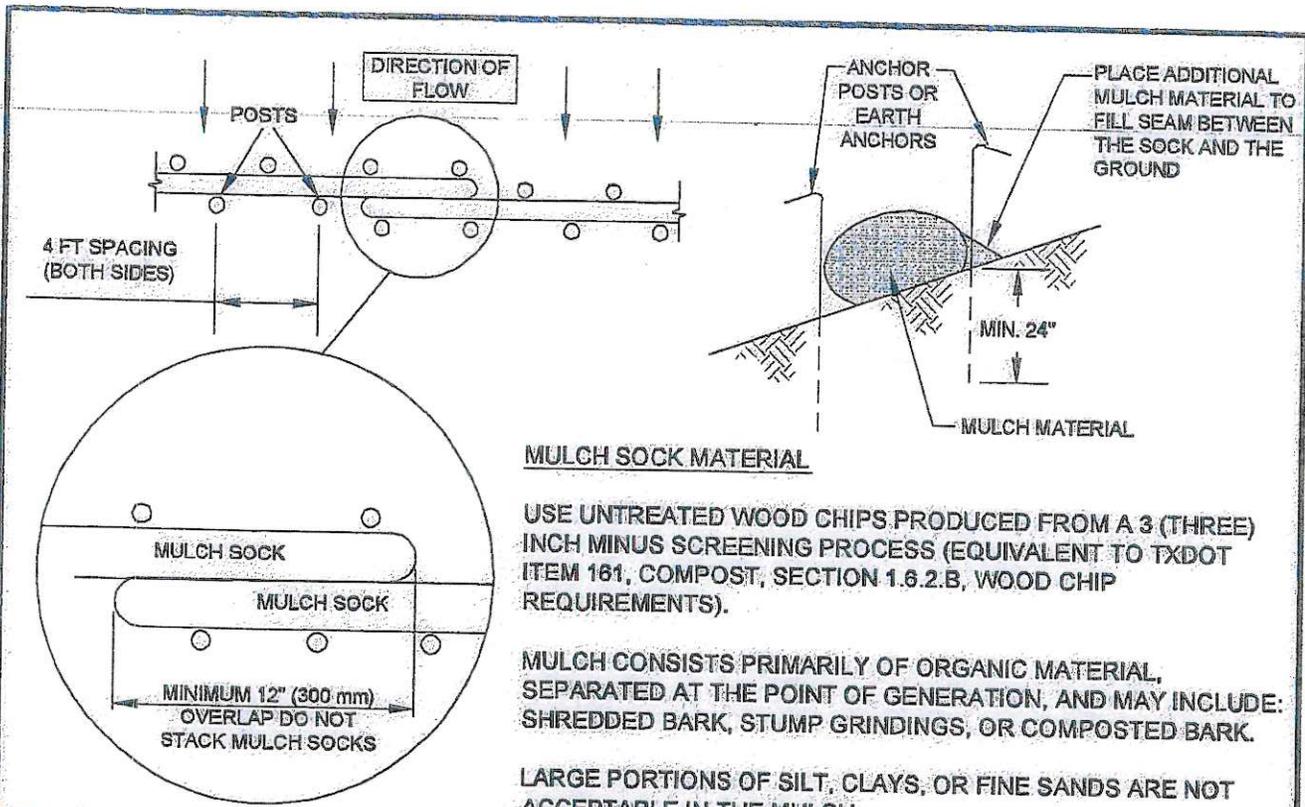
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

MULCH BERM

Gregory S. Papp P.E. 08/24/2010
ADOPTED

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR APPROPRIATE USE
OF THIS STANDARD.

STANDARD NO.
647S-1



MULCH SOCK MATERIAL

USE UNTREATED WOOD CHIPS PRODUCED FROM A 3 (THREE) INCH MINUS SCREENING PROCESS (EQUIVALENT TO TXDOT ITEM 161, COMPOST, SECTION 1.6.2.B, WOOD CHIP REQUIREMENTS).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OF MULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

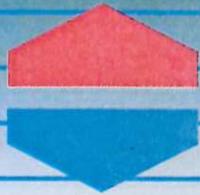
MULCH SOCK

Megan S. Ryan P.E.

08/24/2010
ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO.
648S-1



AEC Premier Straw[®] Wattles

Straw Sediment Control Device

American Excelsior Company's AEC Premier Straw Wattles are tubular products consisting of the finest available agricultural straw fibers encased in durable netting. The straw fibers are certified weed seed free. Straw wattles are dense by nature, thus they pool water unlike Curlex[®] Sediment Logs[®] that allow water to filter through their porous matrix. AEC Premier Straw Wattles may be placed across channels bottoms, but their primary use is on hillslopes to break up slope lengths and slow overland flow.



MATERIAL CHARACTERISTICS

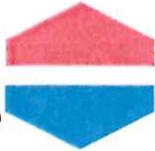
AEC Premier Straw Wattles consist of the finest weed seed free agricultural straw fibers encased in durable netting. AEC Premier Straw Wattles are available wrapped on pallets for mechanical unloading.

Product Name/Nominal Diameter	9.0 in	12.0 in	20.0 in
Minimum Diameter	8.5 in (21.6 cm)	11.5 in (29.2cm)	19.0 in (48.3 cm)
Length (± 10%)	25.0 ft (7.6 m)	10.0 ft (3.1 m)	10.0 ft (3.1 m)
Weight (± 10%)	50.0 lb (22.7 kg)	30.0 lb (13.6 kg)	60.0 lb (27.2 kg)
Density (± 10%)	4.53 lb/ft ³ (72.63 kg/m ³)	3.82 lb/ft ³ (61.25 kg/m ³)	2.75 lb/ft ³ (44.10 kg/m ³)

TYPICAL APPLICATIONS

- On hillslopes to break up slope length and overland flow
- Across channel bottoms to pool water and reduce flow velocities





AEC Premier Straw® Wattles

Straw Sediment Control Device

Installation

AEC Premier Straw Wattles shall be installed on slopes or in channels to intercept water flow and collect sediment on site. AEC Premier Straw Wattles are typically installed in a two inch deep trench that is constructed along the contour, perpendicular to the slope or direction of flow. Ends of the wattles shall be turned up the slope, so as to retain water and prevent its release from the end of the wattle.

Wattles shall be secured to the subgrade by wooden stakes spaced every four lineal feet across the length of the wattle. Stakes shall be driven through the center of the wattle and into the ground a minimum of 24in, with less than two inches projecting above the top of the wattle. A stake shall be placed within two feet of the end of the wattle. The installation process may be expedited by using a metal rod to create pilot holes for wooden stakes. When joining two wattles, tightly abut both ends or overlap the wattles approximately six inches. If wattles are joined together by abutting the ends, tie the ends together using heavy twine or plastic locking ties.



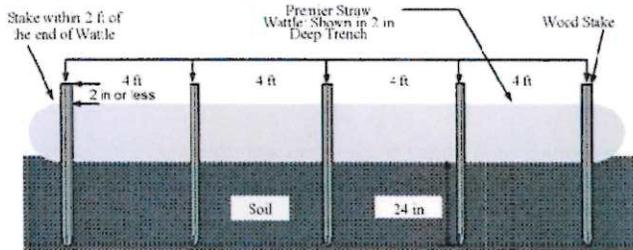
When installing in a channel bottom, AEC Premier Straw Wattle installation shall continue three feet above the anticipated high water mark.

AEC Premier Straw Wattles shall remain in place until fully established vegetation and root systems are present and can survive on their own. Wattles that are not removed will degrade in-place.

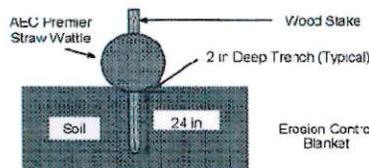
Project specifications should be reviewed for any unique installation requirements.



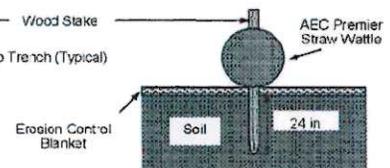
AEC Premier Straw® Wattles Staking Pattern Guide



Wattle Cross Section: On Bare Soil



Wattle Cross Section: On Erosion Control Blanket



- Notes:
1. Drawings are not to scale.
 2. Ends of Wattles shall be turned slightly up slope.
 3. Recommended stakes are wooden 1 1/8 in wide x 1 1/8 in thick by a minimum of 30 in long for 9 in and 12 in AEC Premier Straw Wattles and 48 in long for 20 in AEC Premier Straw Wattle. Stakes shall not extend above the straw wattle more than 2 in.

Disclaimer: AEC Premier Straw Wattles are a system for erosion and sediment control on slopes and channels. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion and sediment control applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using AEC Premier Straw Wattles, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing. These specifications are subject to change without notice.



If you would like to receive more information or consult with one of our Customer Care Center Specialists, please call us toll free at (888-352-9582) PDF download specifications available in the Technical Support Library at www.curlex.com

Curlex® Sediment Log®

Excelsior Sediment Control Device



Curlex Sediment Logs use excelsior fibers to reduce hydraulic energy & filter sediment-laden runoff. Tired of straw and hay bale checks being blown out and the fibers washed downstream to clog the nearest outlet? Fed up with spending all of your time and effort installing silt fence only to see it get knocked down when it rains or a good wind comes along? How about when you have to go back and pick up the loose fibers and/or remove those worn out silt fences and take them to the landfill?

Next time, consider giving our Bioengineered Sediment Logs a try. Water filters through (not underneath) the diameter of the porous, interlocked fiber log matrix. As it does, velocity is naturally reduced and sediment is collected on the upstream side of the excelsior fiber log. Install Curlex Sediment Logs over bare soil or over rolled erosion control products for a variety of typical job site applications.

Typical Applications

- Perpendicular to the flow of water in ditch bottoms, swales, and waterways
- As wattle on slopes
- Around job sites or perimeter control
- Around inlets and outlets
- Project ingress and egress termination points
- All filtering applications
- In place of bales, silt fence, and rock checks

Material Characteristics

Sediment Logs are versatile excelsior logs comprised of an outside containment fabric that is filled with unique Curlex fibers. Curlex fibers are made of Great Lakes Aspen excelsior fibers. The fibers are curled with soft interlocking barbs and 80% will be six inches in length or longer. The outside, open weave containment fabric is degradable, thus Sediment Logs will degrade in place if not removed. Sediment Logs are porous, allowing water to pass through the excelsior matrix, progressively slowing velocity and filtering sediment as it passes through the log diameter. Sediment Logs are extremely flexible and contour to the terrain to maintain intimate contact with the subgrade. In addition, they come with five other benefits; lightweight, no trenching, no seeds, no disposal hassle, and they may be reusable depending on the application.



Performance Capabilities

Product Names / Nominal Diameters

- (20 in) energy dissipation in heavy duty concentrated flow areas, slope interruption, inlet protection, perimeter control
- (12 in) energy dissipation in mild to medium concentrated flow areas, slope interruption, inlet protection, perimeter control
- (9 in) energy dissipation in mild concentrated flow areas, slope interruption, inlet protection, perimeter control
- (6 in) energy dissipation in low concentrated flow areas, slope interruption, inlet protection, perimeter control



Suggested Specifications

General: Sediment Log consists of an outside, open weave, containment fabric filled with Great Lakes Aspen curled excelsior fibers. Its purpose is to provide a flexible, lightweight, porous, sediment control device demonstrating the ability to conform to terrain details, dissipate water velocity, and filter contaminated flows.

Product: Sediment Control Device shall be Curlex Sediment Log, as manufactured by American Excelsior Company. Curlex Sediment Logs shall be made of Great Lakes Aspen excelsior fibers encased in an outside, open weave containment fabric secured on each end. Fibers shall be curled with soft, interlocking barbs to form a strong, organic filtration matrix. A minimum of 80 percent of the fibers shall be 15 cm (6 in) or greater in length. Fibers shall be evenly distributed throughout the diameter and length of the Sediment Log. Excelsior fibers shall be seed free. Density of Sediment Logs shall not exceed 2.6 lb/ft³ to ensure necessary flow rates for filtering of ≥35 GPM/ft². Curlex Sediment Log shall be manufactured in the U.S.A. at company locations where QA/QC is implemented and managed by the manufacturer. Field fabricated products and products made by anyone other than the manufacturer (i.e. distributors, dealers, etc.) shall not be accepted.

Product Name/Nominal Diameter ^a Length (±10%)	20 in 3.05 m (10 ft)	12 in 3.05 m (10 ft)	9 in 7.62 m (25 ft)	6 in 7.62 m (25 ft)
Weight (±10%) ^b	13.62 kg (30 lb)	9.02 kg (20 lb)	11.35 kg (25 lb)	5.45 kg (12 lb)
Net opening (hexagonal-shaped)	3.2 cm (1.3 in)	2.5 cm (1 in)	1.9 cm (.75 in)	1.3 cm (.5 in)

Performance Requirements

Property	Value	Method
Flow Rate (GPM/ft ²)	≥ 35	ASTM D5141
Soil Retention Effectiveness	≥ 96%	ASTM D7351
Channel Soil Loss Reduction (%)	≥ 50	ASTM D7208
pH Buffering	8 ± 3	ASTM D1117, modified
Functional Longevity ^c	≤ 24 Months	Documented Laboratory and Field Studies
Oil Sorbent	Preapproved	U.S. Environmental Protection Agency
Removal of Polynuclear Aromatic Hydrocarbons (PAHs)	≥ 95%	Quantified Research ^d
Fly Ash Filtration (TSS)	≥ 78%	Quantified Research ^e
Fly Ash Filtration (NTU)	≥ 76%	Quantified Research ^e

^a Custom sizes available

^b Weight and density are based on a dry weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior, AEC Premier Straw and AEC Premier Coconut fibers are 22%, 15%, and 20% respectively.

^c Functional longevity varies from region to region because of differences in climatic conditions.

^d Boving and Zhang, Chemosphere 54 (2004) 831-839.

^e Kelsey, K. and M. Murley. (2017, January). *Fly Ash Slurry Filtration Using Curlex® Sediment Log® - Quantifying Total Suspended Solids and Turbidity Reduction*. Unpublished internal document, ErosionLab.

^f Based on ASTM D5141

^g Based on large simulated rainfall testing

Curlex Sediment Logs Design Values with Comparisons to Typical Straw Wattles

Product Name/ Nominal Diameter	Density ^b (lb/ft ³)	Channel Design		Slope Design	
		GPM/ft ² ^f	GPM/linear ft of installed product	z Factor ^g (event-based)	% Soil Retained
6 in Curlex Sediment Log	2.3	12.5	19.5	0.161	53.9
9 in AEC Premier Straw Wattle	4.5	7.5	5.6	0.676	32.4
9 in Curlex Sediment Log	2.3	42.5	29.0	0.401	53.9
12 in AEC Premier Straw Wattle	3.5	8.0	8.0	0.828	17.2
12 in Curlex Sediment Log	2.5	40.0	36.7	0.287	70.3
20 in Curlex Sediment Log	1.4	37.5	46.9	0.297	70.3

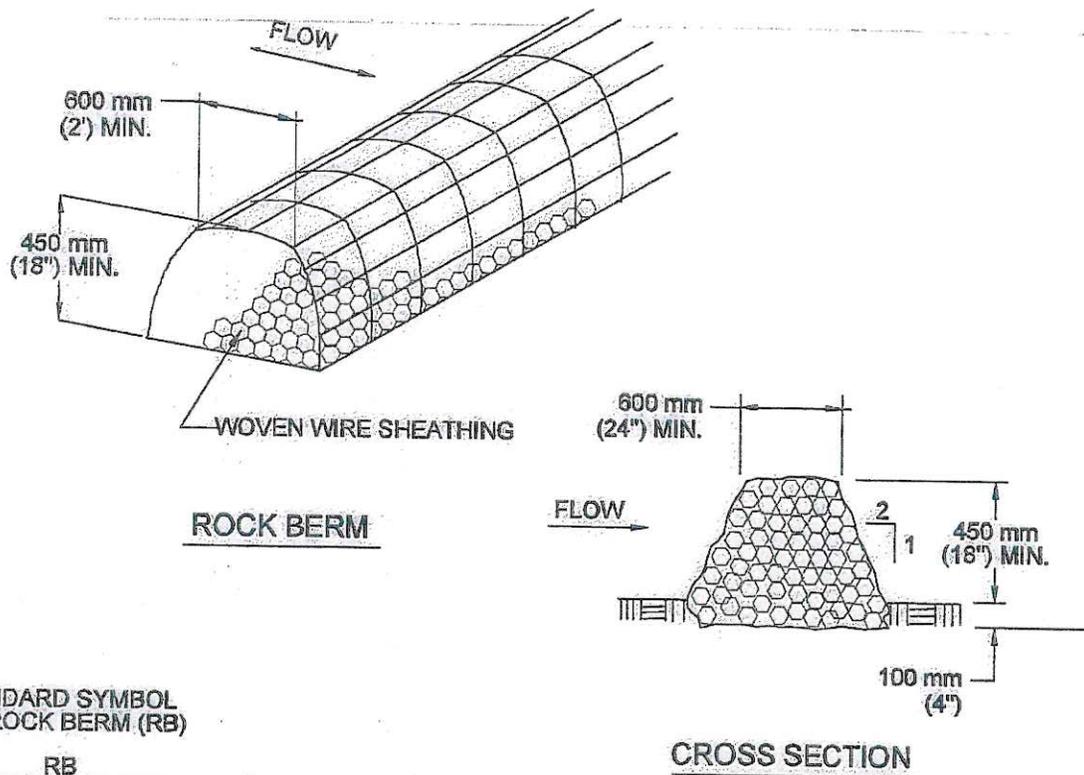
Disclaimer: Curlex Sediment Log is a system for sediment control in channels and on slopes. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in sediment control applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein, for the results, safety or suitability of using Sediment Log, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing by AEC. These specifications are subject to change without notice.



850 Avenue H E
Arlington, Texas 76011

Phone: 800-777-SOIL
www.Curlex.com

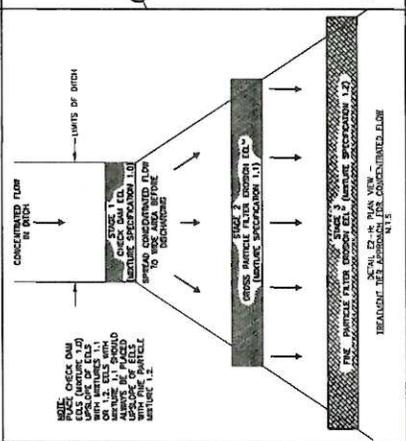
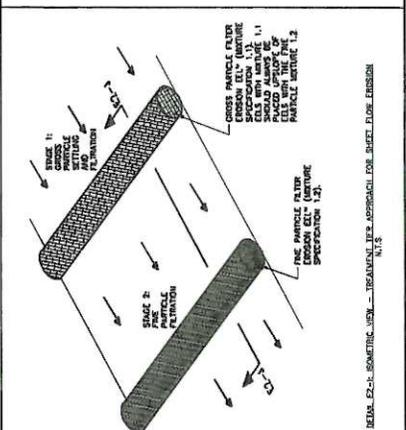
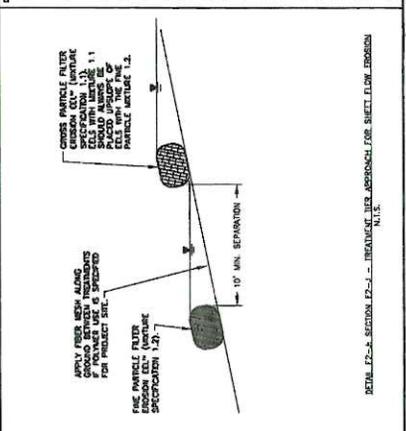
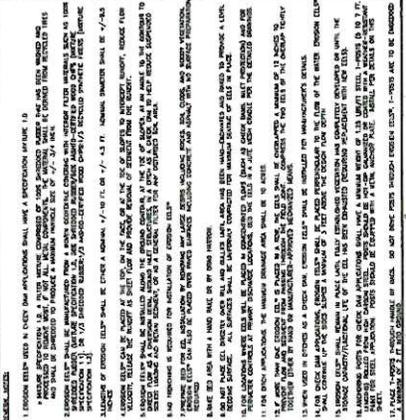
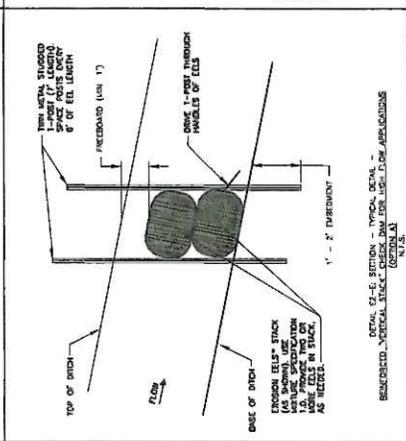
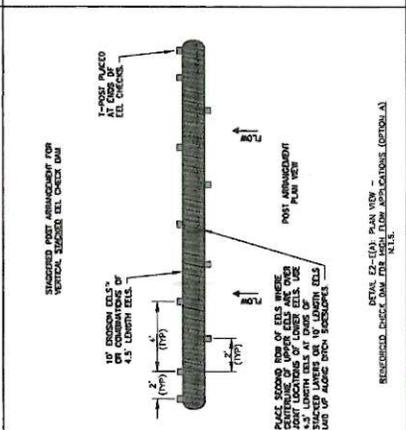
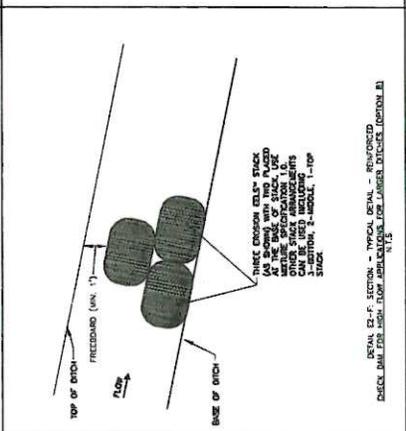
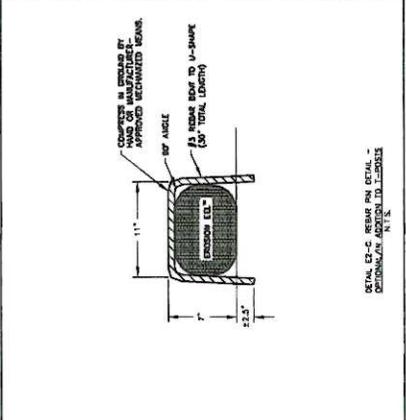
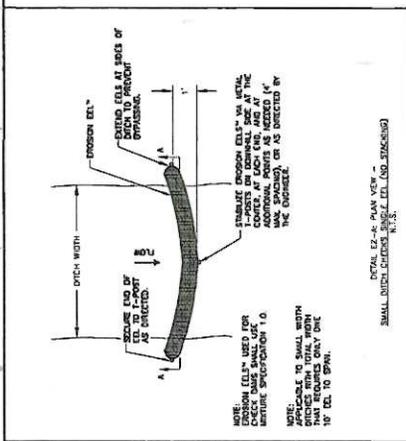
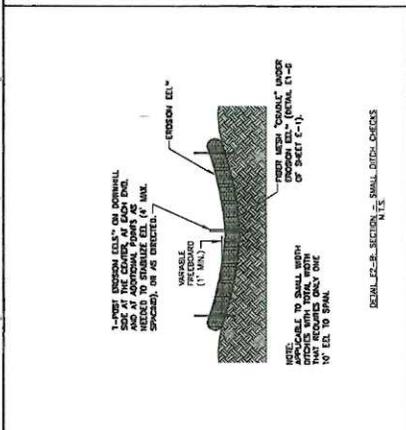
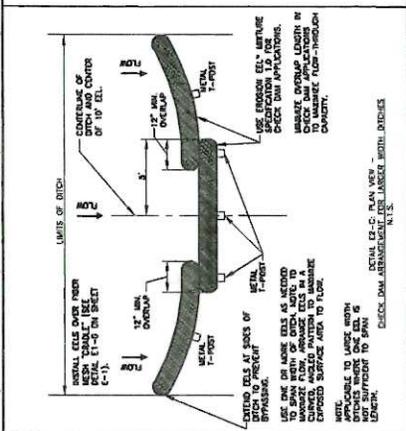
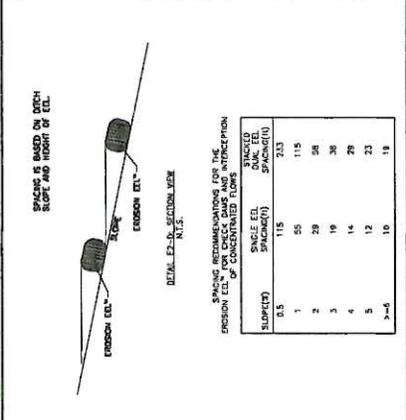
THE MOST TRUSTED NAME IN EROSION CONTROL
Form #205 / W1219R0221



NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

<p>CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT</p>		<p>ROCK BERM</p>	
<p><i>Myra S. Ryan P.E.</i> 8/24/2010 ADOPTED</p>		<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</p>	
		<p>STANDARD NO. 639S-1</p>	



Special Specification

Erosion Eels™

1. **Description.** Furnish, install, maintain, and remove Erosion Eels™ as shown on plans or as directed.
2. **Materials.**
 1. **Core Material.** Erosion Eels™ shall consist of core, internal filter materials comprised of one of two mixtures:
 - I. **Mixture Specification 1.0.** A filter mixture comprised of 100% shredded rubber that has been washed and processed to remove most, if not all, metal components. The material shall be derived from recycled tires and shall be shredded to produce a maximum particle size of +/- 3/4 inch.
 - II. **Mixture Specification 2.0.** A filter mixture comprised of 100% shredded rubber that has been washed and processed to remove most, if not all, metal components. The material shall be derived from recycled tires and shall be shredded to produce a maximum particle size of +/-2-inches.
 2. **Containment Material.** The containment material for the filter core particles shall be a woven, polypropylene geotextile with UV-stabilizers and inert to biological decay and chemically resistant to naturally occurring chemicals, alkalis, and acids. Minimum fabric permeability shall be equal to or greater than 0.05 cm/sec per ASTM D 4491. Minimum strength retained relative to UV exposure shall be 70% when tested per ASTM D 4355 for 500 hours.
 3. **Size.** Erosion Eels™ shall be produced with a nominal diameter of +/-9.5 inches and +/-20 inches and standard nominal lengths of +/-4.5 feet and +/-10 feet.
3. **Construction.** Install Erosion Eels™ near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the Erosion Eels™ into the erosion control measures used to the control sediment on construction sites. Install, align, and locate the Erosion Eels™ as specified below, as shown on the plans, as direction.
 - A. **Stabilizing/Securing.** Secure Erosion Eels™ in a method adequate to prevent displacement as a result of normal rain events and such that flow is not allowed under the bags.
 - B. **Maintenance.** Inspect and maintain the Erosion Eels™ in good condition. Maintain the integrity of the control, including keeping the bags free of accumulated silt, debris, etc., until permanent erosion control features are in place, or the disturbed area has been adequately stabilized. Stabilize the areas damaged by the removal process using appropriate methods as approved. Repair or replace damaged Erosion Eels™ as required and as directed. Temporarily remove and replace Erosion Eels™ as required to facilitate work. Remove sediment and debris when accumulation affects the

performance of the devices, after a rain, and when directed. Dispose of sediment and debris at an approved site in a manner that will not contribute to additional siltation.

C. Removal. Remove and reuse Erosion Eels™ when directed.

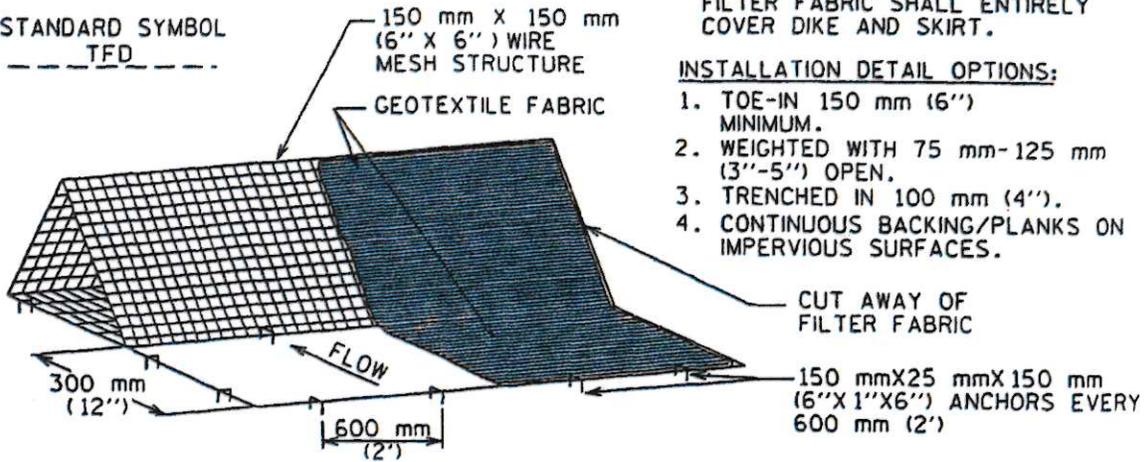
4. **Measurement.** This item will be measured by the linear foot along the centerline of the top of the control bags.
5. **Payment.** The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid for "Erosion Eels™" of the size specified. This price is full compensation for furnishing, placing, maintaining, temporarily removing and replacing as required to facilitate construction operations, and removing of the bags and for all other materials, labor, tools, equipment, and incidentals.

End-of Section

Note: Specifications are subject to revisions at the discretion of the Manufacturer.

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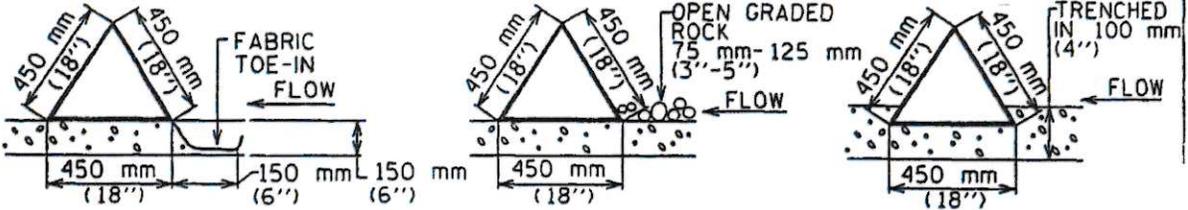
STANDARD SYMBOL
TFD



NOTE:
FILTER FABRIC SHALL ENTIRELY
COVER DIKE AND SKIRT.

INSTALLATION DETAIL OPTIONS:

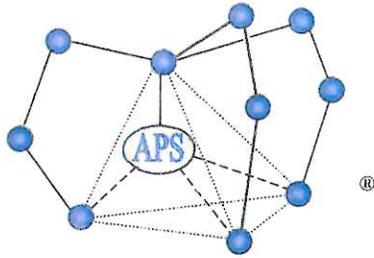
1. TOE-IN 150 mm (6") MINIMUM.
2. WEIGHTED WITH 75 mm-125 mm (3"-5") OPEN.
3. TRENCHED IN 100 mm (4").
4. CONTINUOUS BACKING/PLANKS ON IMPERVIOUS SURFACES.



GENERAL NOTES

1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75-125 mm (3-5") OPEN GRADED ROCK OR TOED-IN 150 mm (6") WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4").
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6") WIRE STAPLES ON 600 mm (2') CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8") DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6") TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE MW40-150 mm x 150 mm (6 GA. 6" x 6") WIRE MESH, 450 mm (18") ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6") AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

<p>CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT</p>	<p>TRIANGULAR SEDIMENT FILTER DIKE</p>
<p><i>APR 27 2000</i> ADOPTED</p>	<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.</p> <p>STANDARD NO. 6285</p>



Applied Polymer Systems, Inc.

519 Industrial Drive
Woodstock, GA 30189
678-494-5998
www.siltstop.com

Silt Stop® and Floc Log® Applications – Construction Sites

SEDIMENT CONTROL

Storm Water Clarification Using Floc Log® Technology

Floc Logs® are co-polymer blended blocks that provide a convenient method to introduce environmentally safe polymers into continuous or intermittent concentrated flows – such as ditches, inlets, storm drain systems and pump discharges. Each **Floc Log®** type is produced to work with specific soil lithologies and/or site water chemistries. Once introduced, **Floc Log®** polymers transform elevated levels of fine suspended particles, including colloidal clays, into soil masses easily removed from moving water. Therefore, all construction site storm water can be clarified prior to discharge onto adjacent land or into receiving waters.



Storm Water Clarification Using Baffle Grids

A **Baffle Grid** is a series of permeable panels that removes and reduces suspended soil masses, previously generated by **Floc Log®**, within a continuous or intermittent storm water flow. They are sized to meet the needs of specific flow rates. **Baffle Grids** may not be required if the **Floc Log®** generated soil masses settle readily and a low-energy water flow can be generated prior to discharge.



Storm Water Clarification Using Particle Curtains

A **Particle Curtain** is similar to a single **Baffle Grid** panel and is used for deep-water discharge locations. More than one **Particle Curtain** may be used in series to achieve better water clarity. Turbidity particles adhere to the curtain after reaction with the **Floc Logs** installed in the drainage system feeding sediment traps, catch basins and detention ponds.



Design and Development of the Floc Box™:
A Dewatering Device for Suspended Solids within Construction
Stormwater Runoff

FRIENDLY ENVIRONMENT

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Abstract

Friendly Environment is pollution-control manufacturer based in Shelbyville, Tennessee. Primarily a manufacturing company, Friendly Environment carries out extensive research to further develop their products and aid in improving their efficiency and quality of performance. The research and development department at Friendly Environment has recently produced a package dewatering stormwater treatment box prototype designed to channel sediment laden water through a lengthened, upflow path in an effort to decrease the total suspended sediment concentration of construction-related stormwater.

The prototype Floc Box™ is a 17 foot, 4 inches long by 6 foot wide container with a maximum chamber depth of 66 inches, manufactured from carbon steel with five internal chambers. The Floc Box™ is designed to improve water quality via three mechanisms: (1) settling, (2) filtration, and (3) flocculation. The water slurry is pumped through the head of the box and is forced through several chambers. Water enters the box near the base of the initial chamber and moves up through the chamber, passing through a proprietary jute/coir filter media. The filter media is approximately 8 inches thick and is impregnated with either chitosan or anionic polyacrylamide (PAM) as a polymer flocculant. In addition, polymer is added to the slurry material upon initial entry into the Floc Box™ to promote the formation of flocculants, larger particles prone to a faster settling rate.

Upon completion of the design, a prototype was manufactured in order to perform full-scale field testing. Total suspended solids (TSS) and turbidity were examined to assess the quality of the incoming and outgoing water. Samples were taken prior to the water entering the filter box, throughout the various internal chambers, and upon final discharge of the treated water. Analysis of TSS and turbidity showed considerable improvement in water quality as the sediment-laden water progressed through the treatment system.

In conclusion, it can be stated that the dewatering filter box produced by Friendly Environment can successfully be applied to treat sediment-laden stormwater. After an extensive design process and several design modifications, the filter box combines flocculation, settling and filtration to improve water quality throughout the length of the flow path. In the future, Friendly Environment foresees producing several treatment boxes that would be applicable in treating construction-related stormwater.

Introduction

Dewatering is a common practice used to manage the discharge of pollutants and the removal of accumulated stormwater at construction sites. In most cases, sediment is the targeted pollutant of dewatering operations. Therefore, this method is frequently applied to sediment-laden stormwater runoff in an effort to reduce the amount of sediment leaving the site and/or being discharged into waters of the state (California Stormwater BMP Handbook, 2003). Various devices and practices exist for dewatering purposes, each having associated advantages and disadvantages. The selection of the appropriate device will depend on the pertinent site characteristics. Predominant soil type, soil conditions, potential contaminant, sinkholes, land uses, and receiving waters are all factors to be considered when selecting a dewatering device. In addition, the volume to be dewatered, pumping rates, and device effectiveness must also be taken into consideration (Dane County Erosion and Stormwater Management Manual, 2007).

Gravity-based settling systems, passive filtration systems, and pressurized filtration systems are common methods associated with dewatering. Gravity-based settling systems include dewatering filter bags, portable sediment tanks, sediment traps, sediment basins, and wet detention basins. Passive filtration systems include filter tanks, filter basins, vegetative filters, and grassed swales. Pressurized filtration systems include portable sand filters, wound cartridge units, and micro-filtration units. Each practice has its various limitations and draw-backs. Gravity-based settling systems depend on the settling rate of the particles as a means of treatment. Passive filtration systems rely on filtration as the primary means of sediment removal; therefore, particle size distribution is an important component when considering the effectiveness of the method. Finally, pressurized filtration systems depend on filtration; however, the water is pressurized, and therefore this method is primarily used to filter larger particles when higher flow rates are necessary (Dane County Erosion and Stormwater Management Manual, 2007).

The more common dewatering applications include sediment basins, sediment traps, dewatering filter bags and dewatering tanks. Sediment basins are a temporary structure that works by detaining sediment-laden runoff for an adequate period of time to allow suspended particles to settle out. Sediment basins require excavation, construction and a sufficient area in which the device may function. Frequently, fences are erected at the boundary of the basin for safety reasons. Sediment traps are similar to sediment basins; however, typically smaller and intended to serve a smaller drainage area. Both practices require maintenance in terms of removing sediment to maintain adequate storage volume (California Stormwater BMP Handbook, 2003). Dewatering filter bags operate by receiving sediment-laden runoff via a pump, sediment is allowed to settle within the bag, while water is slowly released via small seepage holes. Filter bags are often employed where there is limited space on a construction site as they require only a 100 ft² area. At the end of the intended use of the bag, the device containing the sediment is to be removed; however, the bags are fabricated from a non-woven geotextile that can be prone to rupturing if not removed carefully (Dane County Erosion and Stormwater Management Manual, 2007). Dewatering tanks are delivered to the construction site and sediment-laden runoff is pumped into the tank where suspended particles are allowed to settle. Tanks operate under a maximum flow volume and residency time; however, these devices can be placed in series to increase the treatment and volume capacity (California Stormwater BMP Handbook, 2003).

The effectiveness and efficiency of these dewatering devices are evaluated against the U.S. Environmental Protection Agency's standards set forth for pollutants associated with construction and land development stormwater runoff. Sediment is included among these listed pollutants. Two primary analyses by which sediment concentration is evaluated are by total suspended solids (TSS) concentration and turbidity. TSS is defined as the "dry weight measure of the suspended particulate material in the water" (EPA, 2008). The analysis of TSS provides a means of estimating sediment transport which is critical when considering the downstream effects of the discharged runoff. Turbidity is defined as the "measure of the ability of light to penetrate the water" (EPA, 2008). The measure of turbidity is reflective of particle shape, size, and color. In 2009, EPA published a document of Effluent Limitation Guidelines (ELGs). Within this document, the EPA set forth a numeric turbidity limit of 280 NTUs. This proposed turbidity limit will play a strong factor in the future design and acceptance of sediment control measures, such as dewatering systems.

The Floc Box™, manufactured by Friendly Environment, a pollution control company based in Shelbyville, Tennessee, is a mobile dewatering, filtration device. The Floc Box™ is intended to receive sediment-laden water from a construction site and discharge the water at an improved level of water quality. The device was designed with the goal of reducing the total suspended solids (TSS) concentration and the turbidity. The proposed EPA ELGs were a large consideration during the design process and in analyzing the performance testing. The Floc Box™ is the result of an assessment of various available dewatering methods with the intent of achieving the proposed EPA ELGs for construction and land development stormwater runoff.

Design

The Floc Box™ was designed to channel sediment-laden water through a lengthened, upflow path in an effort to decrease the total suspended solids concentration of construction-related stormwater. The device incorporates flocculation, settling and filtration to improve water quality throughout the length of the flow path. In addition to the goal of improving water quality by reducing the total suspended solids (TSS) concentration and turbidity of the influent water, the Floc Box™ was to be a compact, portable, mobile apparatus which could be transported to and from construction sites. The frame of the Floc Box™ (Figure 1) was therefore designed to meet the average dimensions of a small trailer. These characteristics enable the box to be positioned at various locations on the construction site and in close proximity to the water volume in need of dewatering.



Figure 1. The Floc Box™ manufactured by Friendly Environment.

The Floc Box™ is a 17-ft, 4 in. long by 6-ft wide container that has a maximum chamber depth of 66 inches and is manufactured from carbon steel with five internal chambers. The Floc Box™ is designed to improve water quality via three mechanisms: (1) settling, (2) filtration and (3) flocculation. The water slurry is pumped through the head of the box and is forced through several chambers (Figure 2). Water enters the box near the base of the initial chamber and moves up through the chamber, passing through a proprietary jute/coir filter media. The filter media is approximately 8 inches thick and is impregnated with a polymer either chitosan or anionic polyacrylamide (PAM). In addition, polymer is added to the slurry material upon initial entry into the Floc Box™ to promote the formation of flocs, larger particles prone to a faster settling rate.

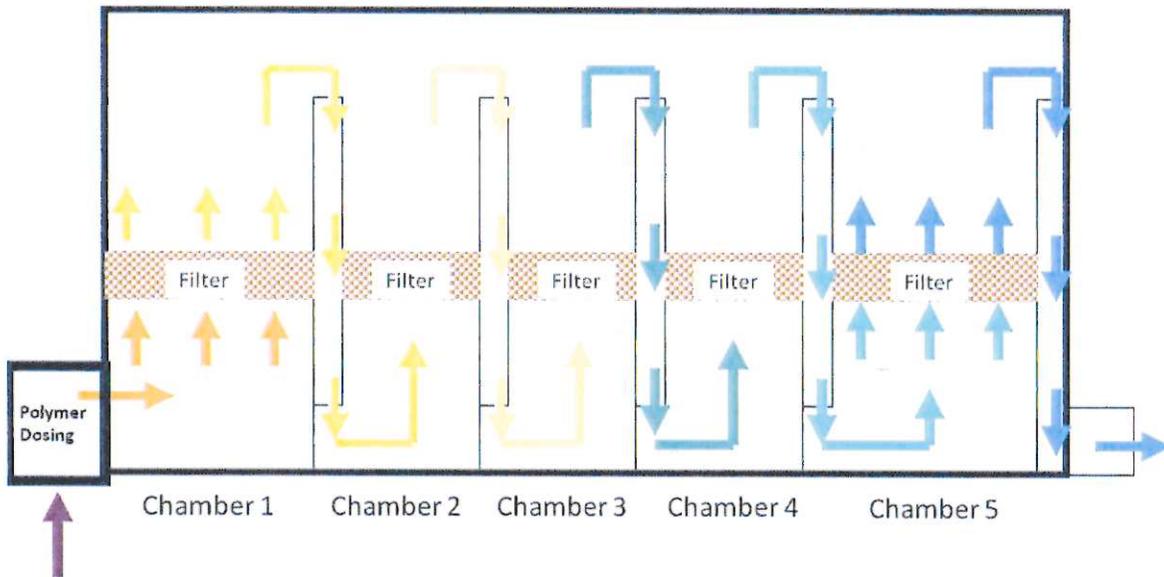


Figure 2. The Floc Box™ flow schematic.

Testing and Results

A prototype (Figure 3) of the Floc Box™ was manufactured in order to perform field testing and analysis on real world scenarios. The prototype was constructed as a trailer per the 17-ft, 4 in. length and 6-ft wide dimensions previously discussed and is equipped with five separate stilling chambers. Water enters the box near the base of the initial chamber and moves up through each chamber, passing through a proprietary jute/coir filter media. The filter media is approximately 8 inches thick and is impregnated with polymers (either chitosan or anionic polyacrylamide (PAM)) to promote the formation of flocs and increase the settling rate of the particles. The prototype was developed in order to compare the theoretical calculations to field experiments and to ensure that the Floc Box™ was capable of reducing the total suspended solids (TSS) and the turbidity of the sediment-laden water, and therefore improve the overall water quality.



Figure 3. Floc Box™ Prototype for Field Experiments and Analysis.

Field testing was performed from November 2008 through February 2009. During this time period, samples were taken and analyzed for TSS and particle size distribution. In addition, turbidity measurements were taken during the field performance testing. TSS sampling was focused on determining the influent and effluent concentrations to calculate the overall solids reduction achieved by the Floc Box™. Samples were taken in the field and sent to Environmental Science Corporation located in Mount Juliet, Tennessee for analysis. Environmental Science Corporation employed Standard Methods 2540D to perform TSS analysis. The laboratory also conducted various quality control procedures including analysis of a method blank, a laboratory control sample, and a matrix spike and matrix spike duplicate sample. Tables 1 through 3 illustrate TSS results from the Floc Box™ during the testing period.

Table 1. Total Suspended Solids (TSS) Concentration Testing Results November 21, 2008

Influent TSS (mg/L)	Effluent TSS (mg/L)	Percent Reduction (%)
960	280	71
830	340	59

Table 2. Total Suspended Solids (TSS) Concentration Testing Results December 15, 2008

Influent TSS (mg/L)	Chamber 2 TSS (mg/L)	Chamber 3 TSS (mg/L)	Effluent TSS (mg/L)	Percent Reduction (%)
590	88	39	49	92
570	71	63	31	95
3800	N/A	N/A	280	93

N/A – samples were not taken.

Table 3. Total Suspended Solids (TSS) Concentration Testing Results February 9, 2009

Influent TSS (mg/L)	Chamber 1 TSS (mg/L)	Chamber 2 TSS (mg/L)	Chamber 3 TSS (mg/L)	Chamber 4 TSS (mg/L)	Effluent TSS (mg/L)	Percent Reduction (%)
1100	1100	480	360	160	88	92
1600	380	360	160	110	70	96

The first performance testing was conducted on November 21, 2008; TSS results are displayed in Table 1. The Floc Box™ achieved an average of a 65% reduction in TSS concentration. Influent and effluent samples only were taken during this event. Table 2 represents the TSS results from the second sampling event conducted on December 15, 2008. During this event, samples were taken in Chambers 2 and 3 of the Floc Box™ to document the effects of incorporating multiple separate chambers within the unit. The Floc Box™ achieved an average of 93% reduction in TSS from the influent concentration to the final effluent concentration being discharged. The third sampling event was conducted on February 9, 2009. Samples were collected at the influent and effluent of the Floc Box™ and in the first four chambers of the unit. As illustrated by the results displayed in Table 3, the Floc Box achieved progressive TSS reductions in each chamber; resulting in an average of 94% overall reduction in TSS concentration.

Additional samples were taken during the February event and sent to Micromeritics Analytical Services in Norcross, Georgia for particle size distribution analysis. Particle Size Distributions were obtained using Light Scattering Techniques. Three samples were taken as illustrated in Figures 4, 5, and 6 displaying the results of the particle size distribution documented as volume percent versus particle diameter.

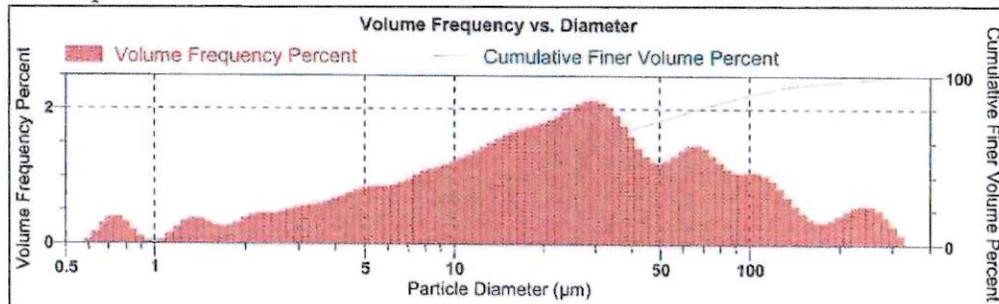


Figure 4. Particle Size Distribution at the Influent of the Floc Box™.

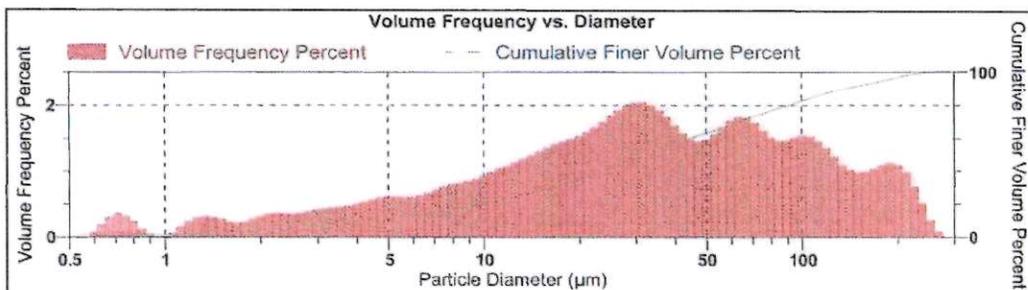


Figure 5. Particle Size Distribution in Chamber 2 of the Floc Box™.

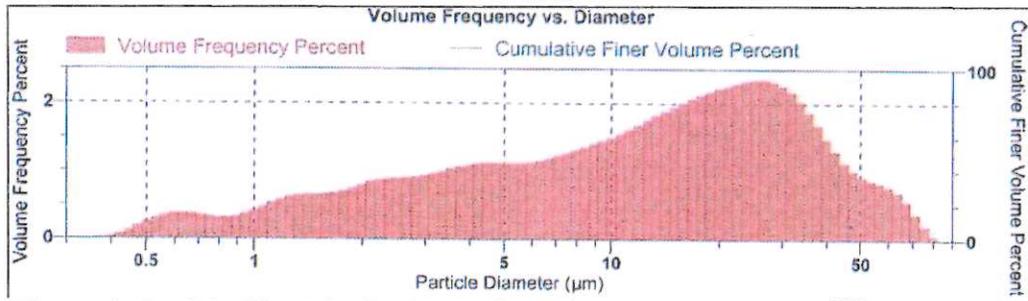


Figure 6. Particle Size Distribution at the Effluent of the Floc Box™.

As illustrated by Figure 4, the maximum particle size recorded was 325- μm at the influent of the Floc Box™. The sample mean was recorded as 43- μm . The maximum particle size in Chamber 2 was 290- μm as illustrated in Figure 5. The maximum particle size at the effluent of the Floc Box™ was recorded as 81- μm with a sample mean of 17- μm . Per the design of the unit, it was theorized that all particles with a diameter greater than 102- μm would settle and be captured within the Floc Box™. When compared to the field results, it is apparent that the theoretical estimate of the diameter of the settling particle was greater than that achieved in the field. Therefore, the Floc Box™ was effective in achieving the settling of smaller particles than estimated in the design process. This is most likely due to the use of polymer and the effects from the enhanced floc formation which was not considered in theoretical Stoke's Law design equations.

Turbidity was also analyzed at the influent and effluent of the Floc Box™. The potential reduction in turbidity achievable by the unit was considered due to the EPA proposed effluent limitation guidelines for construction and land development activities. Figure 7 illustrates a comparison between the influent turbidity and the effluent turbidity measurements. It is evident per the graph that the turbidity of the sediment-laden water was greatly reduced through treatment within the Floc Box™.

Another way of representing the test data from the Floc Box™ performance trials is through probability plots. Figure 8.0 shows the probability plot of all of the influent turbidity data versus all of the effluent turbidity data for the trial runs. The probability is based on a half-normal distribution for the data. Looking at the percentiles for these data in Table 4, 90% of the influent samples were at 1900 NTUs or lower, with 90% of the effluent readings from the treatment unit being below 255 NTUs. Also, 50% of the influent readings were at or below 561 NTUs, while 50% of the effluent turbidity readings were at 82 NTUs or lower. Finally, 10% of the effluent readings from the Floc Box™ had turbidity readings that were at or approximately 26 NTUs.

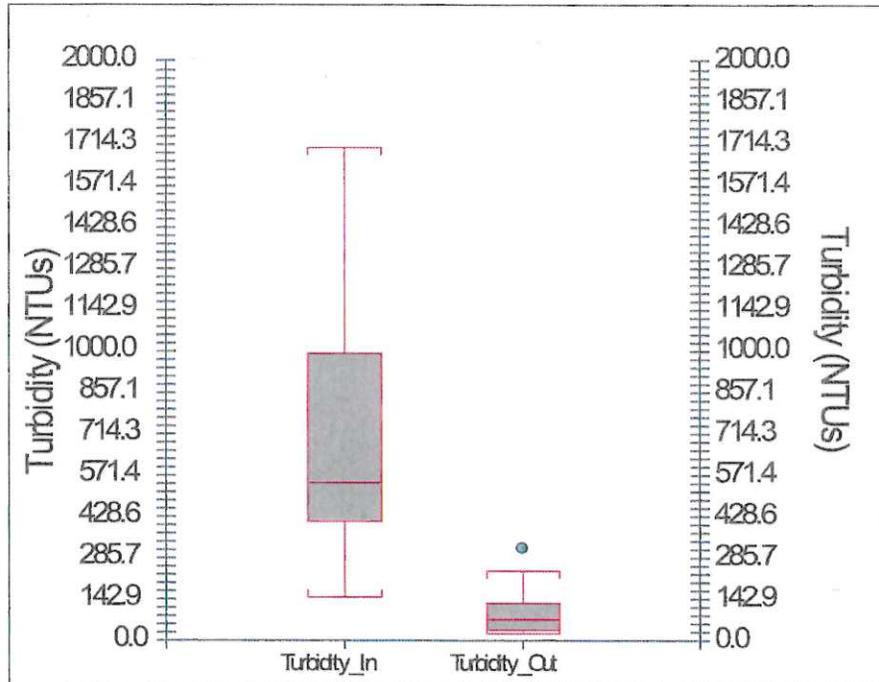


Figure 7. Box Plot of Influent and Effluent Turbidity Results for the Floc Box™.

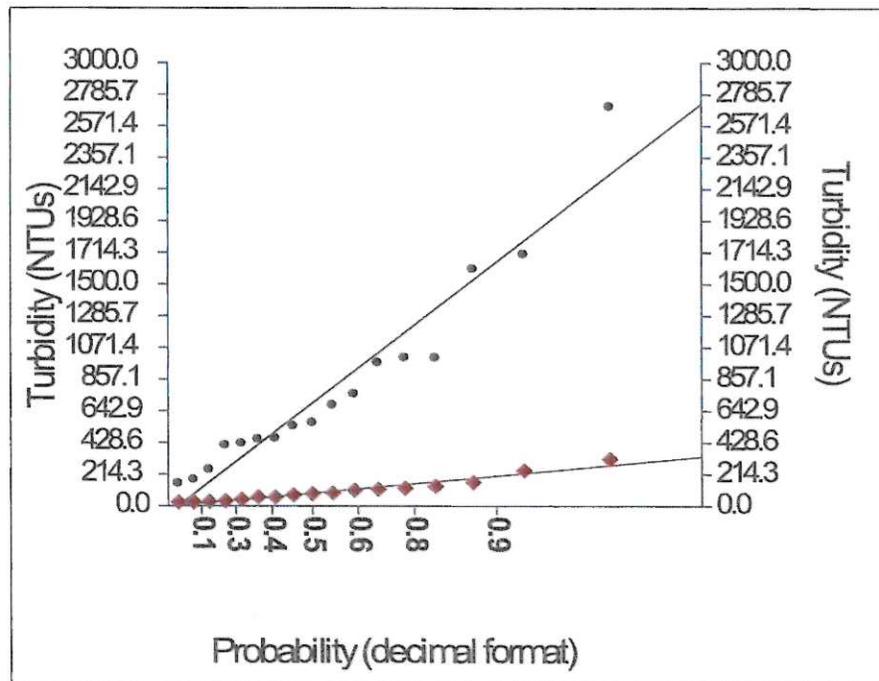


Figure 8. Probability Plot of Influent versus Effluent Turbidity Results for the Floc Box™. (Note: Red diamonds denote effluent readings; Circles denote influent readings)

Table 4. Percentiles for Turbidity Data

Percentiles	*Influent Turbidity	* Effluent Turbidity
10th	170.8	25.6
25th	414	39
50th	561	82
75th	1000	126.5
90th	1900	255.4
* Turbidity measured in NTUs		

The Floc Box™ incorporates design aspects associated with upflow velocity, particle settling velocity, and steady state flow conditions to produce a device that is capable of improving the water quality by reducing the Total Suspended Solids (TSS) and improving the turbidity of the effluent water. The Floc Box™ was designed towards applications on construction site which are frequently in need of dewatering large volumes of sediment-laden water in order to discharge the water within the limits of the State and/or EPA regulations. The Floc Box™ functions by channeling sediment-laden water through a lengthened, upflow path to decrease the TSS and turbidity of construction-related stormwater. As depicted in the comparative results between influent and effluent water samples, it is evident that TSS and turbidity are both reduced as water is conveyed through the Floc Box™.

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DEWATERING BEST MANAGEMENT PRACTICE

CATEGORY

Storm Water Pollution Prevention Plan (SWPPP) Compliance

DESCRIPTION

A portable water filtration system comprised of multiple components which, when combined, capture silt, sediment and other pollutants.

PURPOSE

Allow jobsite personnel to effectively dewater construction sites in compliance with Texas Pollutant Discharge Elimination System (TPDES) regulations.

APPLICATION

Construction projects where eliminating rainwater is a requirement in order to continue construction activity.

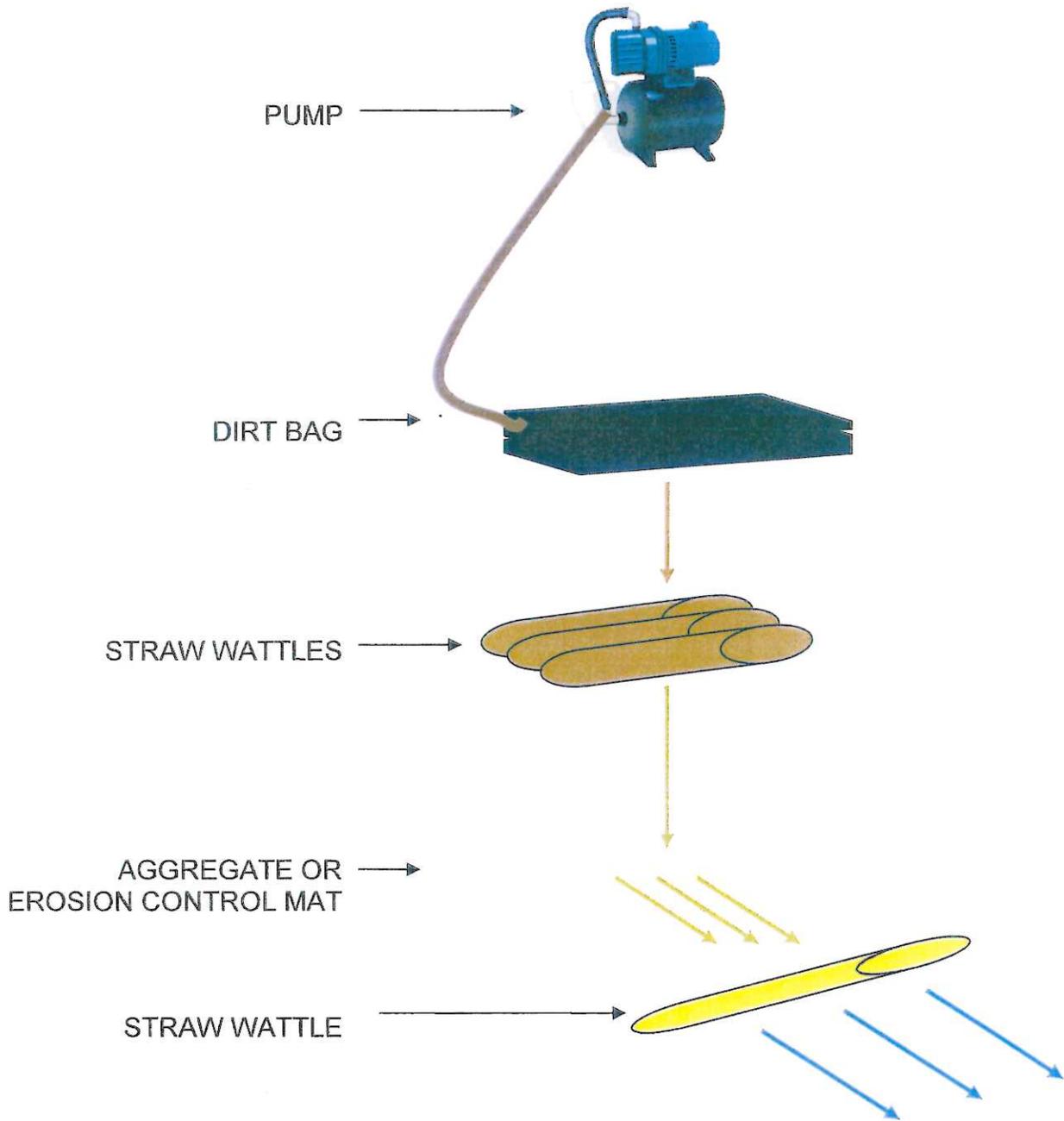
COMPONENTS

1. ACF "DirtBag" non woven geo-textile dewatering bag
2. 12" X 10' straw wattles
3. Aggregate Rock or Erosion Control Mat

SPECIFICATIONS & DRAWINGS

All component specifications and drawings of combined Best Management Practice (BMP) are attached.

DEWATERING BMP



DIRTBAG

PUMPED SEDIMENT REMOVAL SYSTEM

SEDIMENT & PERIMETER CONTROL

DIRTBAG®

Retains the silt, sand and fines while allowing the filtered water to drain out into the drainage system.

Protect the environment effectively and economically with Dirtbag®! Collect sand, silt and fines. Avoid silting streams, surrounding property and storm sewers. As more and more emphasis is put on saving our wetlands, regulations are becoming more stringent regarding the pumping of dirty water from holes around construction sites-such as foundations, pipe line construction, repairing municipal water/sewer lines, marine construction, utility, highway and site development areas. ACF can make custom Dirtbags® to suit your needs. We can produce the size, dimension, or use the fabric weight you request.

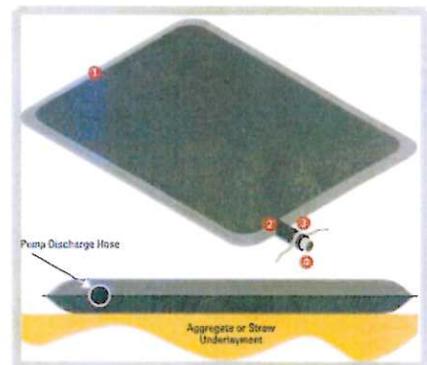
Use Recommendations

ACF Environmental manufactures Dirtbag® using a variety of woven and nonwoven geotextile fabrics. The fabric properties on the Specifications page affirm the strength of Dirtbag® and are a result of tests conducted at on-site laboratories at the geotextile factory. All test methods are ASTM or industry standards.

Each standard Dirtbag® has a fill spout large enough to accommodate a 4" discharge hose. Straps are attached to secure the hose and prevent pumped water from escaping without being filtered.

Strap the neck of Dirtbag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or haybale bed to maximize water flow through the surface area of the bag.

Dirtbag® is full when it no longer can efficiently filter sediment or pass water at a reasonable rate. Flow rates will vary depending on the size of Dirtbag®, the type and amount of sediment discharged into Dirtbag®, the type of ground, rock or other substance under the bag. Under most circumstances Dirtbag® will accommodate flow rates of 750 gallons per minute. Use of excessive flow rates or overfilling Dirtbag® with sediment will cause ruptures of the bags or failure of the hose attachment straps. **Dirtbag must be monitored during use.**



SPECIFICATIONS

LET'S GET IT DONE

1.0 Description

- 1.1 This work shall consist of furnishing, placing and removing Dirtbag® pumped sediment control device as directed by the design engineer or as shown on the contract drawings. Dirtbag® pumped-silt control system is marketed by:

ACF Environmental, Inc.
2831 Cardwell Road
Richmond, Virginia 23234
Phone: 800-448-3636 • Fax: 804-743-7779
www.acfenvironmental.com

2.0 Materials

2.1 Dirtbag®

- 2.1.1 Dirtbag® shall be manufactured using a polypropylene nonwoven geotextile sewn into a bag with a double needle matching using a high strength thread.
- 2.1.2 Each standard Dirtbag® has a fill spout large enough to accommodate a 4" discharge hose. Straps are attached to secure the hose and prevent pumped water from escaping without being filtered.
- 2.1.3 Dirtbag® seams shall have an average wide width strength per ASTM D-4884 as follows:

Dirtbag® Style	Test Method	Test Method
Dirtbag® 55	ASTM D-4884	100 lbs./in

Property	Test Method	Units	Test Results
Weight	ASTM D-3776	oz/yd	8
Grab Tensile	ASTM D-4632	lbs.	205
Puncture	ASTM D-4833	lbs.	110
Flow Rate	ASTM D-4491	gal/min/ft ²	110
Permittivity	ASTM D-4491	sec. ⁻¹	1.5
Mullen Burst	ASTM D-3786	lbs. in ²	350
UV Resistant	ASTM D-4355	%	70
AOS % Retained	ASTM D-4751	US Sieve	80

All properties are Minimum Average Roll Value (MARV) except the weight of the fabric which is given for information only. Depending on soil conditions and filtration requirements, additional geotextile options are available. Please call our engineering staff for solutions.

3.0 Construction Sequence

- 3.1.1 To install Dirtbag® on a slope so incoming water flows downhill through Dirtbag® without creating more erosion. Strap the neck of Dirtbag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or haybale bed to maximize water flow through the surface area of the bag.
- 3.1.2 Dirtbag® is full when it no longer can efficiently filter sediment or allow water to pass at a reasonable rate. Flow rates will vary depending on the size of Dirtbag®, the type and amount of sediment discharged into Dirtbag®, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies. Under most circumstances Dirtbag® will accommodate flow rates of 750 gallons per minute. Use of excessive flow rates or overfilling Dirtbag® with sediment will cause the bag to rupture or failure of the hose attachment straps.

*Must be monitored during use.

- 3.1.3 Dispose Dirtbag® as directed by the site engineer. If allowed, Dirtbag® may be cut open and the contents seeded after removing visible fabric. Dirtbag® is strong enough to be lifted with optional straps if it must be hauled away. Off-site disposal may be facilitated by placing Dirtbag® in the back of a dump truck or flatbed prior to use and allowing the water to drain from the bag while in place, thereby eliminating the need to lift Dirtbag®.

4.0 Basis of Payment

- 4.1 The payment for any Dirtbag® used during construction is to be included in the bid of overall erosion and sediment control plan unless a unit price is requested.

*ACF Environmental is not liable for failures or misuse of the Dirtbag.

SIMILAR PRODUCTS IN THIS FAMILY:

PRODUCT

PRODUCT

PRODUCT





Flexterra® HP-FGM™

High Performance Flexible Growth Medium



**GREEN DESIGN
ENGINEERING™**
EARTH-FRIENDLY SOLUTIONS
FOR SUSTAINABLE RESULTS™

Solutions for your Environment™

Description

Flexterra® HP-FGM™ is a fully biodegradable, High Performance-Flexible Growth Medium (HP-FGM) composed of 100% recycled and Thermally Refined™ wood fibers, crimped interlocking biodegradable fibers, micro-pore granules, naturally derived cross-linked biopolymers and water absorbents. The HP-FGM is phytosanitized, free from weed seeds, free from plastic netting, requires no curing period and upon application forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth.

Recommended Applications

- Erosion control for slopes ranging from mild to severe ($\leq 0.25H:1V$)
- Rough graded slopes
- Superior performance over rolled erosion control blankets
- Enhancement of vegetation establishment
- Ideal infill material to create the GreenArmor™ System

Technical Data

Physical Properties*	Test Method	Units	Tested Value
Mass/Unit Area	ASTM D6566 ¹	g/m ² (oz/yd ²)	≥ 390 (11.6)
Thickness	ASTM D6525 ¹	mm (in)	≥ 5.6 (0.22)
Ground Cover	ASTM D6567 ¹	%	≥ 99
Water Holding Capacity	ASTM D7367	%	≥ 1,700
Material Color	Observed	n/a	Green
Performance Properties*	Test Method	Units	Tested Value
Cover Factor ²	Large Scale ⁴	n/a	≤ 0.01
Percent Effectiveness ³	Large Scale ⁴	%	≥ 99
Cure Time	Observed	hours	0 - 2
Vegetation Establishment	ASTM D7322 ¹	%	≥ 800
Functional Longevity ⁵	ASTM D5338	months	≤ 18
Environmental Properties*	Test Method	Units	Tested Value
Ecotoxicity	EPA 2021.0	%	48-hr LC ₅₀ > 100%
Effluent Turbidity	Large Scale ⁴	NTU	< 250
Biodegradability	ASTM D5338	n/a	Yes
Product Composition			Typical Value
Thermally Processed Wood Fiber ⁶ (within a pressurized vessel)			80 %
Wetting Agents-including high-viscosity colloidal polysaccharides, cross-linked biopolymers, and water absorbents			10 %
Crimped, Biodegradable Interlocking Fibers			5 %
Micro-Pore Granules			5 %

* When uniformly applied at a rate of 3500 pounds per acre (3900 kilograms/hectare) under laboratory conditions. 1. ASTM test methods developed for Rolled Erosion Control Products that have been modified to accommodate Hydraulic Erosion Control Products. 2. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface. 3. % Effectiveness = One minus Cover Factor multiplied by 100%. 4. Large scale testing conducted at Utah Water Research Laboratory. For specific testing information please contact a Profile technical service representative at 866-325-6262 or +1-847-215-1144. 5. Functional Longevity is the estimated time period, based upon field observations, that a material can be anticipated to provide erosion control and agronomic benefits as influenced by composition, as well as site-specific conditions, including; but not limited to - temperature, moisture, light conditions, soils, biological activity, vegetative establishment and other environmental factors. 6. Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa) in order to be Thermally Refined™/Processed and to achieve phyto-sanitization.

Packaging Data

Properties	Test Method	Units	Nominal Value
Bag Weight	Scale	kg (lb)	22.7 (50)
Bags per Pallet	Observed	#	40

UV and weather-resistant plastic bags. Pallets are weather-proof stretch wrapped with UV resistant pallet cover.

Profile Products

750 Lake Cook Road, Ste. 440
Buffalo Grove, IL 60089
800-508-8681 or +1-847-215-1144
www.profileproducts.com

To the best of our knowledge, the information contained herein is accurate. However, Profile Products cannot assume any liability whatsoever for the accuracy or completeness thereof. Final determination of the suitability of any information or material for the use contemplated, of its manner of use and whether the suggested use infringes any patents is the sole responsibility of the user.
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Section 31 25 14.13 – Hydraulically-Applied Erosion Control: High Performance-Flexible Growth Medium™

GENERAL

1.01 SUMMARY

- A. This section specifies the hydraulically-applied erosion control product Flexterra® High Performance-Flexible Growth Medium™ (HP-FGM™). Flexterra HP-FGM is a biodegradable material, composed of 100% recycled, Thermally Refined™ virgin wood fibers, crimped biodegradable interlocking fibers derived from regenerated cellulose sourced from sustainably harvested wood, micro-pore granules, naturally derived cross-linked biopolymers and water absorbents. The HP-FGM is patented, made in the US, plastic-free, and phytosanitized to eliminate potential weed seeds and pathogens. Flexterra requires no curing period and upon application forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth.
- B. Related Sections: Other Specification Sections, which directly relate to the work of this Section include, but are not limited to the following:
1. *Section 01 57 00 – Temporary Erosion and Sediment Control*
 2. *Section 02 24 23 – Chemical Sampling and Analysis of Soils*
 3. *Section 31 00 00 – Earthwork*
 4. *Section 31 91 00 – Planting Preparation*
 5. *Section 32 01 90.16 – Amending Soils*
 6. *Section 32 92 00 – Turf and Grasses*

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions. Include required substrate preparation, list of materials and application rate.
- B. Certifications: Manufacturer shall submit a letter of certification that the product meets or exceeds all technical and packaging requirements and is made in the U.S.A.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials and products in UV and weather-resistant factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage, weather, excessive temperatures and construction operations.

PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. PROFILE Products LLC
750 Lake Cook Road – Suite 440
Buffalo Grove, IL 60089
International - +1-847-215-1144
United States and Canada – 800-366-1180 (Fax 847-215-0577)
www.profileproducts.com

2.02 MATERIALS

- A. The HP-FGM shall be Flexterra HP-FGM and conform to the following typical property values when uniformly applied at a rate of 3,500 pounds per acre (3,900 kilograms/hectare) under laboratory conditions.

Property	Test Method	Tested Value (English)	Tested Value (SI)
Physical			
Mass/Unit Area	ASTM D6566	≥11.6 oz/yd ²	≥390 g/m ²
Thickness	ASTM D6525 ¹	≥ 0.22 inch	≥ 5.6 mm
Ground Cover	ASTM D6567 ¹	≥ 99%	≥ 99%
Water Holding Capacity	ASTM D7367	≥ 1,700%	≥ 1,700%
Material Color	Observed	Green	Green
Performance			
Cover Factor ²	ASTM D8298-Type 1	≤ 0.01	≤ 0.01
% Effectiveness ³	ASTM D8298-Type 1	≥ 99%	≥ 99%
Vegetation Establishment	ASTM D7322	≥ 800%	≥ 800%
Functional Longevity ⁴	ASTM D5338	≤ 18 months	≤ 18 months
Cure Time	Observed	0 - 2 hours	0 - 2 hours
Environmental Properties			
Ecotoxicity ⁵	EPA 2021.0	Non-Toxic	Non-Toxic
Biodegradability	ASTM D5338	Yes	Yes
Certified BioPreferred [®] Biobased Content	ASTM D6866	100%	100%
Elemental Impurity Limits	ASTM D8082	Pass	Pass

1. ASTM test methods developed for Rolled Erosion Control Products and have been modified to accommodate Hydraulically-Applied Erosion Control Products.
2. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface.
3. % Effectiveness = One minus Cover Factor multiplied by 100%.
4. Functional Longevity is the estimated time period, based upon field observations, that a material can be anticipated to provide erosion control and agronomic benefits as influenced by composition, as well as site-specific conditions, including; but not limited to – temperature, moisture, light conditions, soils, biological activity, vegetative establishment and other environmental factors.
5. 48-hour LC₅₀ > 100% - LC₅₀ refers to the percent concentration of a substance in water when 50% percent mortality of an organism is reached. 50% mortality of the tested species (*Daphnia magna*) could not be achieved when subjected to 100% effluent concentration proving the material to be acutely non-toxic.

2.03 COMPOSITION

- A. All components of the HP-FGM shall be pre-packaged by the Manufacturer to assure both material performance and compliance with the following values. Under no circumstances shall field mixing of components be permitted. No chemical additives with the exception of fertilizer, soil neutralizers and biostimulant materials should be added to this product.
1. Thermally Processed* (within a pressurized vessel) Virgin Wood Fibers – 80%
*Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa)
 2. Wetting agents (including high-viscosity colloidal polysaccharides, cross-linked biopolymers, and water absorbents) – 10%
 3. Crimped, Biodegradable Interlocking Fibers derived from regenerated cellulose sourced from sustainably harvested wood – 5%
 4. Micro-Pore Granules – 5%

2.04 PACKAGING

- A. Bags: Net Weight – 50 lb (22.7 kg), UV and weather-resistant plastic film
Pallets: Weather-proof, stretch-wrapped with UV resistant pallet cover
Pallet Quantity: 40 bags/pallet or 1 ton (909 kg)/pallet

EXECUTION

3.01 SOIL TESTING

- A. Soil Samples shall be taken and sent to a third-party, independent lab for analysis and in compliance with Section 02 24 23 – Chemical Sampling and Analysis of Soils, if applicable.
- B. The tests shall include analysis and interpretation of results.
- C. The soil testing methods used shall be compliant with recognized agronomic testing standards, as outlined in Section 02 24 23, for revegetation of disturbed sites.
- D. Soil Analysis shall include results for:
 - 1. Soil pH
 - 2. Soluble Salts
 - 3. Excess Carbonate
 - 4. Organic Matter
 - 5. Nutrient readings for:
 - i. Nitrogen, Phosphorus, Potassium
 - ii. Magnesium, Calcium, Sodium, Manganese, Sulfur, Zinc, Copper, Iron, Boron
 - 6. Cation Exchange Capacity
 - 7. Percent Base Saturation Sodium
- E. ProGanics® BSM, BioPrime™, JumpStart™, Aqua-pHix™ and NeutralLime™ Dry or other amendments shall be specified according to Section 32 01 90.16 – Amending Soils and applied with the hydroseeding slurry at Manufacturer recommended rates based on soil test results.

3.02 VEGETATION SPECIES SELECTION

Once soils have been analyzed for agronomic potential and amendment recommendations, selection of suitable plant species for achieving sustainable growth and effective erosion control is vital. Seed selection can be performed by a qualified seed supplier, consulting professional and/or regulatory agency. In lieu of this, a warm, extreme warm, or cool season Vegetator® variety mix may be considered. Species selection and establishment shall be compliant with Section 32 92 00 – Turf and Grasses, if applicable.

- A. Site and project specific information considered for species selection shall include:
 - 1. Project Location and Planning
 - i. Climate
 - ii. Elevation
 - iii. Aspect
 - iv. Slope/Gradient
 - v. Permanent or Temporary Planting
 - vi. Installation Date(s)
 - 2. Soil Conditions
 - i. Soil Texture
 - ii. Soil pH
 - iii. Toxicities/Deficiencies noted in the previous section.
 - 3. Site Maintenance Requirements
 - i. Mowing
 - ii. Irrigation
 - iii. Animal grazing preference
 - 4. Preferred Vegetation
 - i. Drought Tolerant
 - ii. Native Vegetation

- iii. Shrub Species
- iv. Turf Grasses
- v. Cool Season
- vi. Warm Season
- vii. Blend of Cool and Warm Season
- viii. Legume Species
- ix. Cover Crops

3.03 SUBSTRATE AND SEEDBED PREPARATION

- A. Examine substrates and conditions where materials will be applied. Apply products to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope. Do not proceed with installation until satisfactory conditions are established.
- B. Depending upon project sequencing and intended application, prepare seedbed in compliance with other specifications under Section 1.01 B

3.04 INSTALLATION

- A. Strictly comply with equipment manufacturer's installation instructions and recommendations. Use approved hydroseeding machines with fan-type nozzle (50-degree tip). To achieve optimum soil surface coverage, apply HP-FGM from opposing directions to soil surface. Rough surfaces (rocky terrain, cat tracked and ripped soils) may require higher application rates to achieve 100% cover. Slope interruption devices or water diversion techniques are recommended when slope lengths (3H:1V) exceed 100 feet (30 m). Slope interruption intervals may need to be decreased based on steeper slopes or other site conditions. HP-FGM is not recommended for channels or areas with concentrated water flow unless used in conjunction with a rolled erosion control product designed to accommodate the anticipated hydraulic conditions. Unless approved by the Manufacturer, no chemical additives with the exception of fertilizer, soil neutralizers and biostimulant materials should be added to this product.
- B. For Erosion Control and Revegetation: To ensure proper application rates, measure and stake area. For maximum performance, apply HP-FGM in a two-step process*:
 - 1. *Step One: Apply fertilizer with specified prescriptive agronomic formulations and typically 50% of specified seed mix with a small amount of HP-FGM for visual metering. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.*
 - 2. *Step Two: Mix balance of seed and apply HP-FGM at a rate of 50 lb per 125 gallons (22.7 kg/475 liters) of water over freshly seeded surfaces. Confirm loading rates with equipment manufacturer.*

**Depending upon site conditions HP-FGM may be applied in a one-step process where all components may be mixed together in single tank loads. Consult with Manufacturer for further details.*

Best results and more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperature, low humidity conditions with product applied on dry soils.

- C. Mixing: A mechanically agitated hydroseeding machine is strongly recommended:
 - 1. *Fill 1/3 of mechanically agitated hydroseeder with water. Turn pump on for 15 seconds and purge and pre-wet lines. Turn pump off.*
 - 2. *Turn agitator on and load low density materials first (i.e. seed).*
 - 3. *Continue slowly filling tank with water while loading fiber matrix into tank.*
 - 4. *Consult application and loading charts to determine number of bags to be added for desired area and application rate. Mix at a rate of 50 lb of HP-FGM per 125 gallons (22.7 kg/475 liters).*
 - 5. *All HP-FGM should be completely loaded before water level reaches 75% of the top of tank.*
 - 6. *Top off with water and mix until all fiber is fully broken apart and hydrated (minimum of 10 minutes — increase mixing time when applying in cold conditions). This is very important to fully activate the bonding additives and to obtain proper viscosity.*
 - 7. *Add fertilizer and any other remaining amendments.*
 - 8. *Shut off recirculation valve to minimize potential for air entrainment within the slurry.*
 - 9. *Slow down agitator and start applying with a 50-degree fan tip nozzle.*

10. *Spray in opposing directions for maximum soil coverage.*

- D. Application Rates: These application rates are for standard conditions. Application rates may need to be increased to accommodate very rough surfaces.

Slope Gradient / Condition	English	SI
≤ 4H to 1V	2,500 lb/ac	2,800 kg/ha
> 4H to 1V and ≤ 3H to 1V	3,000 lb/ac	3,400 kg/ha
> 3H to 1V and ≤ 2H to 1V	3,500 lb/ac	3,900 kg/h
> 2H to 1V and ≤ 1H to 1V	4,000 lb/ac	4,500 kg/ha
> 1H to 1V	4,500 lb/ac	5,100 kg/ha
Below ECB or TRM	1,500 lb/ac	1,700 kg/ha
As infill for TRM*	3,500 lb/ac	3,900 kg/ha

*Use only approved and tested Futerra® Turf Reinforcement Mats (TRMs) to create the GreenArmor™ System

For additional details including mixing ratios/loading rates for specific machine sizes and visual keys for proper application, please consult Profile® Application Guide for HP-FGM™ and ET-FGM™.

3.05 CLEANING AND PROTECTION

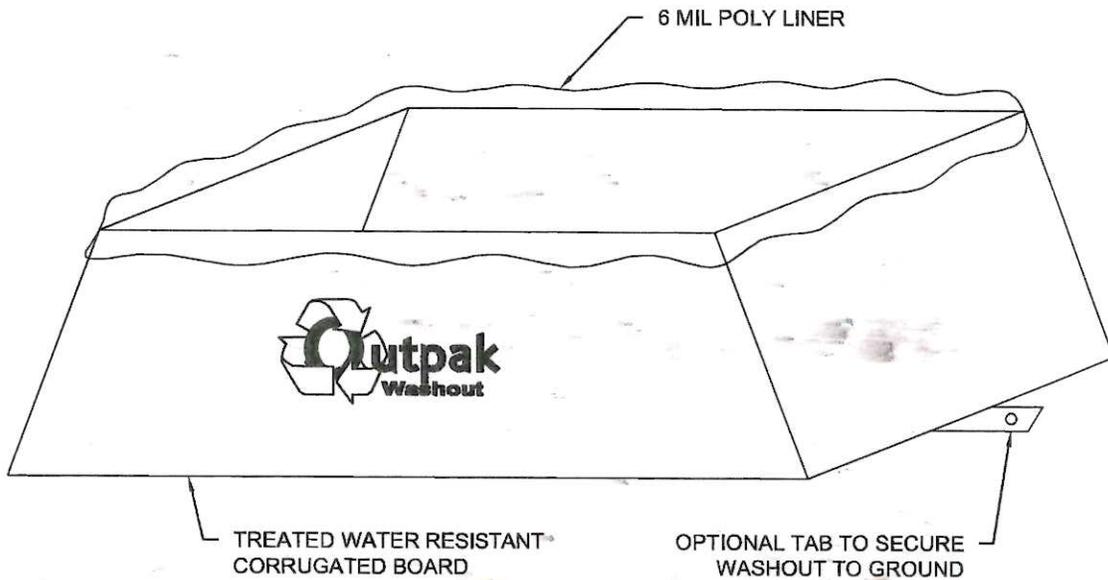
- A. Always flush residual slurry from hydraulic seeding/mulching equipment immediately following each application, at the end of each work period or when equipment will be left unattended. Compounds containing residual Urea, Nitrogen, Phosphorus, Potassium and other substances may form and can be hazardous to human health and equipment.
- B. Clean spills promptly. Advise owner of methods for protection of treated areas. Do not allow treated areas to be trafficked or subjected to grazing.

3.06 INSPECTION AND MAINTENANCE

- A. All inspections and maintenance recommendations shall be conducted by qualified professionals consistent with the owner, engineer/specifier and regulatory entity(ies) expectations.
- B. Initial inspections shall insure installations are in accordance with the project plans and specifications with material quantities and activities fully documented. Refer to Section 32 92 00 – Turf and Grasses for any additional details.
- C. Subsequent inspections shall be conducted at pre-determined time intervals and corrective maintenance activities directed after each significant precipitation or other potentially damaging weather or site event.

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Revision Date: 08/2021



NOTES:

1. THE WASHOUT SHALL BE INSTALLED PRIOR TO USING MATERIALS THAT REQUIRE WASHOUT ON THIS PROJECT.
2. AS NECESSARY, SIGNS SHALL BE PLACED THROUGHOUT THE SITE TO INDICATE THE LOCATION OF THE WASHOUT.
3. THE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR LIQUID WASTE.
4. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE FACILITY.
5. DO NOT WASHOUT INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
6. AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
7. LOCATE WASHOUT AT LEAST 50' (15 METERS) FROM STORM DRAIN, OPEN DITCHES, OR WATER BODIES.
8. THE WASHOUT SHALL BE USED ONLY FOR NON-HAZARDOUS WASTES.

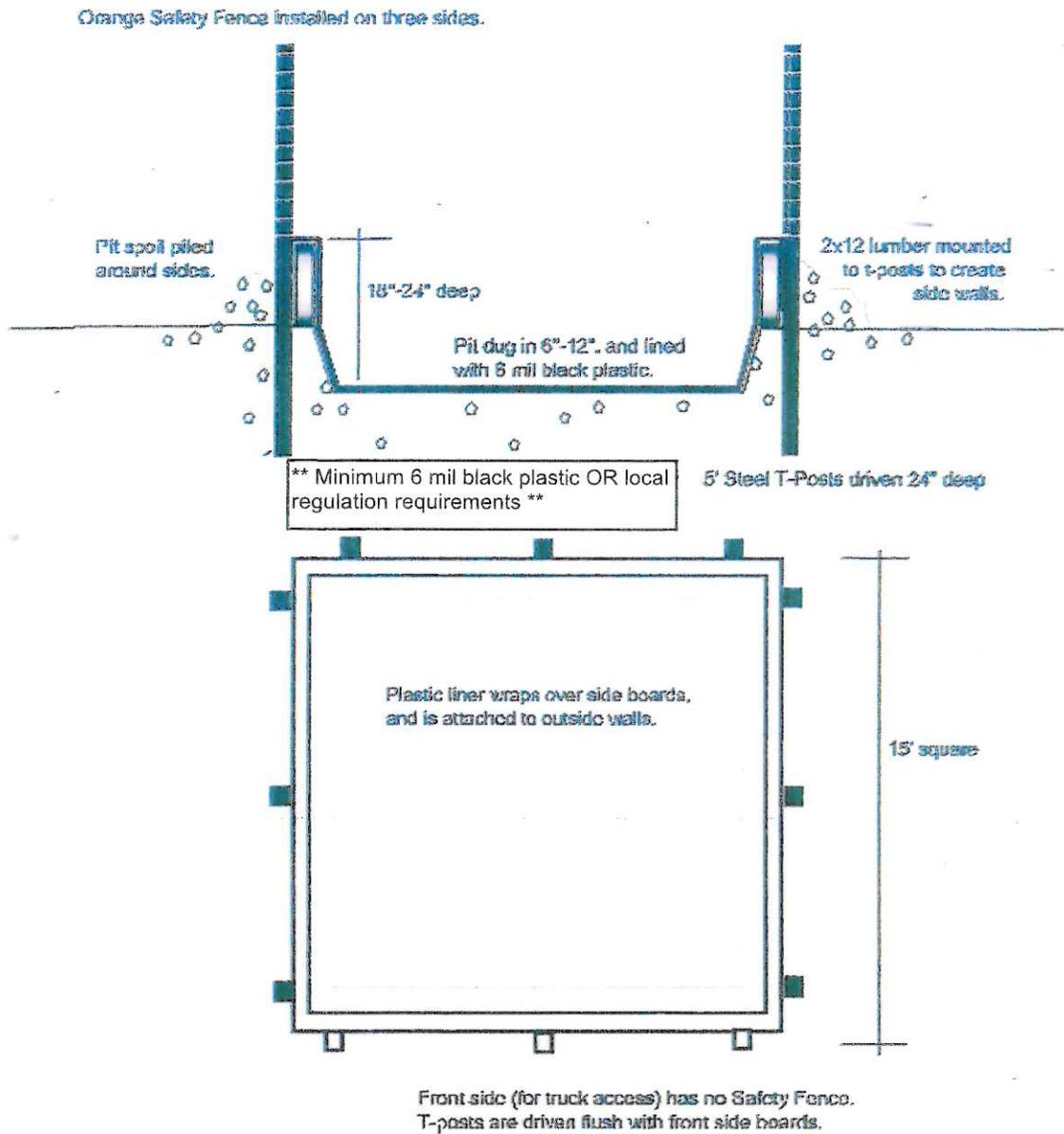
CORRUGATED WASHOUT
SPECIFICATIONS



Boise, Idaho
208-890-0383
outpak.com

Best Management Practice Concrete Washout

The purpose of this BMP is to provide a controlled location for the dumping of waste concrete and concrete truck washout water. With it's liner, this BMP will trap the waste concrete liquids, keeping them from leaching into the soil and allowing them to evaporate. The solids can then be removed and disposed of properly.



Spill Response Kit

30 Gallon Spill Response Kit is designed to meet the most common need for spill response at construction sites. Focused on providing quick response to petroleum-based spills, the super absorbent components of this economical kit are safe for use in waterways, non-toxic, and non-leaching – making them safe for proper disposal in landfills. The kit is provided in a weatherproof 30 Gallon container with screw top lid. Each kit includes:

30 GALLON LAB PACK CONTAINER WITH SCREW TOP LID

Container is constructed of high density polypropylene, incinerates completely and is chemically resistant to most materials. This drum is United Nations certified to HM-181 (1H2/X120/S) and HM-181 (1H2/Y180/S) and meets DOT 49 CFR 173.12(b) requirements. Screw-on lid with gasket provides a positive seal, creating an easy access, weatherproof container. [1 - 30 gallon container]



OUTDOOR ALL-PURPOSE ABSORBENT

Heavier absorbent formula stays down even in light windy conditions. Easily handles tough spills including oil, grease and paint. Non-toxic and environmentally friendly, this product absorbs 12 times more than clay. Each bag absorbs up to 8.5 gallons. [2 - 1.75 CF bags]



OIL SELECT ABSORBENT SOCKS

Oil select absorbent is encased in a white fabric sleeve for easy deployment and disposal. These socks remove all petroleum-based products, absorbing four times their own weight. Each sock can absorb up to 1 gallon of material. Floats on water and repels water while absorbing oils. Non-toxic and environmentally friendly. [3 - 4' x 3" socks]



UNIVERSAL ABSORBENT SOCKS

Super absorbent is encased in gray fabric sleeve for easy identification. Each sock contains and absorbs up to 1 gallon of liquid spills or leaks. Tough enough for caustic chemicals. Molds easily around barrels or machinery, preventing leaks and spills from spreading to sensitive areas. [2 - 4' x 3" socks]



OIL SELECT SECONDARY CONTAINMENT BOOM

This oil select absorbent boom floats on accumulated water in the secondary containment tank and repels water while absorbing oils, leaving only clean water behind and ensuring that pollutants are not discharged when the tank is drained. Encased in fabric, rope and netting, these rugged booms have hooks for easy attachment and removal. [1 - 6" x 15" boom]



ROCK-SOLID PAINT SOLIDIFIER

Turns unwanted paint into a disposable solid, simplifying disposal for all latex/acrylic paints. Non-toxic and eco-friendly, this bag can solidify up to 5 gallons of material. It's the best environmental option for quick, easy and safe disposal. [1 - 2 liter bag]



MEDIUM WEIGHT NITRILE GLOVES

Provides superior resistance to many physical and chemical hazards. These 14 mil, unlined green gloves with raised diamond grip are 13" long, and silicone free. [2 - pair nitrile gloves]



CONSTRUCTION SITE SPILL RESPONSE KIT

**A COPY OF THE TPDES CONSTRUCTION GENERAL PERMIT
CAN BE FOUND IMMEDIATELY BEHIND THIS PAGE.**

Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087



GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces
TPDES General Permit No. TXR150000,
effective March 5, 2018, and amended January 28, 2022

Construction sites that discharge stormwater associated with construction activity located in the state of Texas may discharge to surface water in the state only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, on March 5, 2028.

EFFECTIVE DATE: March 5, 2023

ISSUED DATE: February 27, 2023

For the Commission

TPDES GENERAL PERMIT NUMBER TXR150000
RELATING TO STORMWATER DISCHARGES ASSOCIATED WITH
CONSTRUCTION ACTIVITIES

Table of Contents

Part I.	Flow Chart and Definitions	5
Section A.	Flow Chart to Determine Whether Coverage is Required	5
Section B.	Definitions.....	6
Part II.	Permit Applicability and Coverage	12
Section A.	Discharges Eligible for Authorization.....	12
1.	Stormwater Associated with Construction Activity.....	12
2.	Discharges of Stormwater Associated with Construction Support Activities	12
3.	Non-Stormwater Discharges	12
4.	Other Permitted Discharges	13
Section B.	Concrete Truck Wash Out.....	13
Section C.	Limitations on Permit Coverage	13
1.	Post Construction Discharges.....	13
2.	Prohibition of Non-Stormwater Discharges.....	13
3.	Compliance with Water Quality Standards	14
4.	Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements	14
5.	Discharges to the Edwards Aquifer Recharge or Contributing Zone	14
6.	Discharges to Specific Watersheds and Water Quality Areas	15
7.	Protection of Streams and Watersheds by Other Governmental Entities.....	15
8.	Indian Country Lands.....	15
9.	Exempt Oil and Gas Activities	15
10.	Stormwater Discharges from Agricultural Activities.....	16
11.	Endangered Species Act.....	16
12.	Storage of High-Level Radioactive Waste	16
13.	Other	17
Section D.	Deadlines for Obtaining Authorization to Discharge	17
1.	Large Construction Activities	17
2.	Small Construction Activities	17
Section E.	Obtaining Authorization to Discharge.....	17
1.	Automatic Authorization for Small Construction Activities with Low Potential for Erosion.....	17
2.	Automatic Authorization for Small Construction Activities.....	18

3.	Authorization for Large Construction Activities	19
4.	Waivers for Small Construction Activities:.....	21
5.	Effective Date of Coverage	21
6.	Contents of the NOI	22
7.	Notice of Change (NOC)	22
8.	Signatory Requirement for NOI Forms, NOT Forms, NOC Forms, and Construction Site Notices	23
Section F. Terminating Coverage.....		24
1.	Notice of Termination (NOT) Required	24
2.	Minimum Contents of the NOT	24
3.	Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites.....	25
4.	Transfer of Day-to-Day Operational Control.....	25
Section G. Waivers from Coverage		26
1.	Waiver Applicability and Coverage.....	26
2.	Steps to Obtaining a Waiver	27
3.	Effective Date of an LREW	27
4.	Activities Extending Beyond the LREW Period.....	28
Section H. Alternative TPDES Permit Coverage.....		28
1.	Individual Permit Alternative	28
2.	General Permit Alternative	28
3.	Individual Permit Required	28
Section I. Permit Expiration.....		29
Part III. Stormwater Pollution Prevention Plans (SWP ₃)		29
Section A. Shared SWP ₃ Development		30
Section B. Responsibilities of Operators		30
1.	Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications	30
2.	Primary Operators with Day-to-Day Operational Control	31
Section C. Deadlines for SWP ₃ Preparation, Implementation, and Compliance.....		31
Section D. Plan Review and Making Plans Available		31
Section E. Revisions and Updates to SWP ₃ s		32
Section F. Contents of SWP ₃		32
Part IV. Erosion and Sediment Control Requirements Applicable to All Sites.....		43
Section A. Erosion and Sediment Controls		43
Section B. Soil Stabilization		44
Section C. Dewatering		44

Section D. Pollution Prevention Measures44

Section E. Prohibited Discharges45

Section F. Surface Outlets45

Part V. Stormwater Runoff from Concrete Batch Plants45

Section A. Benchmark Sampling Requirements46

Section B. Best Management Practices (BMPs) and SWP3 Requirements47

Section C. Prohibition of Wastewater Discharges.....50

Part VI. Concrete Truck Wash Out Requirements50

Part VII. Retention of Records.....50

Part VIII. Standard Permit Conditions..... 51

Part IX. Fees.....52

Appendix A: Automatic Authorization53

Appendix B: Storm Erosivity (EI) Zones in Texas55

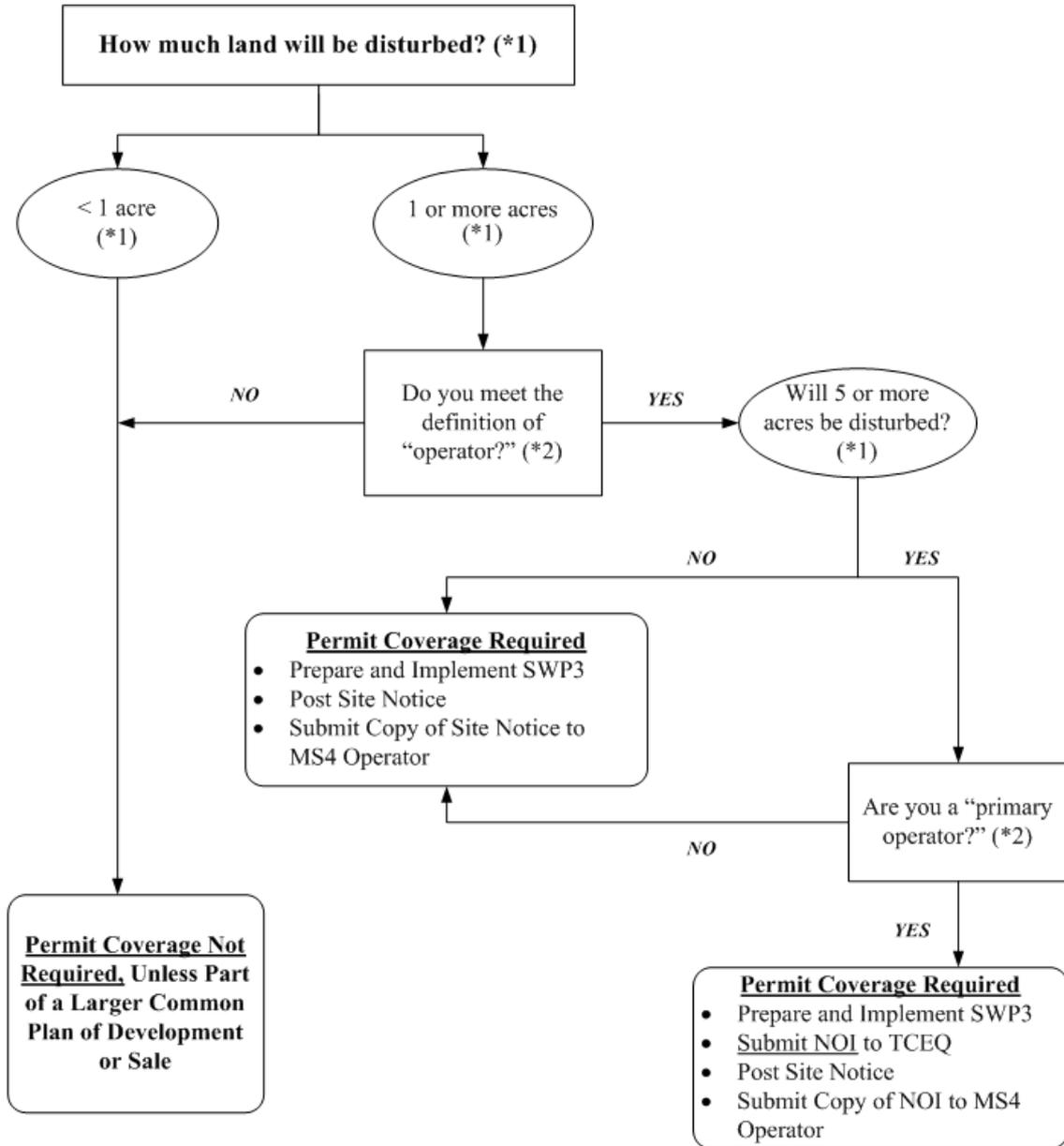
Appendix C: Isoerodent Map56

Appendix D: Erosivity Indices for EI Zones in Texas 57

Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required

When calculating the acreage of land area disturbed, include the disturbed land-area of all construction and construction support activities.



(*1) To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").

(*2) Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.

Section B. Definitions

Arid Areas – Areas with an average annual rainfall of zero (0) to ten (10) inches.

Best Management Practices (BMPs) – Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction – The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., demolition; grubbing; stockpiling of fill material; placement of raw materials at the site).

Common Plan of Development – A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a “common plan of development or sale”) is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate “common plans,” with only the interconnected parts of a project being considered part of a “common plan” (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located one quarter (1/4) mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same “common plan” is not included in the area to be disturbed.

Construction Activity – Includes soil disturbance activities, including clearing, grading, excavating, construction-related activity (e.g., stockpiling of fill material, demolition), and construction support activity. This does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing rights-of-way, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Construction Support Activity – A construction-related activity that specifically supports construction activity, which can involve earth disturbance or pollutant-generating activities of its own, and can include, but are not limited to, activities associated with concrete or asphalt batch plants, rock crushers, equipment staging or storage areas, chemical storage areas, material storage areas, material borrow areas, and excavated material disposal areas. Construction support activity must only directly support the construction activity authorized under this general permit.

Dewatering – The act of draining accumulated stormwater or groundwater from building foundations, vaults, trenches, and other similar points of accumulation.

Discharge – For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Drought-Stricken Area – For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration’s U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) “Drought to persist or intensify”, (2) “Drought ongoing, some improvement”, (3) “Drought likely to improve, impacts ease”, or (4) “Drought development likely”. See http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html.

Edwards Aquifer – As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil’s River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

Edwards Aquifer Recharge Zone – Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at <https://www.tceq.texas.gov/gis/edwards-viewer.html>

Edwards Aquifer Contributing Zone – The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at <https://www.tceq.texas.gov/gis/edwards-viewer.html>

Effluent Limitations Guideline (ELG) – Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

Facility or Activity – For the purpose of this permit, referring to a construction site, the location of construction activity, or a construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtenances used at a construction site or industrial site.

Final Stabilization – A construction site status where any of the following conditions are met:

- (a) All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, or gabions) have been employed.
- (b) For individual lots in a residential construction site by either:
 - (1) the homebuilder completing final stabilization as specified in condition (a) above; or
 - (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization. Fulfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).
- (c) For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.
- (d) In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
 - (1) temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and
 - (2) the temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

High-Level Radioactive Waste – Meaning as assigned by 42 United States Code (U.S.C.) Section 10101 (12) and includes spent nuclear fuel as defined by 42 U.S.C. Section 10101 (23).

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Impaired Water – A surface water body that is identified as impaired on the latest approved CWA § 303(d) List or waters with an EPA-approved or established total maximum daily load (TMDL) that are found on the latest EPA approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

Indian Country Land – (1) All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. (40 CFR § 122.2)

Indian Tribe – Any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation (40 CFR § 122.2).

Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices. (40 CFR § 450.11(b)).

Large Construction Activity – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

Linear Project – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

Low Rainfall Erosivity Waiver (LREW) – A written submission to the executive director from an operator of a construction site that is considered as small construction activity under the permit, which qualifies for a waiver from the requirements for small construction activities, only during the period of time when the calculated rainfall erosivity factor is less than five (5).

Minimize – To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) – A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) – A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) – A written submission to the executive director from a discharger authorized under this general permit requesting termination of coverage.

Operator – The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – The person or persons associated with construction activity that meets either of the following two criteria:

- (a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

- (b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person or entity, often the property owner, whose operational control is limited to:

- (a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or
- (b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site, where they have control over the construction plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

Outfall – For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee – An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges from construction activity.

Point Source – Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff (40 CFR § 122.2).

Pollutant – Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

Pollution – The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose (Texas Water Code (TWC) § 26.001(14)).

Rainfall Erosivity Factor (R factor) – The total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

Receiving Water – A “Water of the United States” as defined in 40 CFR § 122.2 or a surface water in the state into which the regulated stormwater discharges.

Semi-arid Areas – Areas with an average annual rainfall of 10 to 20 inches.

Separate Storm Sewer System – A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity – Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

Steep Slopes – Where a state, Tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a “steep slope”, this permit’s definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

Stormwater (or Stormwater Runoff) – Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity – Stormwater runoff, as defined above, from a construction activity.

Structural Control (or Practice) – A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State – Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization – A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Thawing Conditions – For the purposes of this permit, thawing conditions are expected based on the historical likelihood of two (2) or more days with daytime temperatures greater than 32 degrees Fahrenheit (°F). This date can be determined by looking at historical weather data.

NOTE: The estimation of thawing conditions is for planning purposes only. During construction, the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

Total Maximum Daily Load (TMDL) – The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Turbidity – A condition of water quality characterized by the presence of suspended solids and/or organic material.

Waters of the United States – Waters of the United States or waters of the U.S. means the term as defined in 40 CFR § 122.2.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

Discharges of stormwater runoff and certain non-stormwater discharges from small and large construction activities may be authorized under this general permit, except as described in Part II.C. of this permit.

2. Discharges of Stormwater Associated with Construction Support Activities

Discharges of stormwater runoff and certain non-stormwater discharges from construction support activities as defined in Part I.B. of this general permit may be authorized, provided that the following conditions are met:

- (a) the construction support activities are located within one (1) mile from the boundary of the construction site where the construction activity authorized under the permit is being conducted that requires the support of these activities;
- (b) an SWP₃ is developed and implemented for the permitted construction site according to the provisions in Part III.F. of this general permit, including appropriate controls and measures to reduce erosion and the discharge of pollutants in stormwater runoff according to the provisions in Part IV. of this general permit;
- (c) the activities are directly related to the construction site;
- (d) the activities are not a commercial operation, nor serve other unrelated construction projects; and
- (e) the activities do not continue to operate beyond the completion of the construction activity at the project it supports.

Construction support activities that operate outside the terms provided in (a) through (e) above must obtain authorization under a separate Texas Pollutant Discharge Elimination System (TPDES) permit, which may include the TPDES Multi-Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), an alternative general permit (if available), or an individual water quality permit.

3. Non-Stormwater Discharges

The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

- (a) discharges from emergency fire-fighting activities (emergency fire-fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);
 - (b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);
 - (c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where solvents, detergents, and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;
 - (d) uncontaminated water used to control dust;
 - (e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;
 - (f) uncontaminated air conditioning condensate;
 - (g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and
 - (h) lawn watering and similar irrigation drainage.
4. Other Permitted Discharges

Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

Section B. Concrete Truck Wash Out

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part VI of this general permit.

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the Notice of Termination (NOT) or removal of the appropriate TCEQ site notice, as applicable, for the regulated construction activity.

2. Prohibition of Non-Stormwater Discharges

Except as otherwise provided in Part II.A. of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

3. Compliance with Water Quality Standards

Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses of surface water in the state are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2. and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.3. of this general permit.

4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

The permittee shall determine whether the authorized discharge is to an impaired water body on the latest EPA-approved CWA § 303(d) List or waters with an EPA-approved or established TMDL that are found on the latest EPA-approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standard(s) and are listed as category 4 or 5 in the current version of the *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, and waterbodies listed on the CWA § 303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for coverage under this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (see definition for commencement of construction in Part I.B. above) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

- (a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.

- (b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule are in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.
- (c) For discharges located within ten (10) stream miles upstream of the Edwards Aquifer recharge zone, applicants shall also submit a copy of the NOI to the appropriate TCEQ regional office.

Counties: Comal, Bexar, Medina, Uvalde, and Kinney

Contact: TCEQ Water Program Manager
San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
(210) 490-3096

Counties: Williamson, Travis, and Hays

Contact: TCEQ Water Program Manager
Austin Regional Office
12100 Park 35 Circle
Room 179, Building A
Austin, Texas 78753
(512) 339-2929

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Exempt Oil and Gas Activities

The CWA § 402(l)(2) provides that stormwater discharges from construction activities related to oil and gas exploration, production, processing, or treatment, or transmission facilities are exempt from regulation under this permit. The term “oil and gas exploration, production, processing, or treatment operations, or transmission facilities” is defined in 33 U.S.C. Annotated § 1362 (24).

The exemption in CWA § 402(l)(2) *includes* stormwater discharges from construction activities regardless of the amount of disturbed acreage, which are necessary to prepare a site for drilling and the movement and placement of drilling equipment, drilling waste management pits, in field treatment plants, and in field transportation infrastructure (e.g., crude oil pipelines, natural gas treatment plants, and both natural gas transmission pipeline compressor and crude oil pumping stations) necessary for the operation of most producing oil and gas fields. Construction activities are defined in 33 U.S. Code § 1362(24) and interpreted by EPA in the final rule. *See* June 12, 2006 Amendments to the NPDES Regulations for Storm Water Discharges Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities (71 FR 33628, Part V. Terminology).

The exemption *does not include* stormwater discharges from the construction of administrative buildings, parking lots, and roads servicing an administrative building at an oil and gas site, as these are considered traditional construction activities.

As described in 40 CFR § 122.26(c)(1)(iii) [*regulations prior to 2006*], discharges from oil and gas construction activities are waived from CWA § 402(l)(2) permit coverage *unless* the construction activity (or construction support activity) has had a discharge of stormwater resulting in the discharge of a reportable quantity of oil or hazardous substances or the discharge contributes to a violation of water quality standards.

Exempt oil and gas activities which have lost their exemption as a result of one of the above discharges, must obtain permit coverage under this general permit, an alternative general permit, or a TPDES individual permit prior to the next discharge.

10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

12. Storage of High-Level Radioactive Waste

Discharges of stormwater from construction activities associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 are not authorized by this general permit. Texas Health and Safety Code (THSC) § 401.0525 prohibits TCEQ from issuing any TPDES authorizations for the construction or operation of these facilities.

Discharges of stormwater from the construction activities associated with the construction of a facility located at the site of currently or formerly operating nuclear power reactors and currently or formerly operating nuclear research and test reactors operated by a university are not prohibited under THSC § 401.0525 and continue to be regulated under this general permit.

13. Other

Nothing in Part II. of the general permit is intended to negate any person's ability to assert *force majeure* (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC § 70.7

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

- (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction – Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under the TPDES Construction General Permit (CGP) TXR150000 (effective on March 5, 2018, and amended on January 28, 2022), must submit an NOI to renew authorization or an NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim or grace period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

2. Small Construction Activities

- (a) New Construction – Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- (b) Ongoing Construction – Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that do not meet the conditions to qualify for termination of this permit as described in Part II.F. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the issued and amended 2018 TPDES CGP.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities with Low Potential for Erosion

Operators of small construction activity, as defined in Part I.B. of this general permit, shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, which occur in certain counties and during periods of low potential for erosion that do not meet the conditions of the waiver described in Part II.G. of this general permit, may be automatically authorized under this general permit if all the following conditions are met prior to the commencement of construction.

- (a) The construction activity occurs in a county and during the corresponding date range(s) listed in Appendix A;

- (b) The construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;
- (c) All temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site; the permittee signs a completed TCEQ Small Construction Site Notice for low potential for erosion (Form TCEQ-20964), including the certification statement;
- (d) A signed and certified copy of the TCEQ Small Construction Site Notice for low potential for erosion is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until final stabilization has been achieved;

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ site notice, with a viewable signature, located on-site and available for review by any applicable regulatory authority.

- (e) A copy of the signed and certified TCEQ Small Construction Site Notice for low potential for erosion is provided to the operator of any MS4 receiving the discharge at least two (2) days prior to commencement of construction activities;
- (f) Discharges of stormwater runoff or other non-stormwater discharges from any supporting concrete batch plant or asphalt batch plant is separately authorized under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and
- (g) Any non-stormwater discharges are either authorized under a separate permit or authorization, are not considered by TCEQ to be a wastewater, or are captured and routed for disposal at a publicly operated treatment works or licensed waste disposal facility.

If all of the conditions in (a) – (h) above are met, then the operator(s) of small construction activities with low potential for erosion are not required to develop a SWP3.

If an operator is conducting small construction activities and any of the above conditions (a) – (h) are not met, the operator cannot declare coverage under the automatic authorization for small construction activities with low potential for erosion and must meet the requirements for automatic authorization (all other) small construction activities, described below in Part II.E.2.

For small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available, an operator may apply for and obtain a waiver from permitting (Low Rainfall Erosivity Waiver – LREW), as described in Part II.G. of this general permit. Waivers from coverage under the LREW do not allow for any discharges of non-stormwater and the operator must ensure that discharges on non-stormwater are either authorized under a separate permit or authorization.

2. Automatic Authorization for Small Construction Activities

Operators of small construction activities as defined in Part I.B. of this general permit shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, as defined in Part I.B. of this general permit or as defined but who do not meet in the conditions and requirements located in Part II.E.1 above, may be automatically authorized for small construction activities, provided that they meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement the SWP3 prior to commencing construction activities;
- (b) all operators of regulated small construction activities must post a copy of a signed and certified TCEQ Small Construction Site Notice (Form TCEQ-20963), the notice must be posted at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, at least two (2) days prior to commencing construction activity, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);
- (c) operators must maintain a posted TCEQ Small Construction Site Notice on the approved TCEQ form at the construction site until final stabilization has been achieved; and

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Small Construction Site Notice, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

- (d) provide a copy of the signed and certified TCEQ Small Construction Site Notice to the operator of any municipal separate storm sewer system (MS4) receiving the discharge at least two (2) days prior to commencement of construction activities.
- (e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatory form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Operators for small construction activities must submit this form via mail following the instructions on the approved TCEQ paper form. A new Delegation of Signatory form must be submitted if the delegation changes to another individual or position.

As described in Part I.B of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land and must meet the requirements of Part II.E.3. below.

3. Authorization for Large Construction Activities

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site where the applicant is the operator. The SWP3 must be developed and implemented prior to obtaining coverage and prior to commencing construction activities;
- (b) primary operators of large construction activities must submit an NOI prior to commencing construction activity at a construction site. A completed NOI must be submitted to TCEQ electronically using the online ePermits system on TCEQ's website.

Operators with an electronic reporting waiver must submit a completed paper NOI to TCEQ at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the NOI is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the NOI.

If an additional primary operator is added after the initial NOI is submitted, the additional primary operator must meet the same requirements for existing primary operator(s), as indicated above.

If the primary operator changes due to responsibility at the site being transferred from one primary operator to another after the initial NOI is submitted, the new primary operator must submit an electronic NOI, unless they request and obtain a waiver from electronic reporting, at least ten (10) days prior to assuming operational control of a construction site and commencing construction activity.

- (c) all operators of large construction activities must post a TCEQ Large Construction Site Notice on the approved TCEQ form (Form TCEQ-20961) in accordance with Part III.D.2. of this permit. The TCEQ site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and must be maintained in that location until final stabilization has been achieved. For linear construction activities, e.g., pipeline or highway, the TCEQ site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public, local, state, and federal authorities;
- (d) two days prior to commencing construction activities, all primary operators must:
 - i. provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and
 - ii. list in the SWP3 the names and addresses of all MS4 operators receiving a copy;
- (e) if signatory authority is delegated by an authorized representative, then a Delegation of Signatories form must be submitted as required by 30 TAC § 305.128 (relating to Signatories to Reports). Primary operators must submit this form electronically using the State of Texas Environmental Electronic Reporting System (STEERS), TCEQ's online permitting system, or by paper if the permittee requested and obtained an electronic reporting waiver. A new Delegation of Signatories form must be submitted, if the delegation changes to another individual or position;
- (f) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or prior to commencement of construction activities, a primary operator is required to submit an NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

- (g) all secondary operators of large construction activities must post a copy of the signed and certified TCEQ Large Construction Site Notice for Secondary Operators on the approved TCEQ form (Form TCEQ-20962) and provide a copy of the signed and certified TCEQ site notice to the operator of any MS4 receiving the discharge at least two (2) days prior to the commencement construction activities.

NOTE: Posted TCEQ site notices may have a redacted signature as long as there is an original signed and certified TCEQ Large Construction Site Notice for Secondary Operators, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

Applicants must submit an NOI using the online ePermits system (accessed using STEERS) available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Waivers for Small Construction Activities:

Operators of certain small construction activities may obtain a waiver from coverage under this general permit, if applicable. The requirements are outlined in Part II.G. below.

5. Effective Date of Coverage

- (a) Operators of small construction activities as described in either Part II.E.1. or II.E.2. above are authorized immediately following compliance with the applicable conditions of Part II.E.1. or II.E.2. Secondary operators of large construction activities as described in Part II.E.3. above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.
- (b) Primary operators of large construction activities as described in Part II.E.3. above that electronically submit an NOI are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

Operators with an electronic reporting waiver are provisionally authorized 48-hours from the date that a completed paper NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. An authorization is no longer provisional when the executive director finds the NOI is administratively complete and an authorization number is issued to the permittee for the construction site indicated on the NOI.

For construction activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction activities may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

- (c) Operators are not prohibited from submitting late NOIs or posting late site notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement action for any unpermitted activities that may have occurred between the time construction commenced and authorization under this general permit was obtained.

- (d) If operators that submitted NOIs have active authorizations for construction activities that are ongoing when this general permit expires on March 5, 2028, and a new general permit is issued, a 90-day interim (grace) period is granted to provide coverage that is administratively continued until operators with active authorizations can obtain coverage under the newly issued CGP. The 90-day grace period starts on the effective date of the newly issued CGP.

6. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

- (a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;
- (b) the name, address, and telephone number of the operator filing the NOI for permit coverage;
- (c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;
- (d) the number of acres that will be disturbed by the applicant;
- (e) the estimated construction project start date and end date;
- (f) confirmation that the project or site will not be located on Indian Country lands;
- (g) confirmation if the construction activity is associated with an oil and gas exploration, production, processing, or treatment, or transmission facility (see Part II.C.9.)
- (h) confirmation that the construction activities are not associated with the construction of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72 (see Part II.C.12.);
- (i) confirmation that a SWP3 has been developed in accordance with all conditions of this general permit, that it will be implemented prior to commencement of construction activities, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;
- (j) name of the receiving water(s);
- (k) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and
- (l) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters or *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)* as not meeting applicable state water quality standards.

7. Notice of Change (NOC)

- (a) If relevant information provided in the NOI changes, the operator that has submitted the NOI must submit an NOC to TCEQ at least fourteen (14) days before the change occurs. Where a 14-day advance notice is not possible, the operator must submit an NOC to TCEQ within fourteen (14) days of discovery of the change. If the operator becomes aware that it failed to submit any relevant facts or submitted

incorrect information in an NOI, the correct information must be submitted to TCEQ in an NOC within fourteen (14) days after discovery.

- (b) Information on an NOC may include, but is not limited to, the following:
- i. a change in the description of the construction project;
 - ii. an increase in the number of acres disturbed (for increases of one (1) or more acres);
 - iii. or the name of the operator (where the name of the operator has changed).
- (c) Electronic NOC.

Applicants must submit an NOC using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. All waivers from electronic reporting are not transferrable. Electronic reporting waivers expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance. A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. Operators are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director.

- (d) Paper NOC.

Applicants who request and obtain an electronic reporting waiver shall submit the NOC on a paper form provided by the executive director, or by letter if an NOC form is not available.

- (e) A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. A list that includes the names and addresses of all MS4 operators receiving a copy of the NOC (or NOC letter) must be included in the SWP3. Information that may not be included on an NOC includes but is not limited to the following:
- i. transfer of operational control from one operator to another, including a transfer of the ownership of a company. A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing or charter number that is on record with the Texas Secretary of State (SOS) must be changed.
 - ii. coverage under this general permit is not transferable from one operator to another. Instead, the new operator will need to submit an NOI or LREW, as applicable, and the previous operator will need to submit an NOT.
 - iii. a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

8. Signatory Requirement for NOI Forms, NOT Forms, NOC Forms, and Construction Site Notices

NOI forms, NOT forms, NOC forms, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

Section F. Terminating Coverage**1. Notice of Termination (NOT) Required**

Each operator that has submitted an NOI for authorization of large construction activities under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit.

Authorization of large construction must be terminated by submitting an NOT electronically via the online ePermits system available through the TCEQ website, or on a paper NOT form to TCEQ supplied by the executive director with an approved waiver from electronic reporting. Authorization to discharge under this general permit terminates at midnight on the day a paper NOT is postmarked for delivery to the TCEQ or immediately following confirmation of the receipt of the NOT submitted electronically by the TCEQ.

Applicants must submit an NOT using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

- (a) final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
- (b) a transfer of operational control has occurred (See Section II.F.4. below); or
- (c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

Compliance with the conditions and requirements of this permit is required until the NOT is submitted and approved by TCEQ.

2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

- (a) if authorization for construction activity was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for a specific construction site;
- (b) an indication of whether final stabilization has been achieved at the site and a NOT has been submitted or if the permittee is simply no longer an operator at the site;
- (c) the name, address, and telephone number of the permittee submitting the NOT;
- (d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and
- (e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites
- (a) Each operator that has obtained automatic authorization for small construction or is a secondary operator for large construction must perform the following when terminating coverage under the permit:
- i. remove the TCEQ site notice;
 - ii. complete the applicable portion of the TCEQ site notice related to removal of the TCEQ site notice; and
 - iii. submit a copy of the completed TCEQ site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3).
- (b) The activities described in Part II.F.3.(a) above must be completed by the operator within 30 days of meeting any of the following conditions:
- i. final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
 - ii. a transfer of day-to-day operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions has occurred (See Section II.F.4. below); or
 - iii. the operator has obtained alternative authorization under an individual or general TPDES permit.

For Small Construction Sites and Secondary Operators at Large Construction Sites, authorization to discharge under this general permit terminates immediately upon removal of the applicable TCEQ construction site notice. Compliance with the conditions and requirements of this permit is required until the TCEQ construction site notice is removed. The construction site notice cannot be removed until final stabilization has been achieved.

4. Transfer of Day-to-Day Operational Control
- (a) When the primary operator of a large construction activity changes or operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions is transferred to another primary operator, the original operator must do the following:
- i. submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (c) below; and
 - ii. submit a copy of the NOT from the primary operator terminating its coverage under the permit and its operational control of the construction site and submit a copy of the NOI from the new primary operator to the operator of any MS4 receiving the discharge in accordance with Part II.F.1. above.
- (b) For transfer of operational control, operators of small construction activities and secondary operators of large construction activities who are not required to submit an NOI must do the following:
- i. the existing operator must remove the original TCEQ construction site notice, and the new operator must post the required TCEQ construction site notice prior to the transfer of operational control, in accordance with the conditions in Part II.F.4.(c) i or ii below; and

- ii. a copy of the TCEQ construction site notice, which must be completed and provided to the operator of any MS4 receiving the discharge, in accordance with Part II.F.3. above.
- (c) Each operator is responsible for determining its role as an operator as defined in Part I.B. and obtaining authorization under the permit, as described above in Part II.E. 1. - 3. Where authorization has been obtained by submitting an NOI for coverage under this general permit, permit coverage is not transferable from one operator to another. A transfer of operational control can include changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State (SOS). A transfer of operational control can also occur when one of the following criteria is met, as applicable:
- i. another operator has assumed control over all areas of the site that do not meet the definition for final stabilization;
 - ii. all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the original permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Records of this notification (or attempt at notification) shall be retained by the operator transferring operational control to another operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal; or
 - iii. a homebuilder has purchased one (1) or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements of this permit. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to the lot(s) it has operational control over in a larger common plan of development, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, when the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5).

The operator must submit a Low Rainfall Erosivity Waiver (LREW) certification form to the TCEQ electronically via the online ePermits system available through the TCEQ website. The LREW form is a certification by the operator that the small construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5).

Applicants who request and obtain an electronic reporting waiver shall submit the LREW on a paper form provided by the executive director at least seven (7) days prior to commencing construction activity to obtain provisional coverage 48-hours from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the LREW is administratively complete, and an authorization number is issued to the permittee for the construction site indicated on the LREW. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge, except for temporary waivers that expire one (1) year from issuance.

This LREW from coverage does not apply to any non-stormwater discharges, including what is allowed under this permit. The operator must ensure that all non-stormwater discharges are either authorized under a separate permit or authorization or are captured and routed to an authorized treatment facility for disposal.

2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

- (a) estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.
- (b) find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.
- (c) find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.
- (d) refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.
- (e) multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than five (5), then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: <https://lew.epa.gov/>, or using another available resource.

A copy of the LREW certification form is not required to be posted at the small construction site.

3. Effective Date of an LREW

Unless otherwise notified by the executive director, operators of small construction activities seeking coverage under an LREW are provisionally waived from the otherwise applicable requirements of this general permit 48-hours from the date that a completed paper LREW certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, made via the online ePermits system available through the TCEQ website.

Applicants seeking coverage under an LREW must submit an application for an LREW using the online ePermits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Activities Extending Beyond the LREW Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

- (a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new LREW form at least two (2) days before the end of the original waiver period; or
- (b) obtain authorization under this general permit according to the requirements for automatic authorization for small construction activities in Part II.E.2. of this permit, prior to the end of the approved LREW period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC Chapter 305 (relating to Consolidated Permits). Applications for individual permit coverage must be submitted at least 330 days prior to commencement of construction activities to ensure timely authorization. Existing coverage under this general permit should not be terminated until an individual permit is issued and in effect.

2. General Permit Alternative

Any discharges eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), as applicable.

3. Individual Permit Required

The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

- (a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;
- (b) the activity being determined to cause, has a reasonable potential to cause, or contribute to a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state; and
- (c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC § 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.

A discharger with a TCEQ compliance history rating of “unsatisfactory” is ineligible for coverage under this general permit. In that case, 30 TAC § 60.3 requires the executive director to deny or suspend an authorization to discharge under a general permit. However, per TWC § 26.040(h), a discharger is entitled to a hearing before the commission prior to having an authorization denied or suspended for having an “unsatisfactory” compliance history.

Denial of authorization to discharge under this general permit or suspension of a permittee’s authorization under this general permit for reasons other than compliance history shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC § 205.3 (relating to Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit. All authorizations that are active at the time the permit term expires will be administratively continued as indicated in Part II.I.2. below and in Part II.D.1.(b) and D.2.(b) of this permit.
2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

Part III. Stormwater Pollution Prevention Plans (SWP3)

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2. and II.E.3. of this general permit that will reach waters of the U.S. This includes discharges to MS4s and privately owned separate storm sewer systems that drain into surface water in the state or waters of the U.S.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one (1) SWP3 for a site, operators must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

An SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3., in compliance with the terms and conditions of this permit.

An SWP3 must also identify any potential sources of pollution that have been determined to cause, have a reasonable potential to cause, or contribute to a violation of water quality standards or have been found to cause or contribute to the loss of a designated use of surface water in the state from discharges of stormwater from construction activities and construction support activities. Where potential sources of these pollutants are present at a construction site, the SWP3 must also contain a description of the management practices that will be used to prevent these pollutants from being discharged into surface water in the state or waters of the U.S.

NOTE: Construction support activities can also include vehicle repair areas, fueling areas, etc. that are present at a construction site solely for the support construction activities and are only used by operators at the construction site.

The SWP3 is intended to serve as a road map for how the construction operator will comply with the effluent limits and other conditions of this permit. Additional portions of the effluent limits are established in Part IV. of the permit.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators of small and large construction activities must independently obtain authorization under this permit but may work together with other regulated operators at the construction site to prepare and implement a single, comprehensive SWP3, which can be shared by some or all operators, for the construction activities that each of the operators are performing at the entire construction site.

1. The SWP3 must include the following:
 - (a) for small construction activities – the name of each operator that participates in the shared SWP3;
 - (b) for large construction activities – the name of each operator that participates in the shared SWP3, the general permit authorization numbers of each operator (or the date that the NOI was submitted to TCEQ by each operator that has not received an authorization number for coverage under this permit); and
 - (c) for large and small construction activities – the signature of each operator participating in the shared SWP3.
2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

Section B. Responsibilities of Operators

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

All secondary operators and primary operators with control over construction plans and specifications shall:

- (a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;
- (b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;
- (c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMP s as necessary to remain compliant with the conditions of this general permit; and

- (d) ensure that the SWP3 for portions of the project where each operator has control indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If a primary operator has not been authorized or has abandoned the site, the secondary operator is considered to be the responsible party and must obtain authorization as a primary operator under the permit, until the authority for day-to-day operational control is transferred to another primary operator. The new primary operator must update or develop a new SWP3 that will reflect the transfer of operational control and include any additional updates to the SWP3 to meet requirements of the permit.

2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

- (a) meets the requirements of this general permit for those portions of the project where they are operators;
- (b) identifies the parties responsible for implementation of BMPs described in the SWP3;
- (c) indicates areas of the project where they have operational control over day-to-day activities; and
- (d) the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications for areas where they have operational control over day-to-day activities.

Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.

NOTE: The SWP3 may be prepared and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally valid with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form.

2. Operators with authorization for construction activity under this general permit must post a TCEQ site notice at the construction site at a place readily available for viewing by the general public, and local, state, and federal authorities.

- (a) Primary and secondary operators of large construction activities must each post a TCEQ construction site notice, respective to their role as an operator at the construction site, as required above and according to requirements in Part II.E.3. of this general permit.
 - (b) Primary and secondary operators of small construction activities must post the TCEQ site notice as required in Part III.D.2.(a) above and for the specific type of small construction described in Part II.E.1. and 2. of the permit.
 - (c) If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. TCEQ construction site notices for small and large construction activities at these linear construction sites may be relocated, as necessary, along the length of the project, but must still be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:
 - i. the site-specific TPDES authorization number for the project if assigned;
 - ii. the operator name, contact name, and contact phone number;
 - iii. a brief description of the project; and
 - iv. the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Revisions and Updates to SWP3s

The permittee must revise or update the SWP3, including the site map, within seven (7) days of when any of the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by construction site personnel authorized by the permittee, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must be developed and implemented by primary operators of small and large construction activities and include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part IV. of the general permit.

1. A site or project description, which includes the following information:
 - (a) a description of the nature of the construction activity;
 - (b) a list of potential pollutants and their sources;
 - (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;

- (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including areas where construction support activities (defined in Part I.B. of this general permit) occur;
- (e) data describing the soil or the quality of any discharge from the site;
- (f) a map showing the general location of the site (e.g., a portion of a city or county map);
- (g) a detailed site map (or maps) indicating the following:
 - i. property boundary(ies);
 - ii. drainage patterns and approximate slopes anticipated before and after major grading activities;
 - iii. areas where soil disturbance will occur (note any phasing), including any demolition activities;
 - iv. locations of all controls and buffers, either planned or in place;
 - v. locations where temporary or permanent stabilization practices are expected to be used;
 - vi. locations of construction support activities, including those located off-site;
 - vii. surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicate whether those waters are impaired;

NOTE: Surface waters adjacent to or in close proximity to the site means any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s).

- viii. locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;
 - ix. vehicle wash areas; and
 - x. designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).
- Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.
- (h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;
 - (i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;
 - (j) a copy of this TPDES general permit (an electronic copy of this TPDES general permit or a current link to this TPDES general permit on the TCEQ webpage is acceptable);
 - (k) the NOI and the acknowledgement of provisional and non-provisional authorization for primary operators of large construction sites, and the TCEQ site notice for small construction sites and for secondary operators of large construction sites;
 - (l) if signatory authority is delegated by an authorized representative, then a copy of the formal notification to TCEQ, as required by 30 TAC 305.128 relating to Signatories to Reports must be filed in the SWP3 and made available for review upon request by TCEQ or local MS4 Operator. For primary operators of large construction activities, the formal notification to TCEQ must be submitted either electronically through

STEERS, TCEQ's electronic reporting system, or, if qualifying for an electronic reporting waiver, by paper on a Delegation of Signatories form. For operators or small construction activities, the formal notification to TCEQ must be submitted by paper on a Delegation of Signatories form.

- (m) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site where construction support activities will occur; and
 - (n) locations of all pollutant-generating activities at the construction site and where construction support activities will occur, such as the following: Paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.
2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for installation and implementation. At a minimum, the description must include the following components:

(a) General Requirements

- i. Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- ii. Control measures must be properly selected, installed, and maintained according to good engineering practices, and the manufacturer's or designer's specifications.
- iii. Controls must be developed to minimize the offsite transport of litter, construction debris, construction materials, and other pollutants required of Part IV.D.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the construction site, where small or large construction activity will occur. The erosion control and stabilization practices selected by the permittee must be compliant with the requirements for sediment and erosion control, located in Part IV. of this permit. The description of the SWP3 must also include a schedule of when the practices will be implemented. Site plans must ensure that existing vegetation at the construction site is preserved where it is possible.

- i. Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.
- ii. The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:
 - (A) the dates when major grading activities occur;
 - (B) the dates when construction activities temporarily or permanently cease on a portion of the site; and
 - (C) the dates when stabilization measures are initiated.
- iii. Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding fourteen (14) calendar days. Stabilization

measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term “immediately” is used to define the deadline for initiating stabilization measures. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than fourteen (14) calendar days after the initiation of soil stabilization measures:

- (A) where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased due to frozen conditions, non-vegetative controls must be implemented until thawing conditions (as defined in Part I.B. of this general permit) are present, and vegetative stabilization measures can be initiated as soon as practicable.
 - (B) in arid areas, semi-arid areas, or drought-stricken areas, as they are defined in Part I.B. of this general permit, where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, other types of erosion control and stabilization measures must be initiated at the site as soon as practicable. Where vegetative controls are infeasible due to arid conditions, and within fourteen (14) calendar days of a temporary or permanent cessation of construction activity in any portion of the site, the operator shall immediately install non-vegetative erosion controls in areas of the construction site where construction activity is complete or has ceased. If non-vegetative controls are infeasible, the operator shall install temporary sediment controls as required in Part III.F.2.(b)iii.(C) below.
 - (C) in areas where non-vegetative controls are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequencies established in Part III.F.8.(c) for unstabilized sites.
 - (D) the requirement for permittees to initiate stabilization is triggered as soon as it is known with reasonable certainty that construction activity at the site or in certain areas of the site will be stopped for 14 or more additional calendar days. If the initiation or completion of vegetative stabilization is prevented by circumstances beyond the control of the permittee, the permittee must employ and implement alternative stabilization measures immediately. When conditions at the site changes that would allow for vegetative stabilization, then the permittee must initiate or complete vegetative stabilization as soon as practicable.
- iv. Final stabilization must be achieved prior to termination of permit coverage.
 - v. TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls. Controls selected by the permittee must be compliant with the requirements in Part IV. of this permit.

i. Sites With Drainage Areas of Ten (10) or More Acres

(A) Sedimentation Basin(s) or Impoundments

- (1) A sedimentation basin or similar impoundment is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin or impoundment may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin or similar impoundment. Capacity calculations shall be included in the SWP3. Sedimentation basins must be designed for and appropriate for controlling runoff at the site and existing detention or retention ponds at the site may not be appropriate.
- (2) Where rainfall data is not available, or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.
- (3) If a sedimentation basin or impoundment is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin or impoundment is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins or impoundments are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins or impoundments.
- (4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

ii. Controls for Sites with Drainage Areas Less than Ten (10) Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

- (B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP₃.
- (C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part IV.F. of this general permit.

3. Description of Permanent Stormwater Controls

A description of any stormwater control measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP₃. Permittees are responsible for the installation and maintenance of stormwater management measures, as follows:

- (a) permittees authorized under the permit for small construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site; or
- (b) permittees authorized under the permit for large construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site and prior to submission of an NOT.

4. Other Required Controls and BMPs

- (a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and dust. The SWP₃ shall include a description of controls utilized to control the generation of pollutants that could be discharged in stormwater from the site.
- (b) The SWP₃ must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.
- (c) The SWP₃ must include a description of potential pollutant sources in discharges of stormwater from all areas of the construction site where construction activity, including construction support activities, will be located, and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.
- (d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.
- (e) Permittees shall design and utilize appropriate controls in accordance with Part IV. of this permit to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.
- (f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part IV. of this general permit.
- (g) For demolition of any structure with at least 10,000 square feet of floor space that was built or renovated before January 1, 1980, and the receiving waterbody is impaired for polychlorinated biphenyls (PCBs):
 - i. implement controls to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures to precipitation and to stormwater; and

- ii. ensure that disposal of such materials is performed in compliance with applicable state, federal, and local laws.
5. Documentation of Compliance with Approved State and Local Plans
 - (a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.
 - (b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.
 - (c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.
6. Maintenance Requirements
 - (a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, as soon as the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.
 - (b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.
 - (c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
 - (d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.
7. Observation and Evaluation of Dewatering Controls Pursuant to Part IV.C. of this General Permit
 - (a) Personnel provided by the permittee must observe and evaluate dewatering controls at a minimum of once per day on the days where dewatering discharges from the construction site occur. Personnel conducting these evaluations must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site. Personnel conducting these evaluations are not required to have signatory authority for reports under 30 TAC § 305.128 (relating to Signatories to Reports).

(b) Requirements for Observations and Evaluations

- i. A report summarizing the scope of any observation and evaluation must be completed within 24-hours following the evaluation. The report must also include, at a minimum, the following:
 - (A) date of the observations and evaluation;
 - (B) name(s) and title(s) of personnel making the observations and evaluation;
 - (C) approximate times that the dewatering discharge began and ended on the day of evaluation, or if the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous (this information can be reported by personnel initiating the dewatering discharge);
 - (D) estimates of the rate (in gallons per day) of discharge on the day of evaluation;
 - (E) whether or not any indications of pollutant discharge were observed at the point of discharge (e.g., foam, oil sheen, noticeable odor, floating solids, suspended sediments, or other obvious indicators of stormwater pollution); and
 - (F) major observations, including: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.
- ii. Actions taken as a result of evaluations, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
- iii. The names and qualifications of personnel making the evaluations for the permittee may be documented once in the SWP3 rather than being included in each report.

8. Inspections of All Controls

- (a) Personnel provided by the permittee must inspect disturbed areas (cleared, graded, or excavated) of the construction site that do not meet the requirements of final stabilization in this general permit, all locations where stabilization measures have been implemented, areas of construction support activity covered under this permit, stormwater controls (including pollution prevention controls) for evidence of, or the potential for, the discharge of pollutants, areas where stormwater typically flows within the construction site, and points of discharge from the construction site.
 - i. Personnel conducting these inspections must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site.
 - ii. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128 (relating to Signatories to Reports).

(b) Requirements for Inspections

- i. Inspect all stormwater controls (including sediment and erosion control measures identified in the SWP₃) to ensure that they are installed properly, appear to be operational, and minimizing pollutants in discharges, as intended.
- ii. Identify locations on the construction site where new or modified stormwater controls are necessary.
- iii. Check for signs of visible erosion and sedimentation that can be attributed to the points of discharge where discharges leave the construction site or discharge into any surface water in the state flowing within or adjacent to the construction site.
- iv. Identify any incidents of noncompliance observed during the inspection.
- v. Inspect locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
- vi. If an inspection is performed when discharges from the construction site are occurring: identify all discharge points at the site, and observe and document the visual quality of the discharge (i.e., color, odor, floating, settled, or suspended solids, foam, oil sheen, and other such indicators of pollutants in stormwater).
- vii. Complete any necessary maintenance needed, based on the results of the inspection and in accordance with the requirements listed in Part III.F.6. above.

(c) Inspection frequencies:

- i. Inspections of construction sites must be conducted at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, unless as otherwise provided below in Part III.F.8.(c)ii. – v. below.
 - (A) If a storm event produces 0.5 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.5 inches but together produce 0.5 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.5 inches of rain or more has fallen. When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.
 - (B) If a storm event produces 0.5 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.5 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.5 inches or more of rain (i.e., only two (2) inspections would be required for such a storm event). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.
- ii. Inspection frequencies must be conducted at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized.
- iii. Inspection frequencies for construction sites, where runoff is unlikely due to the occurrence of frozen conditions at the site, must be conducted at least once every month until thawing conditions begin to occur (see definitions for thawing conditions in Part I.B.). The SWP₃ must also contain a record of the approximate beginning and ending dates of when frozen conditions occurred at the site, which resulted in inspections being conducted monthly, while those

conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

- iv. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of when drought conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
 - v. As an alternative to the inspection schedule in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.
 - vi. The inspection procedures described in Part III.F.8.(c)i. – v above can be performed at the frequencies and under the applicable conditions indicated for each schedule option, provided that the SWP3 reflects the current schedule and that any changes to the schedule are made in accordance with the following provisions: the inspection frequency schedule can only be changed a maximum of once per calendar month and implemented within the first five (5) business days of a calendar month; and the reason for the schedule change documented in the SWP3 (e.g., end of “dry” season and beginning of “wet” season).
- (d) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.8.(a) above.
- i. Inspection of linear construction sites could require the use of vehicles that could compromise areas of temporary or permanent stabilization, cause additional disturbance of soils, and result in the increase the potential for erosion. In these circumstances, controls must be inspected at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed.
 - ii. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.8.(a) above. The conditions of the controls along each inspected 0.25-mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25-mile portion to either the end of the next 0.25-mile inspected portion, or to the end of the project, whichever occurs first.

As an alternative to the inspection schedule described in Part III.F.8.(c)i. above, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

- iii. the SWP3 for a linear construction site must reflect the current inspection schedule. Any changes to the inspection schedule must be made in accordance with the following provisions:
 - (A) the schedule may be changed a maximum of one time each month;

- (B) the schedule change must be implemented at the beginning of a calendar month, and
 - (C) the reason for the schedule change must be documented in the SWP3 (e.g., end of “dry” season and beginning of “wet” season).
- (e) Adverse Conditions.
- Requirements for inspections may be temporarily suspended for adverse conditions. Adverse conditions are conditions that are either dangerous to personnel (e.g., high wind, excessive lightning) or conditions that prohibit access to the site (e.g., flooding, freezing conditions). Adverse conditions that result in the temporary suspension of a permit requirement to inspect must be documented and included as part of the SWP3. Documentation must include:
- i. the date and time of the adverse condition,
 - ii. names of personnel that witnessed the adverse condition, and
 - iii. a narrative for the nature of the adverse condition.
- (f) In the event of flooding or other adverse conditions which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable. Inspection Reports.
- i. A report summarizing the scope of any inspection must be completed within 24-hours following the inspection. The report must also include the date(s) of the inspection and major observations relating to the implementation of the SWP3. Major observations in the report must include: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.
 - ii. Actions taken as a result of inspections, including the date(s) of actions taken, must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
 - iii. The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.
- (g) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. If necessary, modify your site map to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.
9. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3. of this permit.
10. The SWP3 must include the information required in Part III.B. of this general permit.

11. The SWP3 must include pollution prevention procedures that comply with Part IV.D. of this general permit.

Part IV. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§ 125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT). The BPT are also required by and must satisfy the Effluent Limitations Guideline (ELG) permitting requirement for application of 40 CFR § 450.24 New Source Performance Standards (NSPS), 40 CFR § 450.22 Best Available Technology Economically Achievable (BAT), and 40 CFR § 450.23 Best Conventional Pollutant Control Technology (BCT).

Section A. Erosion and Sediment Controls

Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

1. control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges;
2. control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge point(s);
3. minimize the amount of soil exposed during construction activity;
4. minimize the disturbance of steep slopes;
5. minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
6. provide and maintain appropriate natural buffers around surface water in the state. Direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are infeasible and shall implement additional erosion and sediment controls to reduce sediment load;
7. preserve native topsoil at the site, unless the intended function of a specific area of the site dictates that the topsoil be disturbed or removed, or it is infeasible; and
8. minimize soil compaction. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:
 - (a) restrict vehicle and equipment use to avoid soil compaction; or
 - (b) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible.

Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

9. TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface water" for the purposes of triggering the buffer requirement in Part IV.A.(6) above.

Section B. Soil Stabilization

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding fourteen (14) calendar days. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next workday, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary stabilization must be completed no more than fourteen (14) calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.

Section C. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls to address sediment and prevent erosion. Operators must observe and evaluate the dewatering controls once per day while the dewatering discharge occurs as described in Part III.F.7. of this general permit.

Section D. Pollution Prevention Measures

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

1. minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
2. minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;
3. minimize the exposure of waste materials by closing waste container lids at the end of the workday and during storm events. For waste containers that do not have lids, where the container itself is not sufficiently secure enough to prevent the discharge of pollutants absent a cover and could leak, the permittee must provide either a cover (e.g., a tarp, plastic sheeting, temporary roof) to minimize exposure of wastes to precipitation, stormwater, and wind, or a similarly effective means designed to minimize the discharge of pollutants (e.g., secondary containment). Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use);
4. minimize exposure of wastes by implementing good housekeeping measures. Wastes must be cleaned up and disposed of in designated waste containers on days of operation at the site. Wastes must be cleaned up immediately if containers overflow;

5. minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release; and
6. minimize exposure of sanitary waste by positioning portable toilets so that they are secure and will not be tipped or knocked over, and so that they are located away from surface water in the state and stormwater inlets or conveyances.

Section E. Prohibited Discharges

The following discharges are prohibited:

1. wastewater from wash out of concrete, unless managed by an appropriate control;
2. wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
3. fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. soaps or solvents used in vehicle and equipment washing; and
5. toxic or hazardous substances from a spill or other release.

Section F. Surface Outlets

When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible. If infeasible, the permittee must provide documentation in the SWP3 to support the determination, including the specific conditions or time periods when this exception will apply.

Part V. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants present at regulated construction sites and operated as a construction support activity may be authorized under the provisions of this general permit, provided that the following requirements are met for concrete batch plant(s) authorized under this permit. Only the discharges of stormwater runoff and non-stormwater from concrete batch plants that meet the requirements of a construction support activity can be authorized under this permit (see the requirements for “Non-Stormwater Discharges” in Part II.A.3. and “Discharges of Stormwater Associated with Construction Support Activity” in Part II.A.2.).

If discharges of stormwater runoff or non-stormwater from concrete batch plants are not authorized under this general permit, then discharges must be authorized under an alternative general permit or individual permit [see the requirement in Part II.A.2.(c)].

This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

- Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease (*1)	15 mg/L	1/quarter (*2) (*3)	Grab (*4)
Total Suspended Solids (*1)	50 mg/L	1/quarter (*2) (*3)	Grab (*4)
pH	6.0 – 9.0 Standard Units	1/quarter (*2) (*3)	Grab (*4)
Total Iron (*1)	1.3 mg/L	1/quarter (*2) (*3)	Grab (*4)

(*1) All analytical results for these parameters must be obtained from a laboratory that is accredited based on rules located in 30 TAC § 25.4 (a) or through the National Environmental Laboratory Accreditation Program (NELAP). Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

(*2) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(*3) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

- January through March
- April through June
- July through September
- October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Part II.E.2., and prior to terminating coverage.

(*4) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

- (a) any additional potential sources of pollution, such as spills that might have occurred;
- (b) necessary revisions to good housekeeping measures that are part of the SWP3;
- (c) additional BMPs, including a schedule to install or implement the BMPs; and
- (d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater run-on to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

Section B. Best Management Practices (BMPs) and SWP3 Requirements

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit, which include, but are not limited to the applicable requirements located in Part III.F.8. of this general permit, as follows:

1. Description of Potential Pollutant Sources – The SWP3 must provide a description of potential sources (activities and materials) that can cause, have a reasonable potential to cause or contribute to a violation of water quality standards or have been found to cause, or contribute to, the loss of a designated use of surface water in the state in stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater discharges associated with industrial activity and non-stormwater discharges (described in Part II.A.3. of this general permit), in compliance with the terms and conditions of this general permit, including the protection of water quality, and must ensure the implementation of these practices.

The following must be developed, at a minimum, in support of developing this description:

- (a) Drainage – The site map must include the following information:
 - i. the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;
 - ii. a depiction of the drainage area and the direction of flow to the outfall(s);
 - iii. structural controls used within the drainage area(s);

- iv. the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and
 - v. the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.
- (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and precipitation and that have a potential to affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.
- (c) Spills and Leaks – A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and precipitation and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.
- (d) Sampling Data – A summary of existing stormwater discharge sampling data must be maintained, if available.
2. Measures and Controls – The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3’s “Description of Potential Pollutant Sources” from Part V.B.1. of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:
- (a) Good Housekeeping – Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.
 - i. Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.
 - ii. Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.
 - (b) Spill Prevention and Response Procedures – Areas where potential spills that can contribute pollutants to stormwater runoff and precipitation, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.
 - (c) Inspections – Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC § 305.128. Inspections of facilities in operation must be performed

once every seven (7) days. Inspections of facilities that are not in operation must be performed at a minimum of once per month. The current inspection frequency being implemented at the facility must be recorded in the SWP3. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

- (d) Employee Training – An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, and at a minimum, must consist of one (1) training prior to the initiation of operation of the concrete batch plant.
 - (e) Record Keeping and Internal Reporting Procedures – A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.
 - (f) Management of Runoff – The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.
3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following:
- (a) visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include, but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.
 - (b) based on the results of the evaluation, the following must be revised as appropriate within two (2) weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part V.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part V.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.
 - (c) the permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any

incidence(s), and the report must be signed according to 30 TAC § 305.128 (relating to Signatories to Reports).

- (d) the Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part V.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part VI of this general permit.

Part VI. Concrete Truck Wash Out Requirements

This general permit authorizes the land disposal of wash out from concrete trucks at construction sites regulated under this general permit, provided the following requirements are met. Any discharge of concrete production wastewater to surface water in the state must be authorized under a separate TCEQ general permit or individual permit.

- A.** Discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
- B.** Concrete truck wash out water shall be disposed in areas at the construction site where structural controls have been established to prevent discharge to surface water in the state, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent discharge to surface water in the state. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
- C.** Wash out of concrete trucks during rainfall events shall be minimized. The discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
- D.** The disposal of wash out water from concrete trucks, made under authorization of this general permit must not cause or contribute to groundwater contamination.
- E.** If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VII. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required in Part II.F.1. and 2. of this permit. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

- A.** a copy of the SWP3;
- B.** all reports and actions required by this permit, including a copy of the TCEQ construction site notice;
- C.** all data used to complete the NOI, if an NOI is required for coverage under this general permit; and
- D.** all records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VIII. Standard Permit Conditions

- A.** The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued (CWA and TWC), and is grounds for enforcement action, for terminating, revoking and reissuance, or modification, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (a).
- B.** Authorization under this general permit may be modified, suspended, revoked and reissued, terminated or otherwise suspended for cause, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41(f). Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for modifying, revoking and reissuing, terminating or, otherwise suspending authorization under this permit, based on rules located in TWC § 23.086, 30 TAC § 305.66, and 40 CFR § 122.41 (h). Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.
- C.** It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
- D.** Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§ 361.032-361.033 and 361.037, and 40 CFR § 122.41(i). The statement in TWC § 26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
- E.** The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
1. negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA § 402, or any requirement imposed in a pretreatment program approved under CWA §§ 402(a)(3) or 402(b)(8);
 2. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
 3. knowingly violating CWA §303 and placing another person in imminent danger of death or serious bodily injury.
- F.** All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).
- G.** Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
- H.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

- I.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- J.** The permittee shall comply with the monitoring and reporting requirements in 40 CFR § 122.41(j) and (l), as applicable.
- K.** Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §§ 136.1(c) and 122.44(i)(1)(iv).

Part IX. Fees

- A.** A fee of must be submitted along with the NOI:
 - 1. \$225 if submitting an NOI electronically, or
 - 2. \$325 if submitting a paper NOI.
- B.** Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
- C.** No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

Appendix A: Automatic Authorization

Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30	Foard: Dec. 15 - Feb. 14
Archer: Dec. 15 - Feb. 14	Gaines: Nov. 15 - Apr. 30
Armstrong: Nov. 15 - Apr. 30	Garza: Nov. 15 - Apr. 30
Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Glasscock: Nov. 15 - Apr. 30
Baylor: Dec. 15 - Feb. 14	Hale: Nov. 15 - Apr. 30
Borden: Nov. 15 - Apr. 30	Hall: Feb. 1 - Mar. 30
Brewster: Nov. 15 - Apr. 30	Hansford: Nov. 15 - Apr. 30
Briscoe: Nov. 15 - Apr. 30	Hardeman: Dec. 15 - Feb. 14
Brown: Dec. 15 - Feb. 14	Hartley: Nov. 15 - Apr. 30
Callahan: Dec. 15 - Feb. 14	Haskell: Dec. 15 - Feb. 14
Carson: Nov. 15 - Apr. 30	Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Castro: Nov. 15 - Apr. 30	Howard: Nov. 15 - Apr. 30
Childress: Dec. 15 - Feb. 14	Hudspeth: Nov. 1 - May 14
Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Hutchinson: Nov. 15 - Apr. 30
Coke: Dec. 15 - Feb. 14	Irion: Dec. 15 - Feb. 14
Coleman: Dec. 15 - Feb. 14	Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14
Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Jones: Dec. 15 - Feb. 14
Concho: Dec. 15 - Feb. 14	Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30
Cottle: Dec. 15 - Feb. 14	Kerr: Dec. 15 - Feb. 14
Crane: Nov. 15 - Apr. 30	Kimble: Dec. 15 - Feb. 14
Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	King: Dec. 15 - Feb. 14
Crosby: Nov. 15 - Apr. 30	Kinney: Dec. 15 - Feb. 14
Culberson: Nov. 1 - May 14	Knox: Dec. 15 - Feb. 14
Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30	Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Dawson: Nov. 15 - Apr. 30	Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Deaf Smith: Nov. 15 - Apr. 30	Lubbock: Nov. 15 - Apr. 30
Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	Lynn: Nov. 15 - Apr. 30
Dimmit: Dec. 15 - Feb. 14	Martin: Nov. 15 - Apr. 30
Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Mason: Dec. 15 - Feb. 14
Eastland: Dec. 15 - Feb. 14	Maverick: Dec. 15 - Feb. 14
Ector: Nov. 15 - Apr. 30	McCulloch: Dec. 15 - Feb. 14
Edwards: Dec. 15 - Feb. 14	Menard: Dec. 15 - Feb. 14
El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14	Midland: Nov. 15 - Apr. 30
Fisher: Dec. 15 - Feb. 14	Mitchell: Nov. 15 - Apr. 30
Floyd: Nov. 15 - Apr. 30	Moore: Nov. 15 - Apr. 30
	Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30
	Nolan: Dec. 15 - Feb. 14
	Oldham: Nov. 15 - Apr. 30

Construction General Permit

TPDES General Permit No. TXR150000
Appendix A

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Pecos: Nov. 15 - Apr. 30
Potter: Nov. 15 - Apr. 30
Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Randall: Nov. 15 - Apr. 30
Reagan: Nov. 15 - Apr. 30
Real: Dec. 15 - Feb. 14
Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Runnels: Dec. 15 - Feb. 14
Schleicher: Dec. 15 - Feb. 14
Scurry: Nov. 15 - Apr. 30
Shackelford: Dec. 15 - Feb. 14
Sherman: Nov. 15 - Apr. 30
Stephens: Dec. 15 - Feb. 14
Sterling: Nov. 15 - Apr. 30
Stonewall: Dec. 15 - Feb. 14
Sutton: Dec. 15 - Feb. 14

Swisher: Nov. 15 - Apr. 30
Taylor: Dec. 15 - Feb. 14
Terrell: Nov. 15 - Apr. 30
Terry: Nov. 15 - Apr. 30
Throckmorton: Dec. 15 - Feb. 14
Tom Green: Dec. 15 - Feb. 14
Upton: Nov. 15 - Apr. 30
Uvalde: Dec. 15 - Feb. 14
Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30
Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Wichita: Dec. 15 - Feb. 14
Wilbarger: Dec. 15 - Feb. 14
Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Young: Dec. 15 - Feb. 14
Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28
Zavala: Dec. 15 - Feb. 14

Appendix B: Storm Erosivity (EI) Zones in Texas

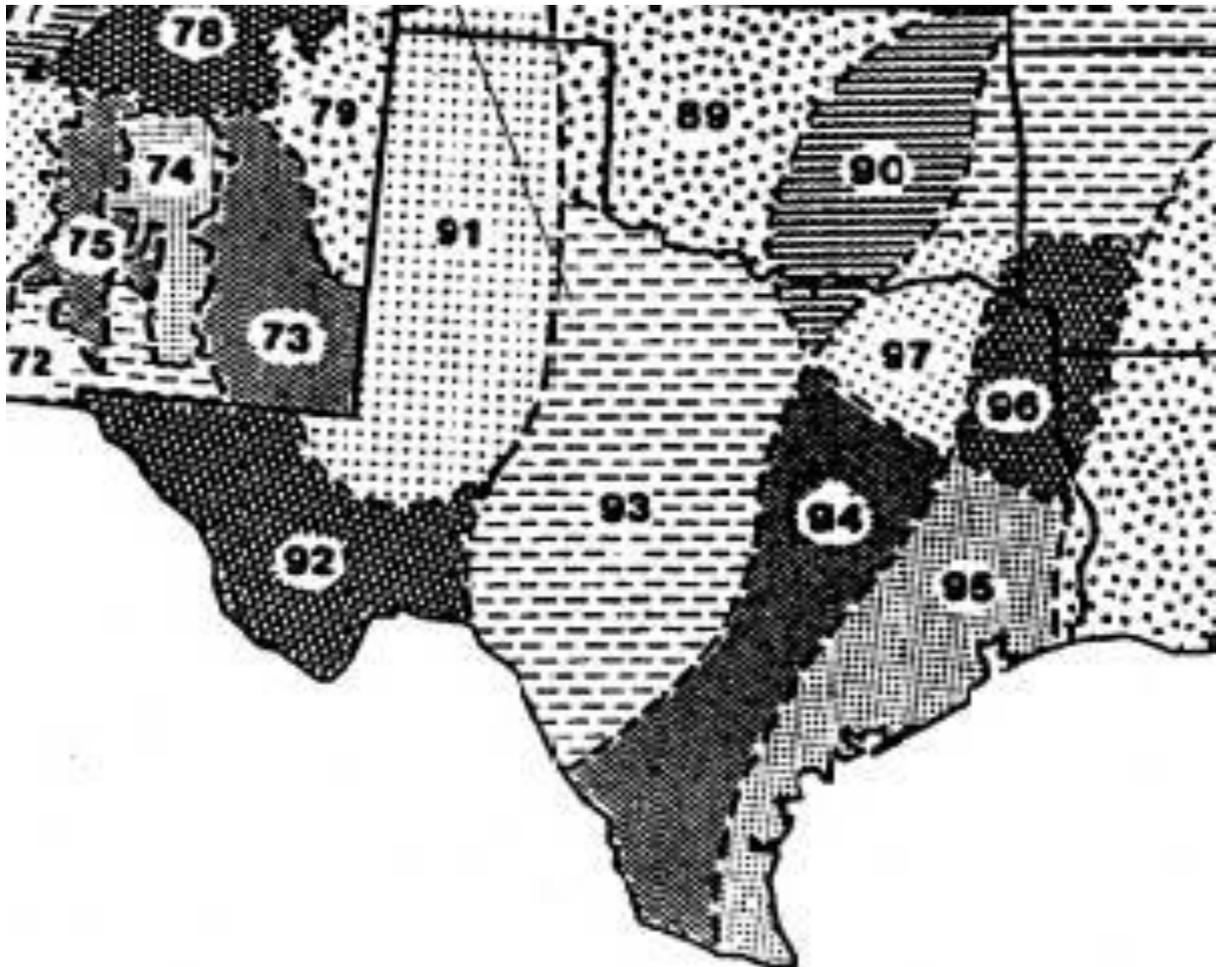


Figure B. EI Distribution Zones

Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map

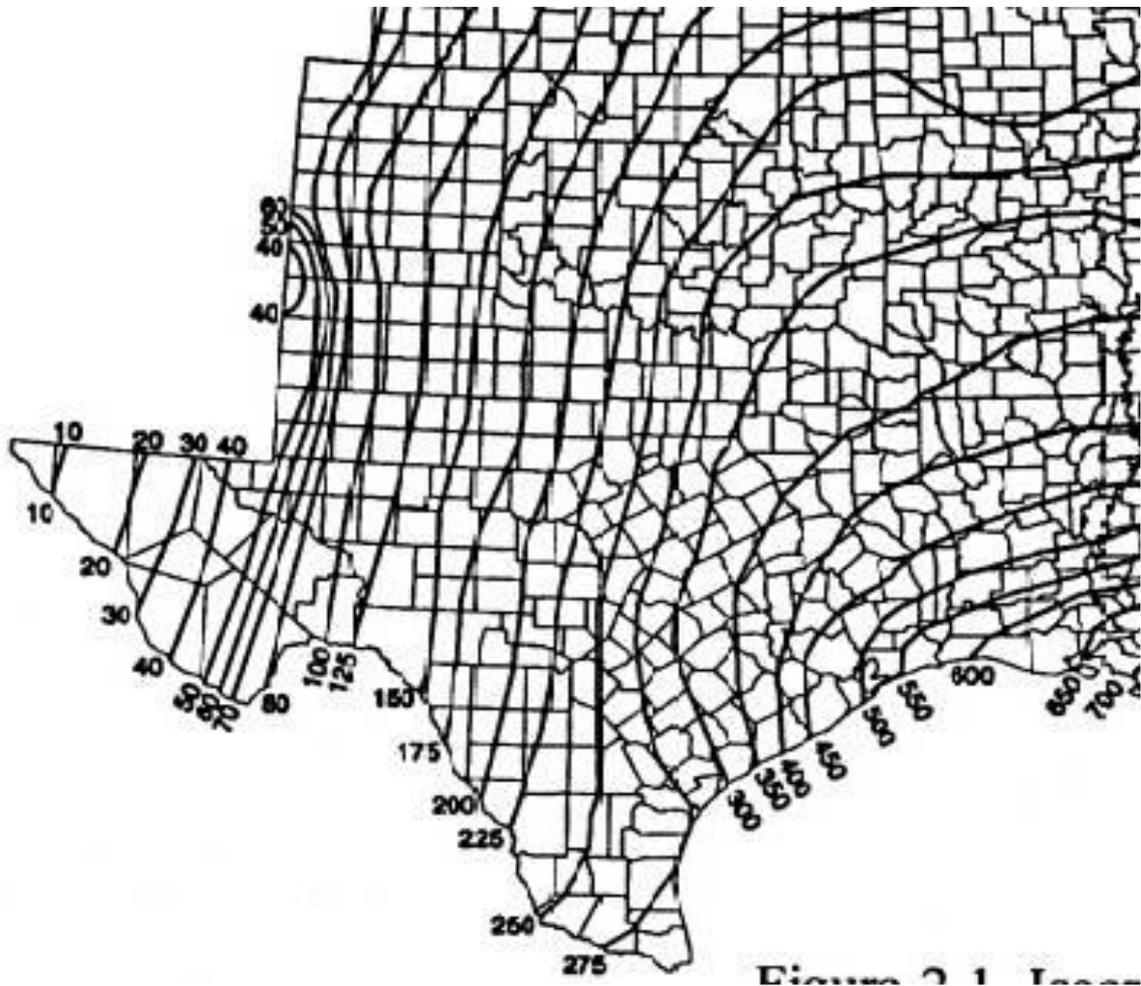


Figure C. Isoerodent Map of Texas. Units are hundreds $\text{ft} \cdot \text{tonf} \cdot \text{in} \cdot (\text{ac} \cdot \text{h} \cdot \text{yr})^{-1}$

Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Table D. EI as percentage of average annual computed selected geographic areas (EI number) by date period (month/day).

Date Periods* (Month/Day)

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

*Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service.

NOTIFICATIONS, CERTIFICATIONS AND OTHER DOCUMENTS

NOTICE OF INTENT [NOI]

A copy of the Notice of Intent (NOI) executed and filed with the TCEQ by the Primary Operator for this project is provided in this section.

CONSTRUCTION SITE NOTICE [CSN]

A copy of the Construction Site Notice(s) posted at this site are provided in this section.

NOTIFICATIONS

This site is located within the MS4 jurisdiction of Hays County. This entity has been notified of the project by means of the letter copied herein and a copy of the NOI noted above.

In accordance with the Texas General Permit, the Secondary Operator has been notified of the commencement of construction, as exhibited in the letter found in this section.

CERTIFICATIONS

Any required Certifications are located in this section.

DELEGATION OF AUTHORITY AND INSPECTOR QUALIFICATIONS

Inspection authority is delegated to _____, by an Officer of the Primary Operator entity in the document copied in this section. This Delegation Letter has also been forwarded to the TCEQ by the Operator.

The appropriate Inspector(s) qualifications are also located in this section.

RECORDS RETENTION

This SWPPP and all related documents, including the site notice, notice of intent, data used to complete the notice of intent, inspection reports, any reports and actions required by the general permit, and any records of submittal submitted to the MS4 receiving discharge and to the secondary operator, will be maintained for 3 years from the date the Notice of Termination is submitted.

STORM WATER POLLUTION PREVENTION PLAN CERTIFICATION

SWPPP INSPECTOR CERTIFICATION

Inspector Qualifications Statement

I have read and understand the Texas General Permit (TXR150000). I am familiar with this job site and have read and understand the SWPPP for this project. I also understand my obligations herein.

Additional qualifications include:

Signed: _____

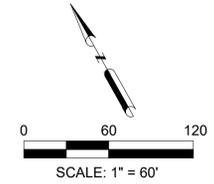
Name: _____

Title: _____

Company: _____

Date: _____

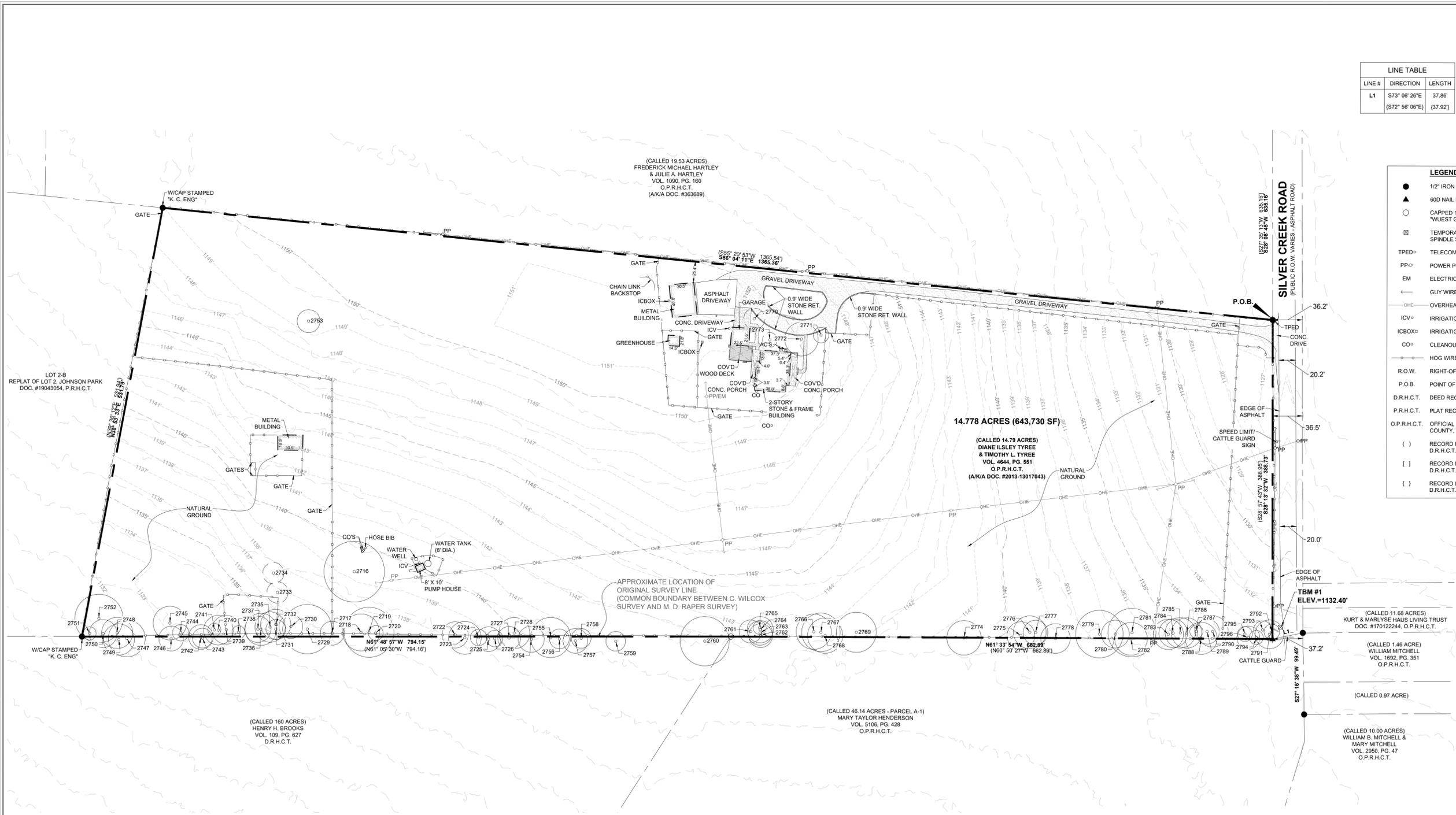
LINE #	DIRECTION	LENGTH
L1	S73° 06' 26"E	37.86'
	(S72° 56' 06"E)	(37.92')



LEGEND

- 1/2" IRON ROD FOUND (UNLESS NOTED)
- ▲ 60D NAIL FOUND
- CAPPED 1/2" IRON ROD SET STAMPED "WUEST GROUP"
- ⊠ TEMPORARY BENCHMARK (COTTON SPINDLE SET)
- TPED○ TELECOM. PEDESTAL
- PP○ POWER POLE
- EM ELECTRIC METER
- ← GUY WIRE
- OVERHEAD UTILITY LINE
- ICV○ IRRIGATION CONTROL VALVE
- ICBOX○ IRRIGATION CONTROL BOX
- CO○ CLEANOUT
- HOG WIRE FENCE
- R.O.W. RIGHT-OF-WAY
- P.O.B. POINT OF BEGINNING
- D.R.H.C.T. DEED RECORDS, HAYS COUNTY, TEXAS
- P.R.H.C.T. PLAT RECORDS, HAYS COUNTY, TEXAS
- O.P.R.H.C.T. OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS
- () RECORD INFO. PER VOL. 4644, PG. 551, D.R.H.C.T.
- [] RECORD INFO. PER VOL. 1090, PG. 160, D.R.H.C.T.
- { } RECORD INFO. PER VOL. 5106, PG. 428, D.R.H.C.T.

NO.	DATE	REVISION



EXISTING CONDITIONS

SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
ENGINEERING & SURVEYING
FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

TREE TABLE:

LO = LIVE OAK	SO = SPANISH OAK	2741 8" LO	2769 24.5" LO
2742 15" LO	2770 13" LO	2743 12" LO	2771 9.5" LO
2744 10" LO	2772 10" LO	2745 20.5" LO	2773 9" LO
2746 10", 10" LO	2774 21" LO	2747 19", 7" LO	2775 17" LO
2748 19" LO	2776 20" LO	2749 19" LO	2777 15" LO
2750 17" LO	2778 14", 8" LO	2751 8" LO	2779 29" LO
2752 29.5" LO	2780 17" LO	2753 14" LO	2781 29.5" LO
2754 12", 8" LO	2782 20" LO	2755 18", 13" LO	2783 14" LO
2756 12" LO	2784 17.5" LO	2757 15.5", 7" LO	2785 18.5" LO
2758 12" LO	2786 18.5" LO	2759 30" LO	2787 8" LO
2760 20", 20" SO	2788 18.5" LO	2761 14" LO	2789 15" LO
2762 14.5" LO	2790 19" LO	2763 15" LO	2791 14", 7" LO
2764 18" LO	2792 9.5" LO	2765 8" LO	2793 11" LO
2766 21.5" LO	2794 8.5" LO	2767 23.5" LO	2795 9" LO
2768 21.5" LO	2796 10", 8" LO	2769 10", 8" LO	

UTILITY AND IMPROVEMENT NOTE:

ONLY SURFACE EVIDENCE OF UTILITIES AND IMPROVEMENTS ARE SHOWN ON THIS SURVEY.

BEARING BASIS & HORIZONTAL DATUM:

TEXAS STATE PLANE COORDINATES, GRID NAD 83 (SOUTH CENTRAL ZONE 4204)

VERTICAL DATUM:

NAVD '88 ELEVATION DATUM

ON-SITE BENCHMARK:

TBM #1 - COTTON SPINDLE SET ON THE NORTHWEST SIDE OF SILVER CREEK ROAD APPROXIMATELY 17 FEET NORTHEAST OF THE MOST SOUTHERLY CORNER OF THE SUBJECT TRACT.
ELEV. = 11322.40'

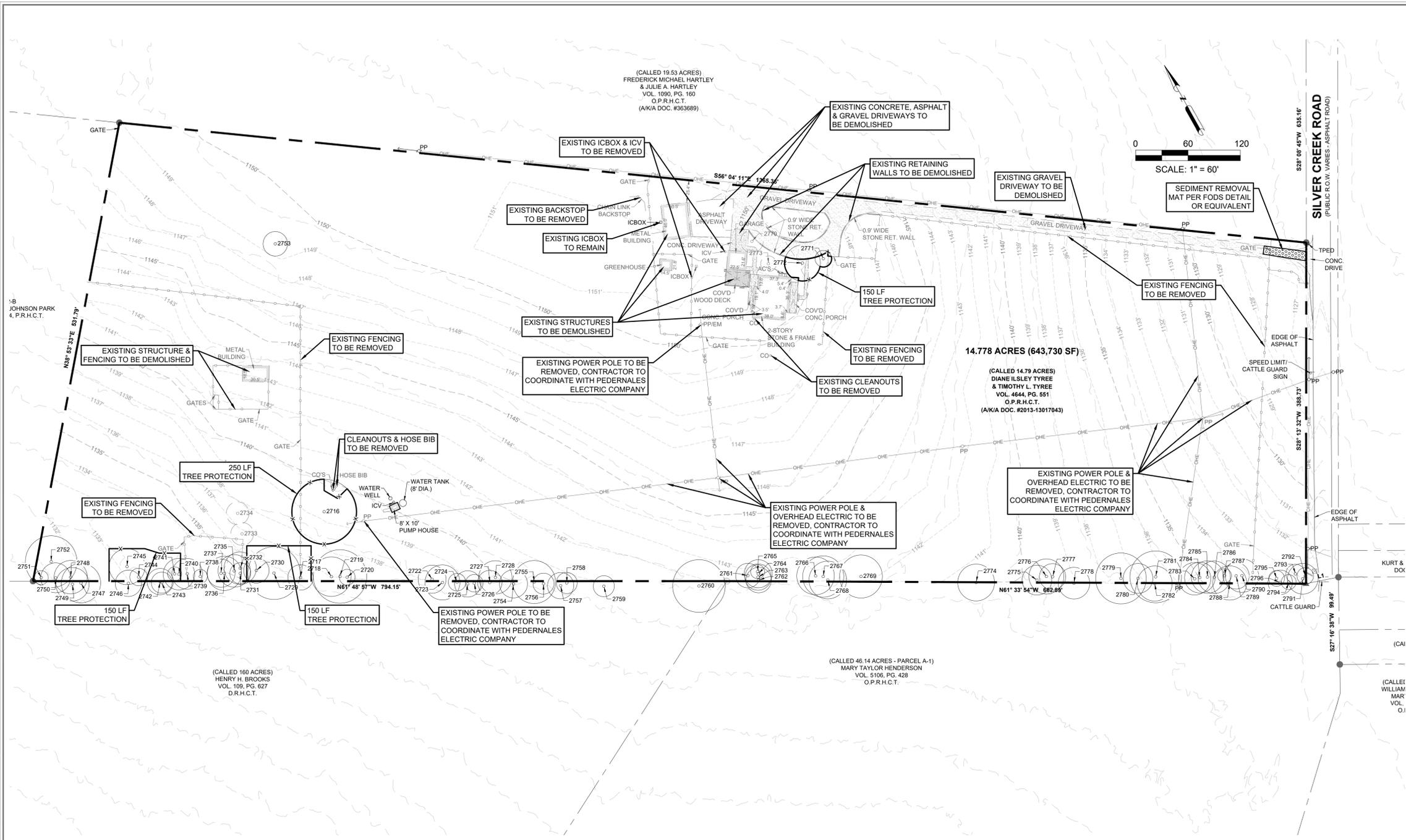
FLOODPLAIN NOTE:

THE SUBJECT TRACT IS SHOWN TO BE IN FLOOD ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS IDENTIFIED BY THE FLOOD INSURANCE RATE MAP (FIRM) PANEL NO. 48209C0106F, DATED SEPTEMBER 2, 2005, FOR COMMUNITY NO. 480321 IN HAYS COUNTY, TEXAS

THE ABOVE STATEMENT IS MEANT FOR FLOOD INSURANCE DETERMINATION ONLY AND THIS SURVEYOR ASSUMES NO LIABILITY FOR THE CORRECTEDNESS OF THE CITED MAP(S).

GENERAL NOTES:

- CONTOUR INTERVAL IS ONE (1) FOOT.
- TREE CANOPIES WERE DRAWN AT A RATIO OF 1 INCH OF TREE DIAMETER TO 1 FOOT OF CANOPY RADIUS.
- FOR TREE CANOPIES WITH MULTIPLE TRUNKS, THE TOTAL DIAMETER WAS CALCULATED BY USING THE DIAMETER OF THE LARGEST TRUNK PLUS ONE-HALF (1/2) THE DIAMETER OF EACH ADDITIONAL TRUNK.
- TREES SHOWN HEREON WERE TAGGED WITH A METAL TAG BEARING THE CORRESPONDING TREE NUMBER.
- EASEMENTS AND/OR RESTRICTIONS MAY EXIST AND AFFECT THIS TRACT WHICH ARE NOT SHOWN HEREON.



LEGEND

- 1/2" IRON ROD FOUND (UNLESS NOTED)
- ▲ 60D NAIL FOUND
- CAPPED 1/2" IRON ROD SET STAMPED "WJEST GROUP"
- ⊠ TEMPORARY BENCHMARK (COTTON SPINDLE SET)
- TPED^o TELECOM, PEDESTAL
- PP^o POWER POLE
- EM ELECTRIC METER
- GUY WIRE
- OHE OVERHEAD UTILITY LINE
- ICV^o IRRIGATION CONTROL VALVE
- ICBOX^o IRRIGATION CONTROL BOX
- CO^o CLEANOUT
- HOG WIRE FENCE
- R.O.W. RIGHT-OF-WAY
- P.O.B. POINT OF BEGINNING
- D.R.H.C.T. DEED RECORDS, HAYS COUNTY, TEXAS
- P.R.H.C.T. PLAT RECORDS, HAYS COUNTY, TEXAS
- O.P.R.H.C.T. OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS
- () RECORD INFO. PER VOL. 464, PG. 551, D.R.H.C.T.
- [] RECORD INFO. PER VOL. 1090, PG. 160, D.R.H.C.T.
- { } RECORD INFO. PER VOL. 5106, PG. 428, D.R.H.C.T.

- EXISTING BUILDING
- EXISTING BUILDING TO BE DEMOLISHED
- EXISTING STRIPING TO BE REMOVED
- EXISTING CONCRETE TO BE DEMOLISHED
- CONSTRUCTION FENCING
- SILT FENCE
- MULCH SOCK
- TREE PROTECTION
- LIMITS OF CONSTRUCTION
- STABILIZED CONSTRUCTION ENTRANCE
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED

NO.	DATE	REVISION

Caroline Ecker
06/15/2023

DEMOLITION PLAN

SILVER CREEK
12800 SILVER CREEK ROAD



WJEST GROUP
ENGINEERING & SURVEYING
FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

TREE TABLE:

2741 8" LO	2769 24.5" LO
2742 15" LO	2770 13" LO
2743 12" LO	2771 9.5" LO
2744 10" LO	2772 10" 7", 4", 3" LO
2745 20.5" LO	2773 9" LO
2746 10", 10" LO	2774 21" LO
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2748 19" LO	2776 20" LO
2749 19" LO	2777 15" LO
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UTILITY AND IMPROVEMENT NOTE:

ONLY SURFACE EVIDENCE OF UTILITIES AND IMPROVEMENTS ARE SHOWN ON THIS SURVEY.

BEARING BASIS & HORIZONTAL DATUM:

TEXAS STATE PLANE COORDINATES, GRID NAD 83 (SOUTH CENTRAL ZONE 4204)

VERTICAL DATUM:

NAVD '88 ELEVATION DATUM

ON-SITE BENCHMARK:

TBM #1 - COTTON SPINDLE SET ON THE NORTH-WEST SIDE OF SILVER CREEK ROAD APPROXIMATELY 17 FEET NORTHEAST OF THE MOST SOUTHERLY CORNER OF THE SUBJECT TRACT.
ELEV. = 11322.40'

FLOODPLAIN NOTE:

THE SUBJECT TRACT IS SHOWN TO BE IN FLOOD ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS IDENTIFIED BY THE FLOOD INSURANCE RATE MAP (FIRM) PANEL NO. 48206C0106F, DATED SEPTEMBER 2, 2005, FOR COMMUNITY NO. 480321 IN HAYS COUNTY, TEXAS

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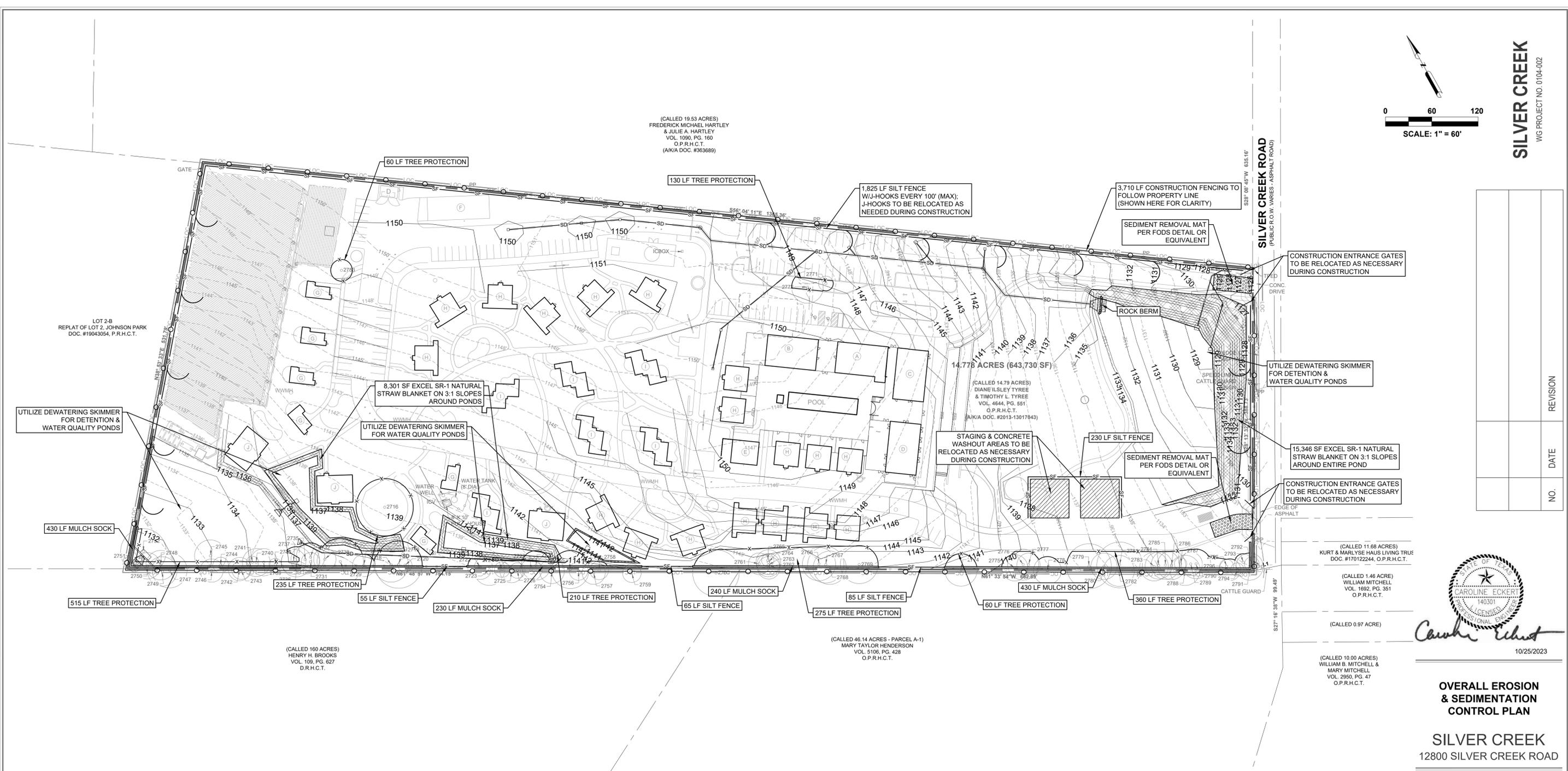
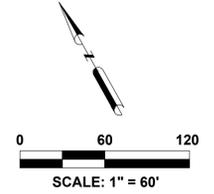
GENERAL NOTES:

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- TREES SHOWN HEREON WERE TAGGED WITH A METAL TAG BEARING THE CORRESPONDING TREE NUMBER.
- EASEMENTS AND/OR RESTRICTIONS MAY EXIST AND AFFECT THIS TRACT WHICH ARE NOT SHOWN HEREON.

NOTES:

- A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
- IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I.]
- 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. [LDC 25-8-183]
- 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. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
- WHEN INSTALLING MULCH LOG, IF DAYLIGHT CAN BE SEEN UNDER MULCH LOG DUE TO TOPOGRAPHIC CHANGES, ADD ADDITIONAL ROWS OF MULCH LOG TO CLOSE GAPS.
- CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRECONSTRUCTION MEETING, WHICH MUST COMPLY WITH ECM 1.4.4.G.

Drawing: G:\0104-King\Development\002 - 12800 Silver Creek Ref. (Dripping Springs)\CAD\Demolition Plan.dwg - Last Plotted: Thu Jun 15, 2023 - 5:59pm - By: bblanet



NO.	DATE	REVISION

(CALLED 11.68 ACRES)
KURT & MARLYSE HAUS LIVING TRUST
VOL. 171022244, O.P.R.H.C.T.

(CALLED 1.46 ACRE)
WILLIAM MITCHELL
VOL. 1692, PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)

(CALLED 10.00 ACRES)
WILLIAM B. MITCHELL &
MARY MITCHELL
VOL. 2950, PG. 47
O.P.R.H.C.T.



Caroline Eckert

10/25/2023

**OVERALL EROSION
& SEDIMENTATION
CONTROL PLAN**

SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
ENGINEERING & SURVEYING
FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
4 OF 39

- NOTES:**
1. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
 2. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I.]
 3. 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. [LDC 25-8-183]
 4. 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. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
 5. WHEN INSTALLING MULCH LOG, IF DAYLIGHT CAN BE SEEN UNDER MULCH LOG DUE TO TOPOGRAPHIC CHANGES, ADD ADDITIONAL ROWS OF MULCH LOG TO CLOSE GAPS.
 6. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRECONSTRUCTION MEETING, WHICH MUST COMPLY WITH ECM 1.4.4.G.

LEGEND	
	CONSTRUCTION FENCING
	SILT FENCE
	MULCH SOCK
	TREE PROTECTION
	LIMITS OF CONSTRUCTION
	PROPERTY LINE
	STABILIZED CONSTRUCTION ENTRANCE (1 EA)
	STRAW BLANKET
	ROCK BERM
	EXISTING TREE

Drawing: G:\0104-Krup-Development\002_12800 Silver Creek Ref. (Dripping Springs)\CAD\Erosion Control Plan.dwg, Last Plotted: Wed Oct 25, 2023 - 11:39am, By: ruzhick

Drawing: G:\0104-Krug Development\02-12800 Silver Creek Ref (Dripping Springs)\CAD\Erosion Control Plan.dwg Last Plotted: Wed Oct 25, 2023 - 11:32am By: ruzhick

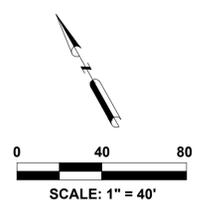


(CALLED 19.53 ACRES)
 FREDERICK MICHAEL HARTLEY
 & JULIE A. HARTLEY
 VOL. 1090, PG. 160
 O.P.R.H.C.T.
 (AK/A DOC. #363689)

LOT 2-B
 REPLAT OF LOT 2, JOHNSON PARK
 DOC. #19043054, P.R.H.C.T.

(CALLED 160 ACRES)
 HENRY H. BROOKS
 VOL. 109, PG. 627
 D.R.H.C.T.

LEGEND	
	CONSTRUCTION FENCING
	SILT FENCE
	MULCH SOCK
	TREE PROTECTION
	LIMITS OF CONSTRUCTION
	PROPERTY LINE
	STABILIZED CONSTRUCTION ENTRANCE (1 EA)
	STRAW BLANKET
	ROCK BERM
	EXISTING TREE



SILVER CREEK
 W/C PROJECT NO. 0104-002

- NOTES:**
1. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
 2. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I]
 3. 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. [LDC 25-8-183]
 4. 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. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
 5. WHEN INSTALLING MULCH LOG, IF DAYLIGHT CAN BE SEEN UNDER MULCH LOG DUE TO TOPOGRAPHIC CHANGES, ADD ADDITIONAL ROWS OF MULCH LOG TO CLOSE GAPS.
 6. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRECONSTRUCTION MEETING, WHICH MUST COMPLY WITH ECM 1.4.4.G.

NO.	DATE	REVISION

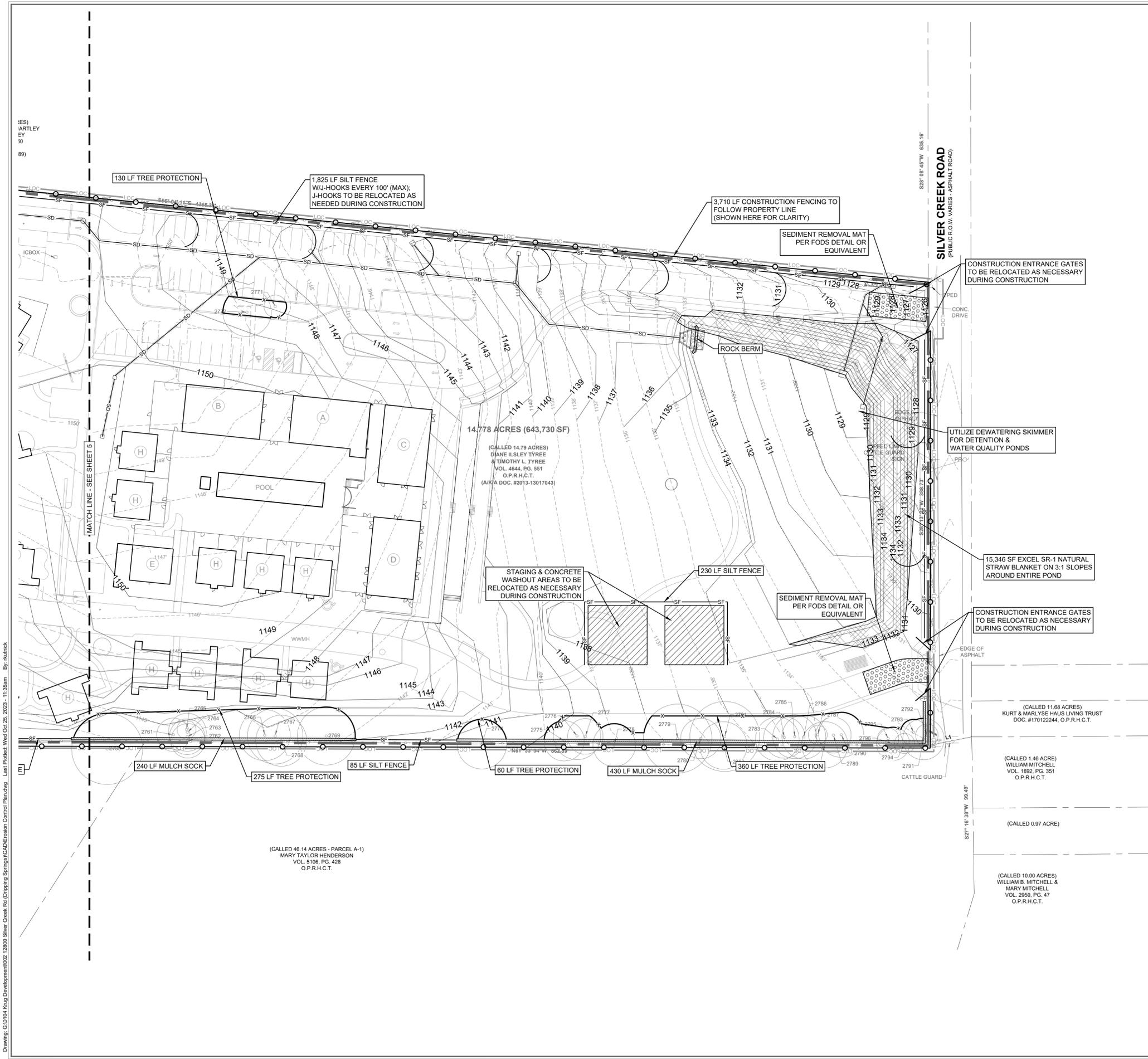


EROSION & SEDIMENTATION CONTROL PLAN A

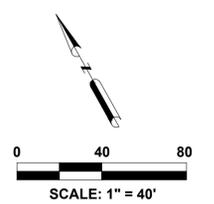
SILVER CREEK
 12800 SILVER CREEK ROAD



WUEST GROUP
 ENGINEERING & SURVEYING
 FIRM # F-15324
 5207 AIRPORT BOULEVARD
 AUSTIN, TEXAS 78751
 (512) 394-1900



LEGEND	
	CONSTRUCTION FENCING
	SILT FENCE
	MULCH SOCK
	TREE PROTECTION
	LIMITS OF CONSTRUCTION
	PROPERTY LINE
	STABILIZED CONSTRUCTION ENTRANCE (1 EA)
	STRAW BLANKET
	ROCK BERM
	EXISTING TREE



SILVER CREEK
W/C PROJECT NO. 0104-002

- NOTES:**
1. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
 2. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I]
 3. 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. [LDC 25-8-183]
 4. 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. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
 5. WHEN INSTALLING MULCH LOG, IF DAYLIGHT CAN BE SEEN UNDER MULCH LOG DUE TO TOPOGRAPHIC CHANGES, ADD ADDITIONAL ROWS OF MULCH LOG TO CLOSE GAPS.
 6. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRECONSTRUCTION MEETING, WHICH MUST COMPLY WITH ECM 1.4.4.G.

NO.	DATE	REVISION



EROSION & SEDIMENTATION CONTROL PLAN B

SILVER CREEK
12800 SILVER CREEK ROAD

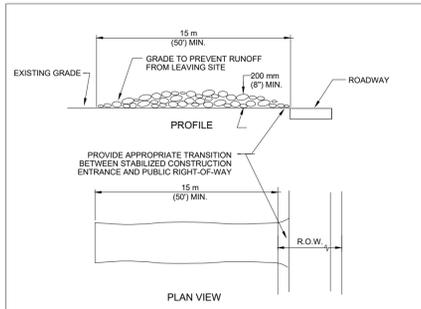


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5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

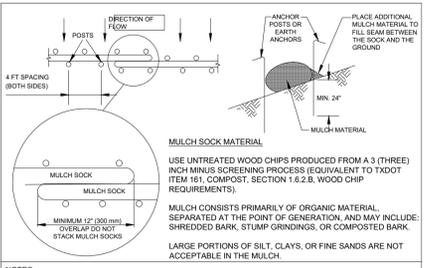
Drawing: G:\0104-King Development\002_12800 Silver Creek Ref (Dripping Springs)\CAD\Erosion Control Plan.dwg Date Plotted: Wed Oct 25, 2023 - 11:35am By: rwhack

NO.	DATE	REVISION



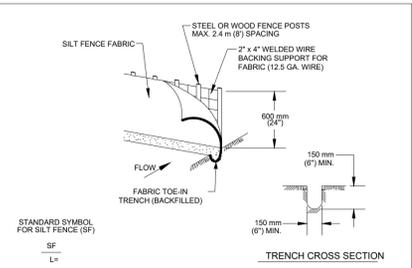
- NOTES:
- STONE SIZE: 75-125 mm (3"-5") OPEN GRADED ROAD
 - LENGTH AS EFFECTIVE BUT NOT LESS THAN 15 m (50')
 - THICKNESS: NOT LESS THAN 200 mm (8")
 - WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS
 - WASHING: AS NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO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

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY J. PATRICK MURPHY 1/2/07 ADOPTED	STABILIZED CONSTRUCTION ENTRANCE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 641S-1
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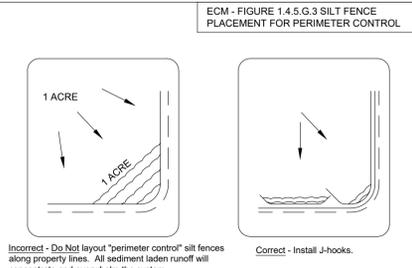
- NOTES:
- STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
 - THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OF MULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
 - MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
 - SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
 - MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.
 - ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTING.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY MORGAN BYRNE 08/24/2010 ADOPTED	MULCH SOCK THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 648S-1
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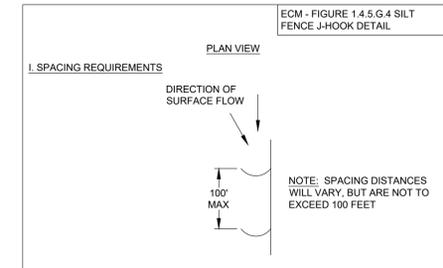
- STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 300mm (12 inches) DEPTH, USE STEEL POSTS.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
- THE TRENCH MUST BE A MINIMUM OF 150mm (6 inches) DEEP AND 150mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE FABRIC SHOULD BE SECURELY PASTED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
- INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTING.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY MORGAN BYRNE 09/01/2011 ADOPTED	SILT FENCE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 642S-1
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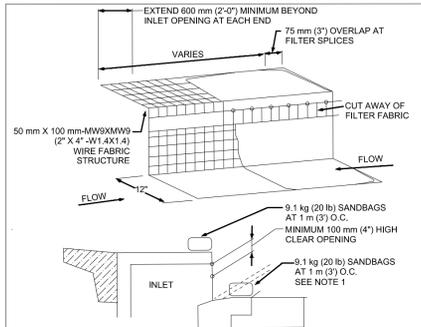
- Incorrect - Do Not layout "perimeter control" silt fences along property lines. All sediment laden runoff will concentrate and overwhelm the system.
- Correct - Install J-hooks.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY MORGAN BYRNE 09/01/2011 ADOPTED	SILT FENCE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 642S-1
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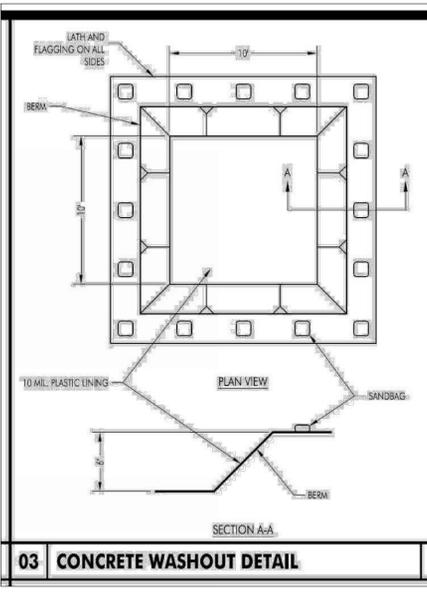
- NOTE: SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET
- UP - GRADIENT SILT FENCE AND J-HOOK ARE ONE CONTINUOUS LINE
- START DOWN-GRADIENT SILT FENCE LINE AS CLOSE AS POSSIBLE TO THE UP-GRADIENT J-HOOK
- NOTE: J-HOOKS SHALL ALSO BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY MORGAN BYRNE 09/01/2011 ADOPTED	SILT FENCE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 642S-1
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- NOTES:
- TO HOLD THE FILTER DIKE IN PLACE, 9.1 KG (20 LB) SANDBAGS BE USED AT 1 m (3') O.C. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 25 mm x 100 mm (1" x 4") BOARD, SECURED WITH 1/2" OR 3/4" CONCRETE SCREWS. THE 1/2" OR 3/4" CONCRETE SCREWS SHALL BE ATTACHED TO THE GUTTER BY DRILLING AN APPROPRIATE PILOT HOLE WITH A CONCRETE BIT AND INSERT PLASTIC FASTENERS. THE TOP OF THE SCREEN SHALL BE RECESSED BELOW THE TOP OF THE BOARD. THE SCREWS SHALL BE PLACED ON 1 m (3') O.C. THIS METHOD IS USED IN LIEU OF SANDBAGS IN THE GUTTER ONLY. TO HOLD THE FILTER DIKE IN PLACE, UPON REMOVAL, EITHER LEAVE THE PLASTIC FASTENERS IN PLACE, OR REMOVE THE PLASTIC FASTENERS. CLEAN ANY DIRT/DEBRIS FROM THE SCREW LOCATIONS. APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH THE SURFACE OF THE GUTTER. THIS METHOD SHALL NOT BE USED ON THE INLET IN THE LIEU OF SANDBAGS.
 - A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOE RINGS AT THIS LOCATION.
 - DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 50 mm (2").
 - CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTION IF THE STORM WATER BEGINS TO OVERTOP THE CURB.
 - INLET PROTECTION SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED BY AUSTIN FILTER DIKE CURB INLET PROTECTION

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY HEVY CASAS 1/2/07 ADOPTED	FILTER DIKE CURB INLET PROTECTION THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 628S-2
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CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY HEVY CASAS 1/2/07 ADOPTED	FILTER DIKE CURB INLET PROTECTION THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 628S-2
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CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY HEVY CASAS 1/2/07 ADOPTED	FILTER DIKE CURB INLET PROTECTION THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 628S-2
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DIRTBAG PUMPED SEDIMENT REMOVAL SYSTEM

RETAINS THE SILT, SAND AND FINES WHILE ALLOWING THE FILTERED WATER TO DRAIN OUT INTO THE DRAINAGE SYSTEM.

Protect the environment effectively and economically with DIRTbag®. Collect sand, silt and fines. Avoid stinging streams, surrounding property and storm sewers. As more and more emphasis is put on saving our wetlands, regulations are becoming more stringent regarding the pumping of dirty water from holes around construction sites such as foundations, pipe line construction, repairing municipal water/sewer lines, marine construction, utility, highway and site development areas. ACF can make custom DIRTbags® to suit your needs. We can produce the size, dimension, or use the fabric weight you request.

Use Recommendations

ACF Environmental manufactures DIRTbag® using a variety of woven and non-woven geotextile fabrics. The fabric properties on the Specifications page affirm the strength of DIRTbag® and are a result of tests conducted at on-site laboratories at the geotextile factory. All test methods are ASTM or industry standards.

Each standard DIRTbag® has a fill spout large enough to accommodate a 4" discharge hose. Straps are attached to secure the hose and prevent DIRTbag® water from escaping without being filtered.

Snap the neck of DIRTbag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or haybale bed to maximize water flow through the surface area of the bag.

DIRTbag® is full when it no longer can efficiently filter sediment or pass water at a reasonable rate. Flow rates will vary depending on the size of DIRTbag®, the type and amount of sediment discharged into DIRTbag®, the type of ground, rock or other substance under the bag. Under most circumstances DIRTbag® will accommodate flow rates of 500 gallons per minute. Use of excessive flow rates or overflowing DIRTbag® with sediment will cause rupture of the bags or failure of the hose attachment straps. DIRTbag® must be monitored during use.

DIRTbag® and DIRTbag® Tube are also available from ACF.

80% SPECIFICATIONS

1.0 Description

1.1 This work shall consist of furnishing, placing and removing DIRTbag® pumped sediment control device as directed by the design engineer or as shown on the contract drawings. DIRTbag® pumped sediment control system is marked by:

ACF Environmental
1001 Central Blvd.
Riverside, VA 22324
Phone: 804.486.5486
Fax: 804.743.7779

2.0 Materials

2.1 DIRTbag®

2.1.1 The DIRTbag® shall be manufactured using a polypropylene 8 oz. non-woven geotextile woven into a bag with a double needle, using a high strength thread.

2.1.2 Each standard DIRTbag® has a fill spout large enough to accommodate a 4" discharge hose. Straps are attached to secure the hose and prevent pumped water from escaping without being filtered.

2.1.3 The non-woven geotextile shall meet or exceed the following properties:

Property	Test Method	Units	Test Results
Weight	ASTM D-3776	oz/yd ²	8
Grab Tensile	ASTM D-4632	lb	255
CBR Tensile	ASTM D-5281	lb	505
Flow Rate	ASTM D-4491	gal/min/ft ²	50
Permeability	ASTM D-4491	sec. ⁻¹	1.4
UV Resistance	ASTM D-4255	%	70
ACS % retained	ASTM D-4751	US Sieve	80

2.1.4 DIRTbag® Testing Results

Property	Test Method	Test Results
Overall Bag Removal Efficiency	ASTM D-7880	97.55%

All properties are Minimum Average Roll Value (MARV) except the weight of the fabric, which is given for information purposes only. Depending on soil conditions and filtration requirements, additional geotextile options are available. Please call our engineering staff for solutions.

2.2 Construction Sequence

3.1.1 To install DIRTbag® on a slope so that incoming water flows downhill through DIRTbag® without creating more erosion, strap the neck of the DIRTbag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or hay bale bed to maximize water flow through the surface area of the bag.

3.1.2 DIRTbag® is full when it no longer can efficiently filter sediment or allow water to pass at a reasonable rate. Flow rates will vary depending on the size of the DIRTbag®, the type and amount of sediment discharged into the DIRTbag®, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies. Under most circumstances, the DIRTbag® will accommodate flow rates of 500 gallons per minute. Use of excessive flow rates or overflowing DIRTbag® with sediment will cause the bag to rupture or will cause failure of the hose attachment straps.

DIRTbag® must be monitored during use!

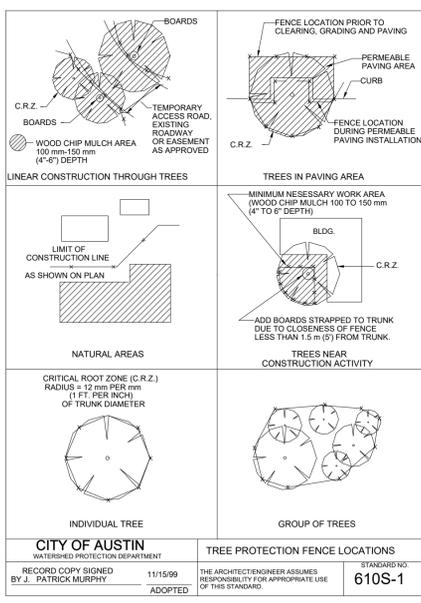
3.1.3 Dispose DIRTbag® as directed by the site engineer. If allowed, DIRTbag® may be cut open and the contents sealed after removing visible fabric. DIRTbag® is strong enough to be filled with optional straps if it must be hauled away. Off site disposal may be facilitated by placing the DIRTbag® in the back of a dump truck or loaded prior to use and allowing the water to drain from the bag while in place, thereby eliminating the need to lift the DIRTbag®.

ACF Environmental is not liable for failures or misuse of DIRTbag®.

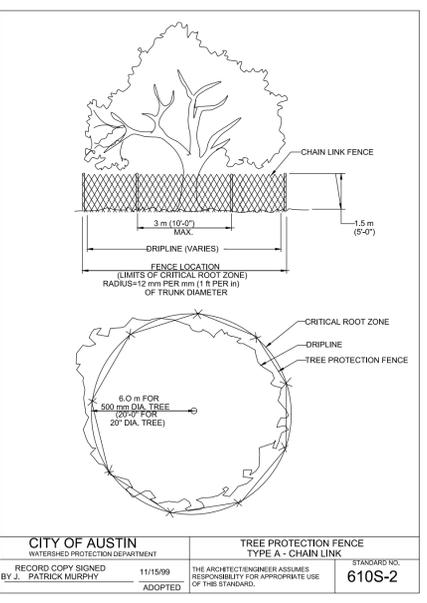
2 X 4 MAT CONFIGURATION

PLACING H-BRACKETS
CONNECTING SHORT STRAPS
CONNECTING LONG STRAPS

DIRTBAG® AND DIRTBAG® TUBE ARE ALSO AVAILABLE FROM ACF.



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	TREE PROTECTION FENCE LOCATIONS THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 610S-1
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CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	TREE PROTECTION FENCE TYPE A - CHAIN LINK THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 610S-2
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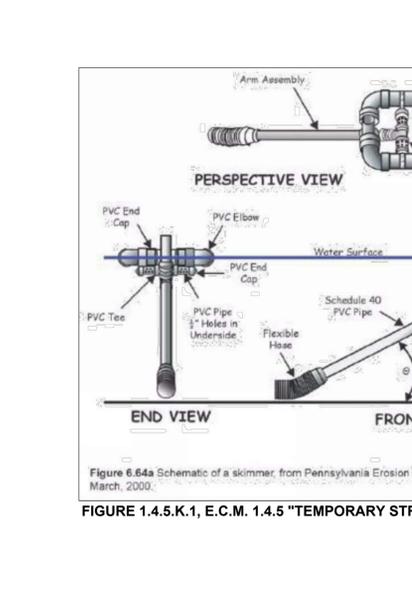


FIGURE 1.4.5.K.1, E.C.M. 1.4.5 "TEMPORARY STRUCTURAL PRACTICES"

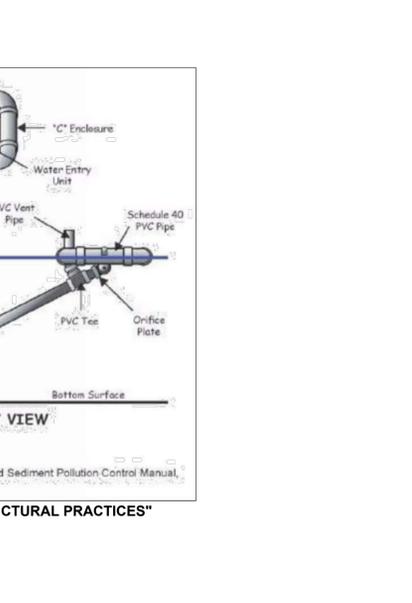


FIGURE 1.4.5.K.1, E.C.M. 1.4.5 "TEMPORARY STRUCTURAL PRACTICES"



FIGURE 1.4.5.K.1, E.C.M. 1.4.5 "TEMPORARY STRUCTURAL PRACTICES"

EROSION CONTROL DETAILS

SILVER CREEK

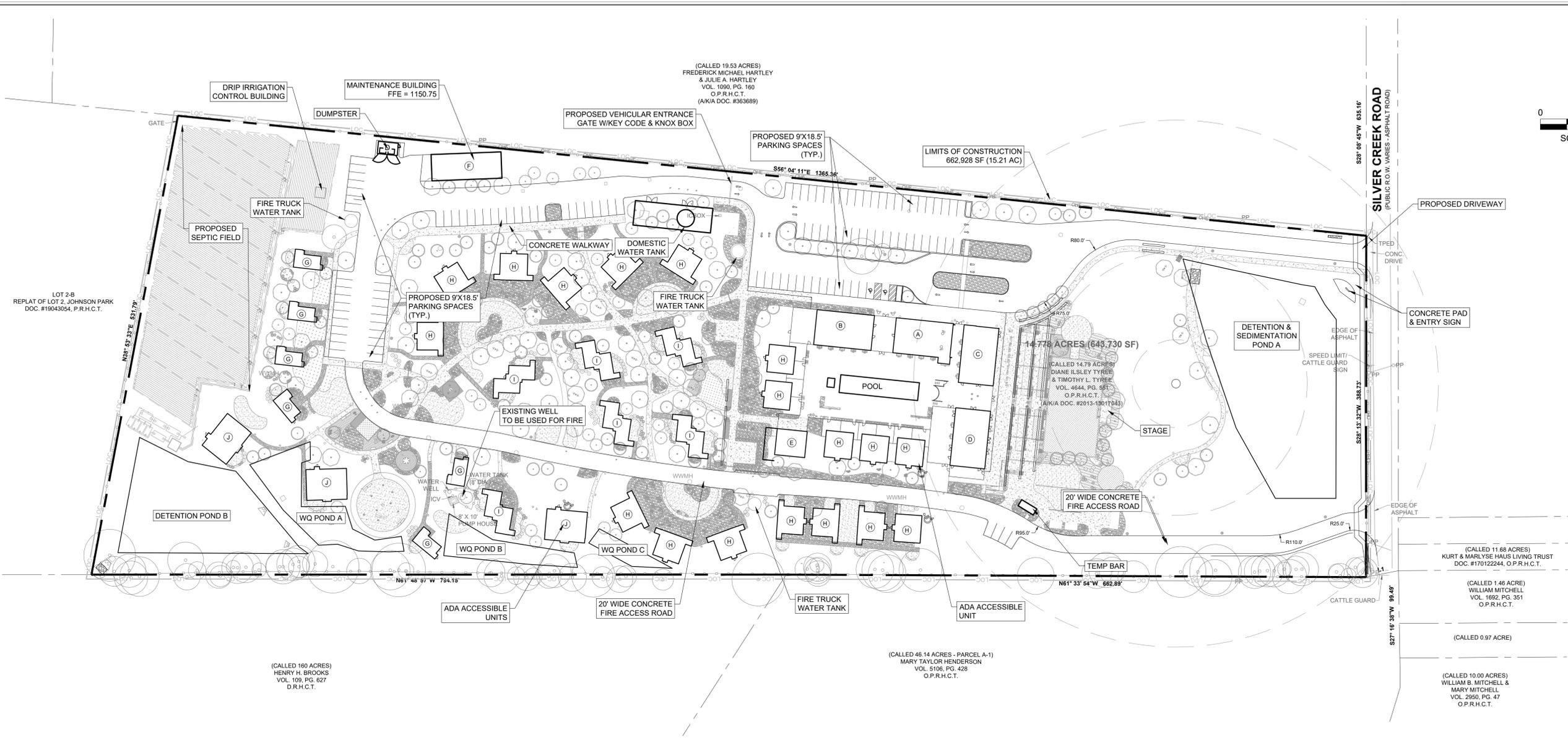
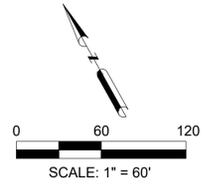
12800 SILVER CREEK ROAD

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AUSTIN, TEXAS 78751
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SHEET
8 OF 39

06/15/2023



NO.	DATE	REVISION



	CURB AND GUTTER
	BUILDING FOOTPRINT
	CONCRETE
	PROPERTY LINE
	EXISTING TREE TO REMAIN
	PROPOSED PARKING
	PROPOSED PLANTING

NET SITE AREA = GROSS SITE AREA = 643,730 S.F. (14.8 AC)				
MAX IC = 35% PER 22.05.016(A)(2)				
LIMITS OF CONSTRUCTION AREA = 15.2 AC				
IMPERVIOUS COVER	EXISTING	PROPOSED	TOTAL	
BUILDING & COVERED WALKS	4,527 sf 0.7%	47,923 sf	47,923 sf	7.4%
CONCRETE/PAVERS	12,818 sf 2.0%	143,721 sf	143,721 sf	22.3%
ASPHALT	2,076 sf 0.3%	0 sf	0 sf	0.0%
WOOD DECK	252 sf 0.0%	0 sf	0 sf	0.00%
TOTAL	19,673 sf 3.0%	191,644 sf	191,644 sf	29.8%
	<i>Existing</i>		<i>Proposed</i>	
PERVIOUS COVER	624,057 sf 96.9%		452,087 sf	70.2%

Building	
A.	Reception/Lobby (ref. A-108)
B.	Wellness Center (ref. A-109)
C.	Restaurant/Bar (ref. A-110)
D.	Event Room (ref. A-111)
E.	Changing Rooms (ref. A-112)
F.	Maintenance Building (ref. A-113)
G.H.I.	54 Studio Units (ref. FBH approved sets)
J.	3 Executive Units (ref. FBH approved set)

OVERALL SITE PLAN

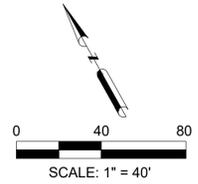
SILVER CREEK
12800 SILVER CREEK ROAD

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AUSTIN, TEXAS 78751
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SHEET
9 OF 39

Drawing: G:\0104-Krug Development\002_12800 Silver Creek Ref (Dripping Springs)\CAD\Site Plan.dwg, Last Printed: Fri, Oct 20, 2023, 11:26am, By: nathack



SILVER CREEK
W/C PROJECT NO. 0104-002

LEGEND	
	PROPOSED CURB AND GUTTER
	BUILDING FOOTPRINT
	CONCRETE
	PROPERTY LINE
	EXISTING TREE TO REMAIN
	PROPOSED PARKING
	PROPOSED PLANTING
	PARKING COUNT

NO.	DATE	REVISION



SITE PLAN A

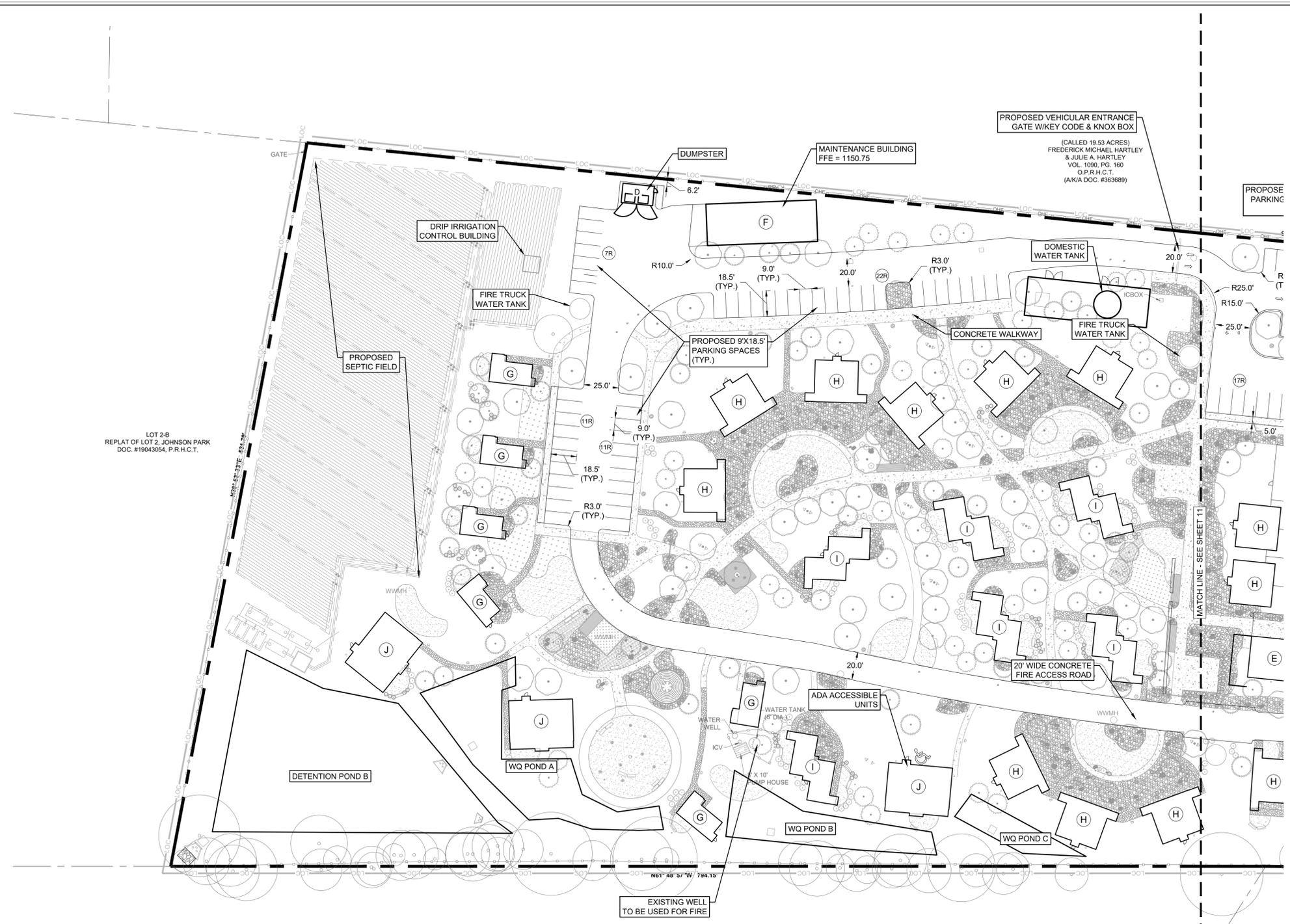
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SHEET
10 OF 39

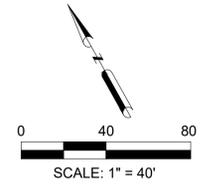


(CALLED 160 ACRES)
HENRY H. BROOKS
VOL. 109, PG. 627
D.R.H.C.T.

(CALLED 19.93 ACRES)
FREDERICK MICHAEL HARTLEY
& JULIE A. HARTLEY
VOL. 1090, PG. 160
O.P.R.H.C.T.
(AK/A DOC. #363689)

LOT 2-B
REPLAT OF LOT 2, JOHNSON PARK
DOC. #19043054, P.R.H.C.T.

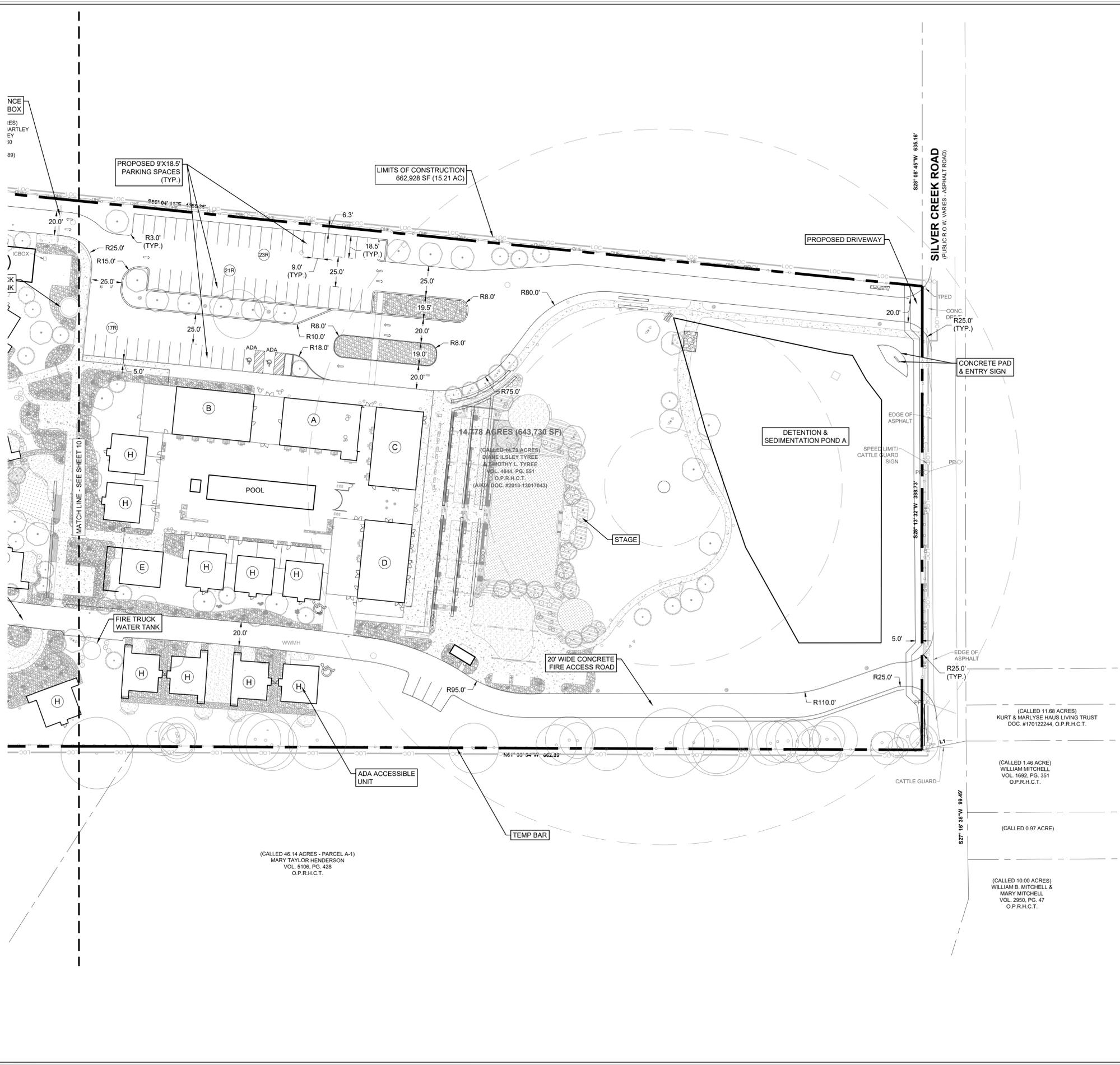
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SILVER CREEK
W/C PROJECT NO. 0104-002

LEGEND	
	PROPOSED
	CURB AND GUTTER
	BUILDING FOOTPRINT
	CONCRETE
	PROPERTY LINE
	EXISTING TREE TO REMAIN
	PROPOSED PARKING
	PROPOSED PLANTING
	PARKING COUNT

NO.	DATE	REVISION



SITE PLAN B

SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
ENGINEERING & SURVEYING

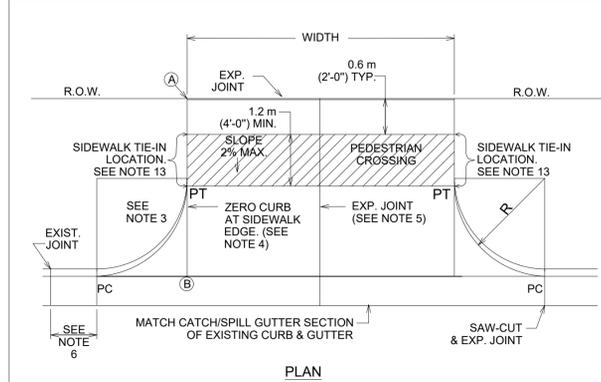
FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
11 OF 39

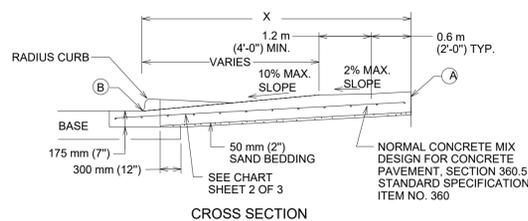
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GENERAL CONSTRUCTION NOTES

- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF AUSTIN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
- CONTRACTOR SHALL CALL TEXAS 811 (811 OR 1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.
- CONTRACTOR SHALL NOTIFY THE CITY OF AUSTIN- SITE AND SUBDIVISION DIVISION TO SUBMIT REQUIRED DOCUMENTATION, PAY CONSTRUCTION INSPECTION FEES, AND TO SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS MEETING MUST BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W. OR PUBLIC EASEMENTS. PLEASE VISIT [HTTP://AUSTINTEXAS.GOV/PAGE/COMMERCIAL-SITE-AND-SUBDIVISION-INSPECTIONS](http://austintexas.gov/page/commercial-site-and-subdivision-inspections) FOR A LIST OF SUBMITTAL REQUIREMENTS, INFORMATION CONCERNING FEES, AND CONTACT INFORMATION.
- FOR SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)
- ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
- UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
 - RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT (INSIDE THE CITY LIMITS), OR
 - INSTALLATION OF AN ELECTRIC OR WATER METER (IN THE FIVE-MILE ETJ).
- RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL, SHALL BE ENGINEERED AND WILL REQUIRE A SEPARATE PERMIT.

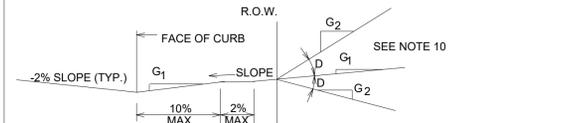


NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT A ABOVE POINT B IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (1/2" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS



DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE	
	STD.	MAX.
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

- NOTES:
- ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
 - DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE. SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 "DRIVEWAYS".
 - THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
 - "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
 - PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
 - IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
 - IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
 - TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 50% OF PARCEL FRONTAGE AT 30 METERS (100 FEET), WHICHEVER IS LESS.
 - DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
 - WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%".
 - USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDDWIDTH, SEE NOTE 5.
 - SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
 - THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
 - WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

CURB AND GUTTER

LAYDOWN/RIBBON CURB OR NO CURB AND GUTTER

NOTE:

- ALL CURBS TOUCHING THE FIRE LANE AS SHOWN ON THE STRIPING PLAN SHALL BE STRIPED AS SHOWN ON THIS DETAIL.
- TOP AND FACE OF CURB PAINTED RED. WITH 3" - 4" HIGH WHITE LETTERS ON FACE OF CURB "FIRE LANE - NO PARKING - TOW AWAY ZONE" EVERY 50'
- NO PAINT ON GUTTERS, PAVEMENT OR LAYDOWN CURBS.
- SIGNAGE MAY BE REQUIRED IN AREAS WHERE THE CURB FOR A FIRE LANE DOES NOT EXIST.
- WHERE REQUIRED, SIGNS SHALL COMPLY WITH SECTION D103.6 OF THE INTERNATIONAL FIRE CODE.

**CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS**

RECORD COPY SIGNED
BY CUONG TRAN

02/24/10
ADOPTED

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR APPROPRIATE USE
OF THIS STANDARD.

FIRE LANE MARKINGS

900-FLM-HC

N.T.S. STANDARD DETAIL

SILVER CREEK
WCG PROJECT NO. 0104-002

NO.	REVISION



Caroline Ecker

06/15/2023

SITE PLAN NOTES & DETAILS

SILVER CREEK
12800 SILVER CREEK ROAD

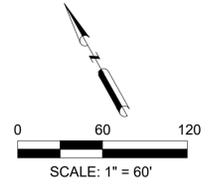


**WUEST GROUP
ENGINEERING & SURVEYING**

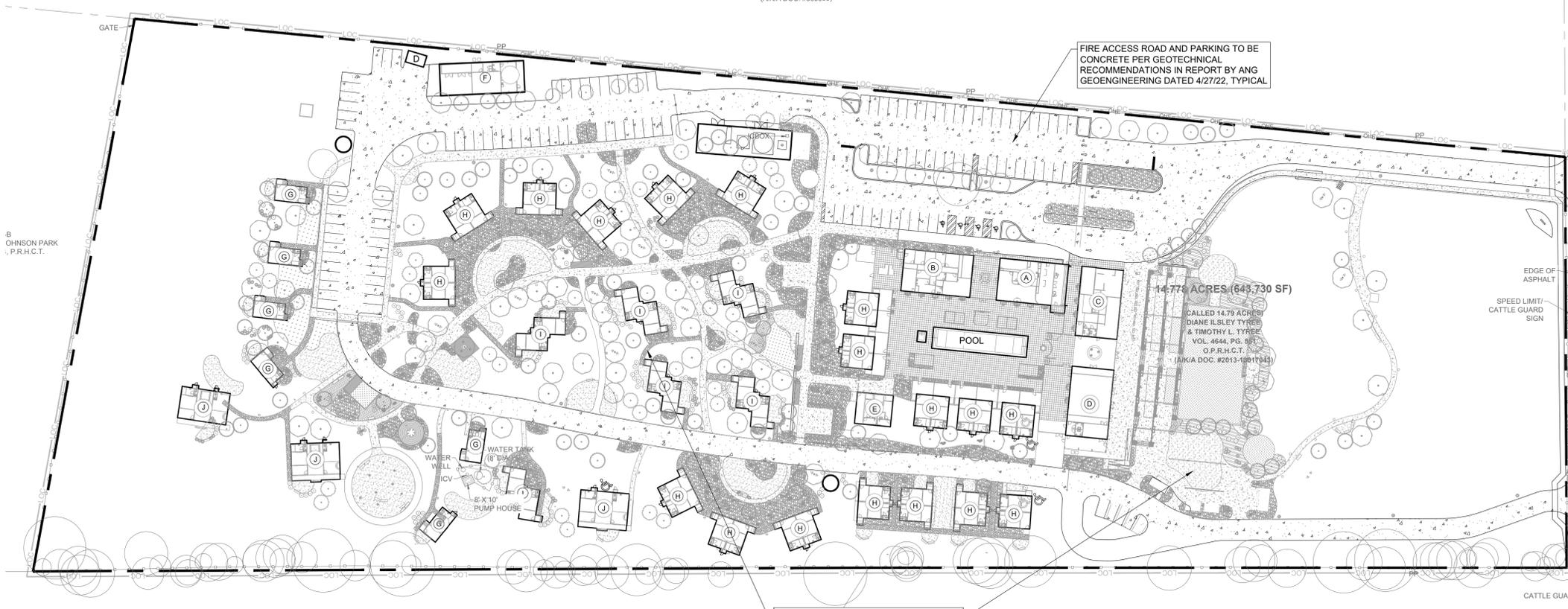
FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
12 OF 39

FREDERICK MICHAEL HARTLEY
& JULIE A. HARTLEY
VOL. 1090, PG. 160
O.P.R.H.C.T.
(A/K/A DOC. #363689)



SILVER CREEK
W/C PROJECT NO. 0104-002



FIRE ACCESS ROAD AND PARKING TO BE CONCRETE PER GEOTECHNICAL RECOMMENDATIONS IN REPORT BY ANG GEOENGINEERING DATED 4/27/22, TYPICAL

14.778 ACRES (643,730 SF)
CALLED 14.79 ACRES
DIANE H. SLEY TYREE
& TIMOTHY L. TYREE
VOL. #644, PG. 987
O.P.R.H.C.T.
(A/K/A DOC. #2013-10817043)

SIDEWALK PATHS AND AMENITY AREAS PAVED PER LANDSCAPE DESIGN, TYPICAL

(CALLED 11.68 ACRES)
KURT & MARLYSE HALUS LIVING
DOC. #170122244, O.P.R.H.C.

(CALLED 1.46 ACRE)
WILLIAM MITCHELL
VOL. 1692, PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)

(CALLED 10.00 ACRES)
WILLIAM B. MITCHELL &
MARY MITCHELL
VOL. 2950, PG. 47
O.P.R.H.C.T.

(CALLED 160 ACRES)
HENRY H. BROOKS
VOL. 109, PG. 627
D.R.H.C.T.

(CALLED 46.14 ACRES - PARCEL A-1)
MARY TAYLOR HENDERSON
VOL. 5106, PG. 428
O.P.R.H.C.T.

NO.	DATE	REVISION



PAVING PLAN

SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
ENGINEERING & SURVEYING

FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
24 OF **45**

LEGEND	
	PROPERTY LINE
	LIMITS OF CONSTRUCTION
	STREET CENTERLINE
	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	JOINTED CONCRETE PAVEMENT

STREET & BRIDGE STANDARD NOTES

- STREET REPAIR NOTES [UCM 5.9]
 - TRENCH REPAIR: USE THE APPROPRIATE 1100S SERIES DETAILS FOR TRENCH REPAIRS: 1100S-2 (FLEXIBLE BASE AND AN ASPHALT SURFACE), 1100S-3 (CONCRETE OR ASPHALT OVERLAID CONCRETE), AND 1100S-5 (FULL DEPTH ASPHALTS STREETS). CLSM SHALL BE SUBSTITUTED FOR BACKFILL AND FLEXIBLE BASE REPLACEMENT PER THE DETAIL NOTES.
 - SURFACE RESTORATION: SURFACE PAVEMENT RESTORATION IS REQUIRED WHEN CUTS 1) ARE OVER 300 LINEAR FEET IN LENGTH; 2) OCCUR WITH THE DAPCZ AREA; OR 3) OCCUR WITHIN PROTECTED STREET SEGMENTS. USE DETAIL 1100S-7 FOR DETERMINING AREAS REQUIRING SURFACE REMOVAL AND REPLACEMENT. THE REPLACEMENT ASPHALTIC CONCRETE SURFACE LAYER THICKNESS SHALL BE A MINIMUM 2 INCHES HMAC TYPE D FOR LOCAL OR RESIDENTIAL STREETS AND A MINIMUM 3 INCHES HMAC TYPE C FOR COLLECTOR OR ARTERIAL STREETS (SEE ITEM 3405, SECTION 3405.4)
 - CONCRETE AND COMPOSITE PAVEMENTS: IN CONCRETE STREETS, ACTUAL RESTORATION LIMITS ARE DETERMINED BY JOINT LOCATIONS. FOR COMPOSITE PAVEMENTS CONSTRUCTED OF CONCRETE WITH A HMAC OVERLAY, USE 1100S-3 FOR TRENCH REPAIR (USING CLASS 3605 CONCRETE) AND 1100S-7 FOR DETERMINATION OF ASPHALT SURFACE RESTORATION.
- SIDEWALK REPAIR NOTES [UCM 5.10]
 - DAMAGED CONCRETE SIDEWALK SHALL BE REMOVED AND REPLACED IN FULL SECTIONS (JOINT TO JOINT).
 - IN AREAS WITH SIDEWALK PAVERS, CONTRACTOR TO CAREFULLY REMOVE, STORE AND REPLACE PAVERS TO MATCH EXISTING CONDITIONS OR BETTER.
- HAND HOLES AND PULLBOXES, ETC.: AVOID PLACING VAULTS, HAND HOLES, ETC. WITHIN SIDEWALKS. IF UNAVOIDABLE, PLACE THEM OUT OF THE PRIMARY ADA ROUTE. ADD APPLICABLE AE APPROVED DETAILS AND SPECIFY APPROPRIATE LOAD RATINGS AND ADA REQUIREMENTS INCLUDING A SLIP RESISTANT LID AND THE ABILITY TO BE PLACED FLUSH WITH THE SURROUNDING WALKING SURFACE CROSS SLOPE.
- SPECIAL NOTE: ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE, SIDEWALK, DRIVEWAY, CURB & GUTTER, OR SUBSURFACE OUTSIDE OF THE PAVEMENT CUT AREA SHALL BE REGARDED AS A PART OF THE STREET CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOUGES, CUTS, CRACKING, DEPRESSIONS, AND/OR ANY OTHER DAMAGE CAUSED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK. THESE REPAIR AREAS WILL BE INCLUDED IN THE TOTAL AREA OF RESTORATION. THESE AREAS SHALL BE SAW CUT IN STRAIGHT, NEAT LINES PARALLEL TO THE EXCAVATION OR UTILITY TRENCH FOR TRENCH REPAIR. FOR LANE RESTORATION THE CUTS SHALL BE PERPENDICULAR TO LANE OR LANES AFFECTED AND FULL LANE WIDTH RESTORED FOR THE DAMAGED AREA. FOR CONCRETE PAVING REPAIR JOINT TO JOINT, FOLLOWING EXISTING OR MODIFIED JOINT PATTERN. REMOVE TO THE NEXT EXISTING JOINT FOR SIDEWALKS AND CURB & GUTTER. ALL SUCH REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS, STANDARDS, AND SPECIFICATIONS.

ALLEY CONSTRUCTION/REPAIR NOTES

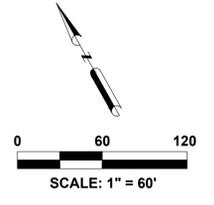
MODIFICATION OF DETAIL 1000S-4 TYPE A (NON-REINFORCED CLASS 360 CONCRETE PAVEMENT); PLACE 20' WIDE CONCRETE ALLEY FROM ROW TO ROW WITH THE DRAINAGE DIRECTED TO THE CENTER. SHOULD OBSTACLES IN ALLEY INHIBIT THE ABILITY TO PAVE ROW TO ROW, THE WIDTH OF THE ALLEY MAY BE REDUCED TO ACCOMMODATE THESE OBSTRUCTIONS. THE RESULTING DECREASE SHOULD BE REFLECTED FOR THE LENGTH OF THE ALLEY SO THE EDGES ARE PARALLEL. THE REMAINING AREA SHOULD BE COVERED WITH AN IMPERMEABLE SURFACE (ASPHALT, CONCRETE, CLSM OR OTHER APPROVED MATERIAL).

- JOINTING: THE ALLEY SHOULD HAVE THREE (3) EQUAL WIDTH LONGITUDINAL PANELS WITH TRANSVERSE CONTRACTION JOINTS CUT AT THE SAME LENGTH AS THE WIDTH OF THE LONGITUDINAL PANELS (MAKING SQUARE PANELS). AN EARLY ENTRY SAW IS RECOMMENDED.
- REPAIR: DAMAGED PANELS SHALL BE REPLACED AS DESCRIBED IN DETAIL 1100S-3 (WITHOUT REINFORCEMENT) USING #4 REBAR AS THE BARS 12' LONG EMBEDDED 6" INTO EXISTING PANELS AND SECURED WITH EPOXY, SPACED AT 12" ON CENTER ON ALL SIDES OF THE REPAIR BUTTING EXISTING CONCRETE.

AUSTIN WATER REPAVEMENT NOTES

- DO NOT REPAVE OVER ANY AUSTIN WATER UTILITY APPURTENANCES.

Drawing: G:\0104-King Development\002_12800 Silver Creek_Rd (Dripping Springs)\CAD\ paving Plan.dwg Last Plotter: Mon Nov 06 2023 - 10:55am By: cehent

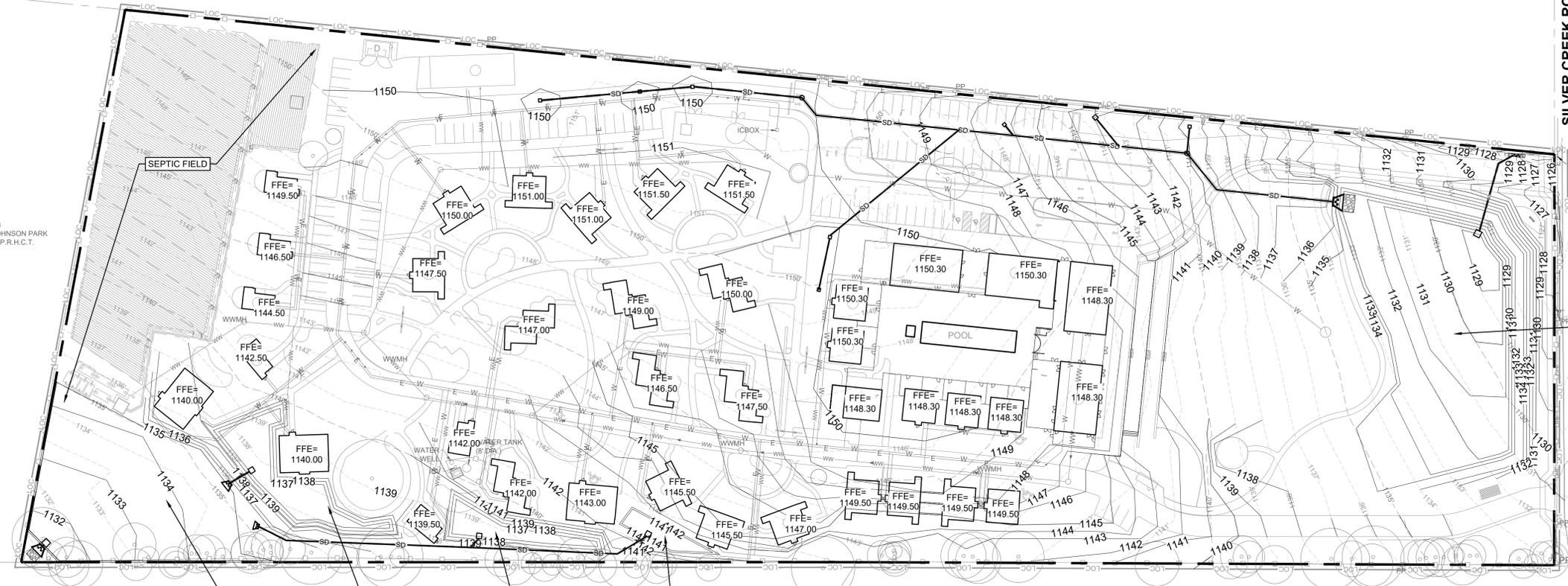


SILVER CREEK
W/C PROJECT NO. 0104-002

(CALLED 19.53 ACRES)
FREDERICK MICHAEL HARTLEY
& JULIE A. HARTLEY
VOL. 1099, PG. 190
O.P.R.H.C.T.
(AK/A DOC. #363689)

LOT 2-B
REPLAT OF LOT 2, JOHNSON PARK
DOC. #19043054, P.R.H.C.T.

SILVER CREEK ROAD
(PUBLIC R.O.W. VARIES - ASPHALT ROAD)



SEDIMENTATION & DETENTION POND A
SHEET 35

DETENTION POND B
SHEET 37

RAIN GARDEN A
SHEET 31

RAIN GARDEN B
SHEET 32

RAIN GARDEN C
SHEET 33

(CALLED 160 ACRES)
HENRY H. BROOKS
VOL. 109, PG. 627
D.R.H.C.T.

(CALLED 46.14 ACRES - PARCEL A-1)
MARY TAYLOR HENDERSON
VOL. 5106, PG. 428
O.P.R.H.C.T.

(CALLED 11.68 ACRES)
KURT & MARLYSE HAUS LIVIN
DOC. #170122244, O.P.R.H.

(CALLED 1.48 ACRES)
WILLIAM MITCHELL
VOL. 1662, PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)

(CALLED 10.00 ACRES)
WILLIAM B. MITCHELL &
MARY MITCHELL
VOL. 2950, PG. 47
O.P.R.H.C.T.

NO.	DATE	REVISION



Caroline Eckert
10/20/2023

LEGEND	
PROPOSED	
-E-	ELECTRIC LINE
-W-	WATER LINE
-WW-	WASTEWATER LINE
WWMH ○	WASTEWATER MANHOLE
-SD-	STORM LINE
SSMH ○	STORM MANHOLE

OVERALL STORM PLAN

SILVER CREEK
12800 SILVER CREEK ROAD

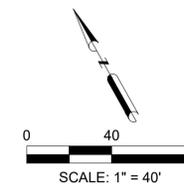


WUEST GROUP
ENGINEERING & SURVEYING

FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
22 OF 39

Drawing: G:\0104-Krug Development\002_12800 Silver Creek_Rd (\Dripping Springs)\CAD\Storm Plan.dwg - Last Plotted: Fri, Oct 20, 2023 - 10:02am - By: rkuhnok



LEGEND	
PROPOSED	
	ELECTRIC LINE
	WATER LINE
	WASTEWATER LINE
	WASTEWATER MANHOLE
	STORM LINE
	STORM MANHOLE

NO.	DATE	REVISION



STORM PLAN A

SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
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FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
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SHEET
23 OF 39



(CALLED 19.53 ACRES)
FREDERICK MICHAEL HARTLEY
& JULIE A. HARTLEY
VOL. 1090, PG. 160
O.P.R.H.C.T.
(AK/A DOC. #363689)

LOT 2-B
REPLAT OF LOT 2, JOHNSON PARK
DOC. #19043054, P.R.H.C.T.

(CALLED 160 ACRES)
HENRY H. BROOKS
VOL. 109, PG. 627
D.R.H.C.T.

REFER TO DETENTION
POND B, SHEET 37,
FOR DETAILS

REFER TO RAIN
GARDEN A, SHEET 31,
FOR DETAILS

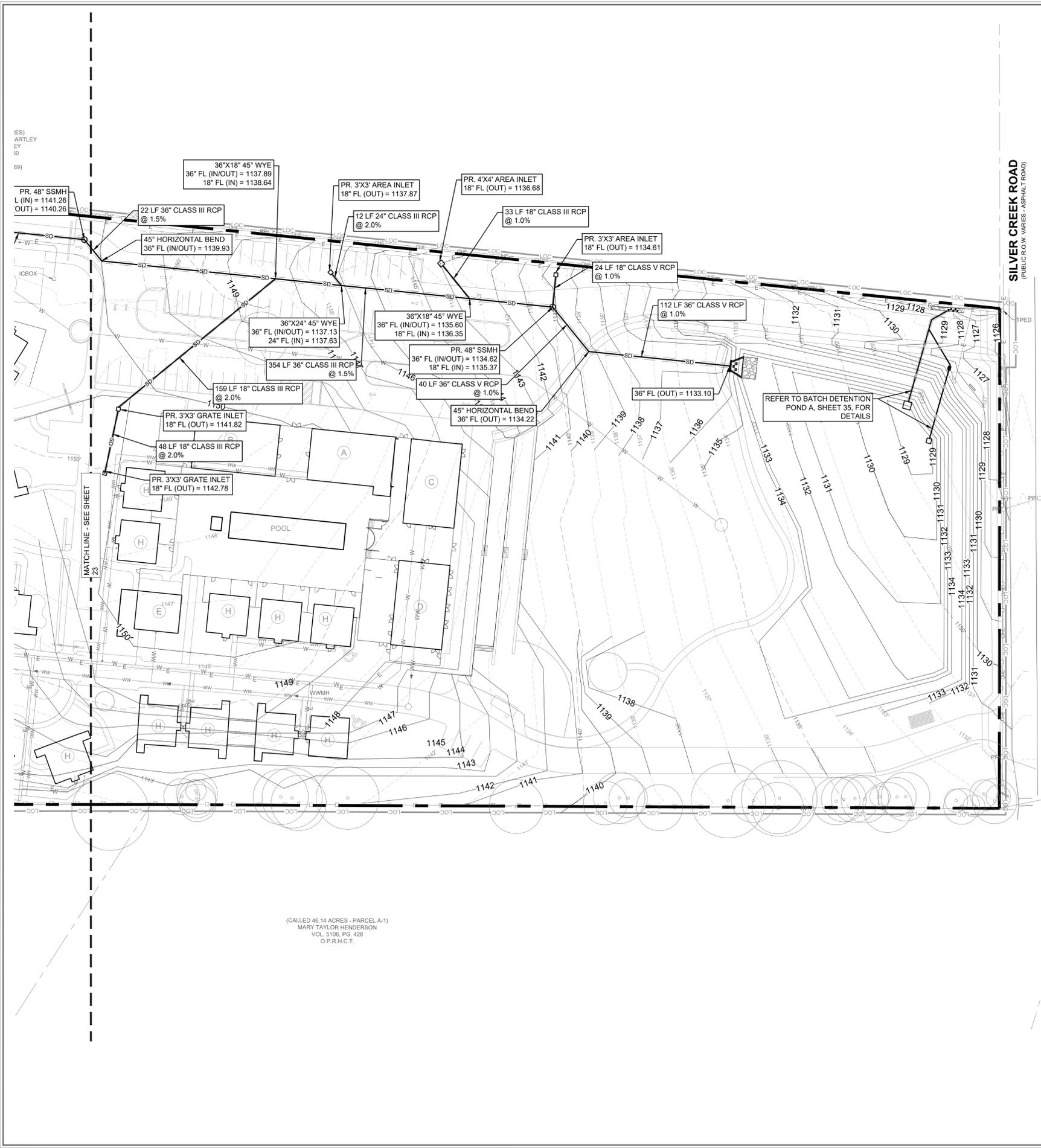
REFER TO RAIN
GARDEN B, SHEET 32,
FOR DETAILS

REFER TO RAIN
GARDEN C, SHEET 33,
FOR DETAILS

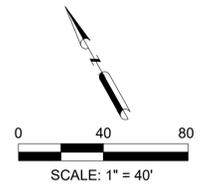
MATCH LINE - SEE SHEET 24

Drawing: G:\0104-Krug Development\002_12800 Silver Creek_Rd (Dripping Springs)\CAD\Storm Plan.dwg - Last Plotted: Fri, Oct 20, 2023 - 10:03am - By: r.muhok

Drawing: G:\0104-King Development\02_12800 Silver Creek Ref (Dripping Springs)\CAD\Storm Plan.dwg List Plotted: Wed Oct 25, 2023, 10:41am By: mntuck



SILVER CREEK ROAD
(PUBLIC ROW VARIES - ASPHALT ROAD)



SILVER CREEK
W/C PROJECT NO. 0104-002

LEGEND	
PROPOSED	
E	ELECTRIC LINE
W	WATER LINE
WW	WASTEWATER LINE
WWMH	WASTEWATER MANHOLE
SD	STORM LINE
SSMH	STORM MANHOLE

NO.	DATE	REVISION



(CALLED 11.68 ACRES)
KURT & MARLYSE HAUS LIVING TRUST
DOC. #170122244, O.P.R.H.C.T.

(CALLED 1.46 ACRE)
WILLIAM MITCHELL
VOL. 1692, PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)

(CALLED 10.00 ACRES)
WILLIAM B. MITCHELL &
MARY MITCHELL
VOL. 2569, PG. 47
O.P.R.H.C.T.

(CALLED 46.14 ACRES - PARCEL A-1)
MARY TAYLOR HENDERSON
VOL. 5106, PG. 428
O.P.R.H.C.T.

STORM PLAN B

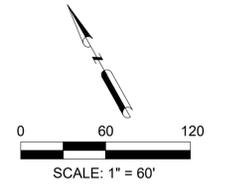
SILVER CREEK
12800 SILVER CREEK ROAD



WUEST GROUP
ENGINEERING & SURVEYING

FIRM # F-15324
5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

SHEET
24 OF 39



LEGEND		
EXISTING	PROPOSED	
— 535 —	— 535 —	MAJOR CONTOUR
— 527 —	— 527 —	MINOR CONTOUR
	— SD —	STORMDRAIN

- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]

- NOTE:
- PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

NO.	DATE	REVISION

(CALLED 19.53 ACRES)
FREDERICK MICHAEL HARTLEY
& JULIE A. HARTLEY
VOL. 1090, PG. 160
O.P.R.H.C.T.
(AKIA DOC. #363689)

LOT 2-B
LAT OF LOT 2, JOHNSON PARK
DOC. #19043054, P.R.H.C.T.

(CALLED 14.79 ACRES)
DIANE ILSLEY TYREE
& TIMOTHY L. TYREE
VOL. 464, PG. 551
O.P.R.H.C.T.
(AKIA DOC. #20113-13017443)

(CALLED 11.68 ACRES)
KURT & MARLYSE HAUS LIVING TRUST
DOC. #170122244, O.P.R.H.C.T.

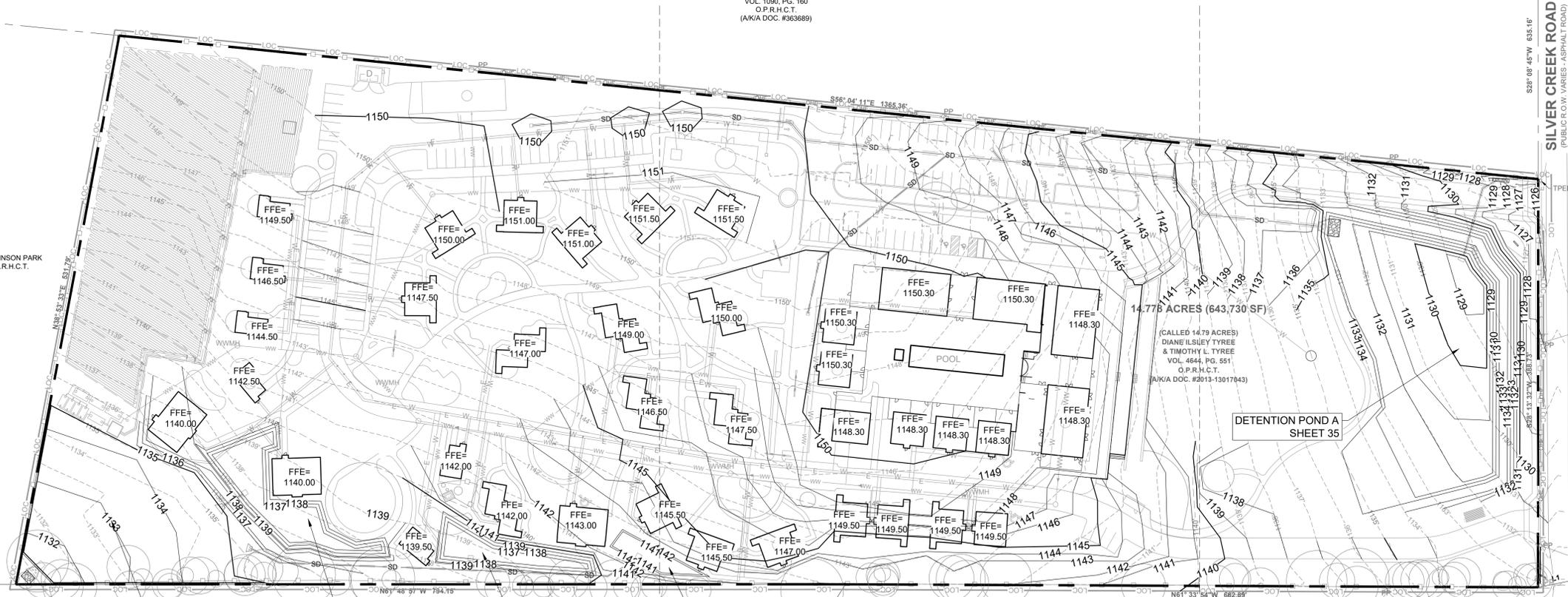
(CALLED 1.46 ACRE)
WILLIAM MITCHELL
VOL. 1692, PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)

(CALLED 10.00 ACRES)
WILLIAM B. MITCHELL &
MARY MITCHELL
VOL. 2950, PG. 47
O.P.R.H.C.T.

(CALLED 160 ACRES)
HENRY H. BROOKS
VOL. 109, PG. 627
D.R.H.C.T.

(CALLED 46.14 ACRES - PARCEL A-1)
MARY TAYLOR HENDERSON
VOL. 5106, PG. 428
O.P.R.H.C.T.



10/19/2023

**OVERALL
GRADING PLAN**

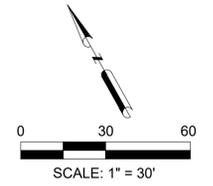
SILVER CREEK
12800 SILVER CREEK ROAD



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SHEET
25 OF 39



LEGEND		
EXISTING	PROPOSED	
	1150.0	SPOT ELEVATION
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
	sd	STORMDRAIN
	o o o o o	ADA ROUTE

- NOTES:
1. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP, [ANSI 403.3]
 2. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50, [ANSI 403.3]

- NOTE:
1. PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 2. UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

NO.	DATE	REVISION



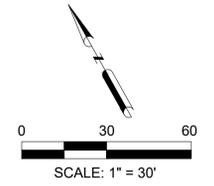
GRADING PLAN A

SILVER CREEK
12800 SILVER CREEK ROAD



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26 OF 39

Drawing: G:\0104-Krug Development\002_12800 Silver Creek_Rd_(Dripping Springs)\CAD\Grading Plan.dwg, Last Plotted: Wed Oct 25, 2023 - 10:40am, By: rkuhnck

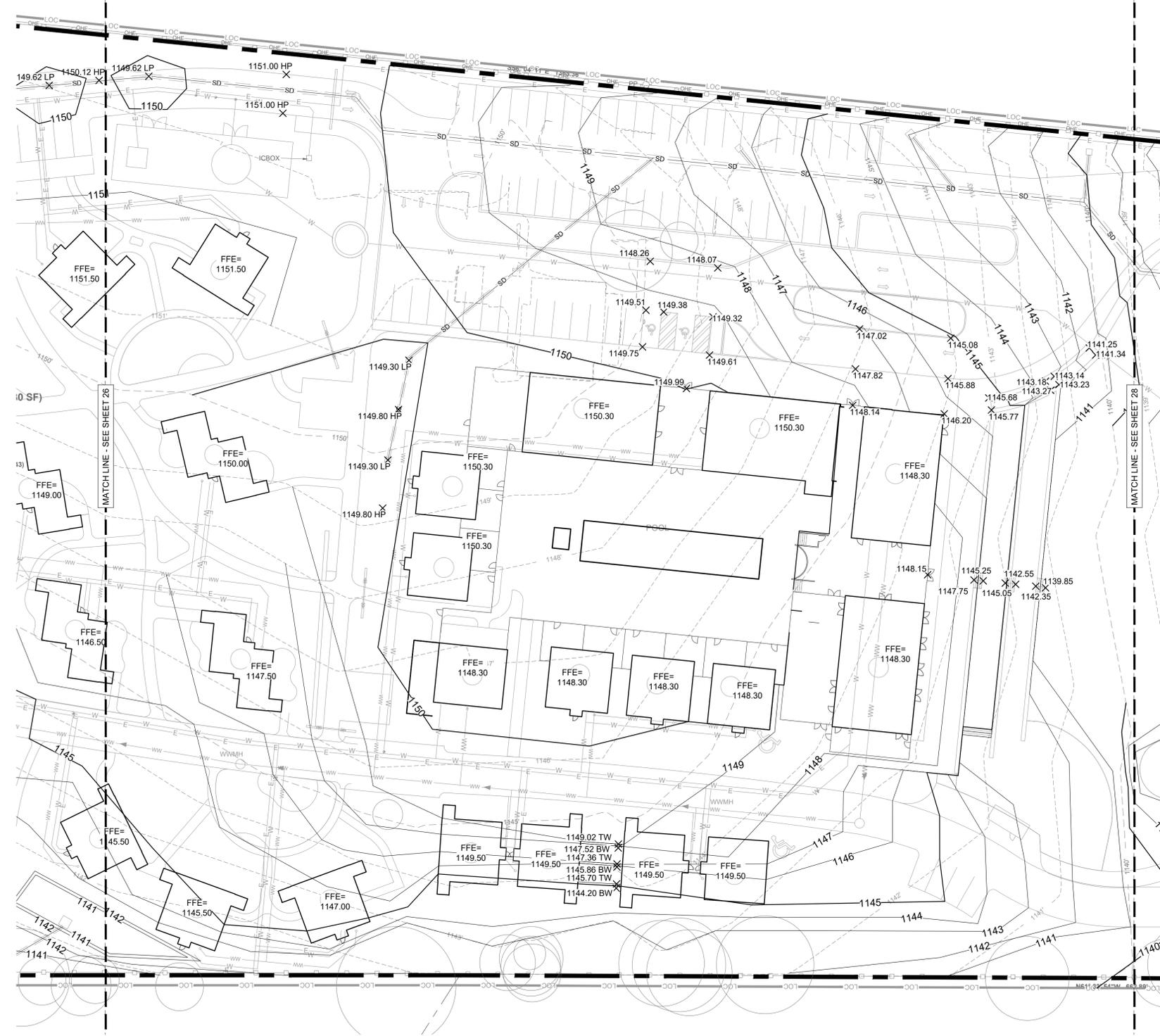


LEGEND		
EXISTING	PROPOSED	
	1150.0	SPOT ELEVATION
---	535	MAJOR CONTOUR
---	527	MINOR CONTOUR
	SD	STORMDRAIN
	○ ○ ○ ○ ○	ADA ROUTE

- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP, [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50, [ANSI 403.3]

- NOTE:
- PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

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Caroline Eckert
10/19/2023

GRADING PLAN B

SILVER CREEK
12800 SILVER CREEK ROAD

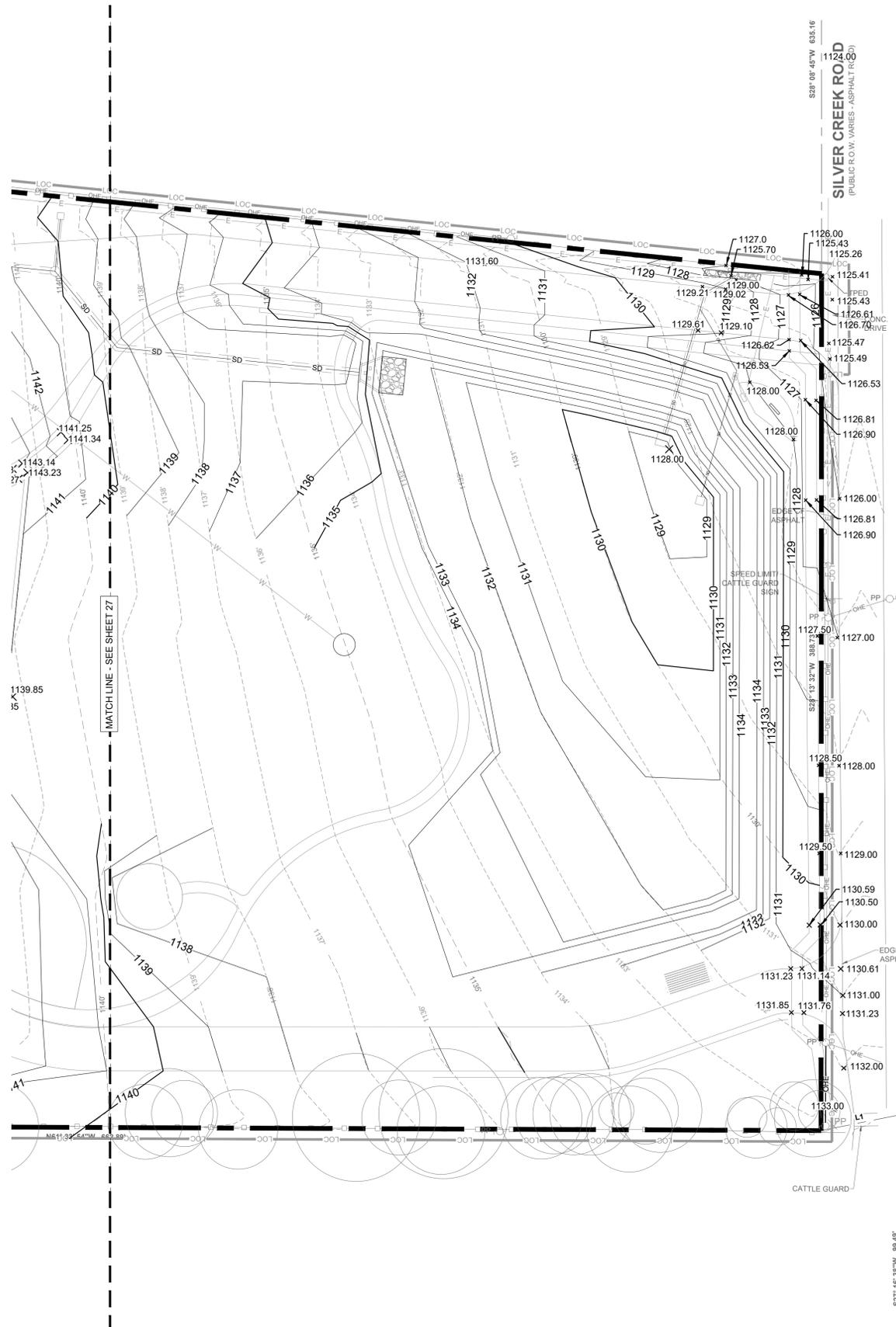


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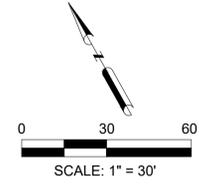
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AUSTIN, TEXAS 78751
(512) 394-1900

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27 OF 39

Drawing: G:\0104-Krug Development\02_12800 Silver Creek Ref (Dripping Springs)\CAD\Grading Plan.dwg Last Plotted: Wed Oct 25, 2023 - 10:40am By: rkuhnck



SILVER CREEK ROAD
PUBLIC ROAD, VARIES - ASPHALT (R.O.D.)



SILVER CREEK
W/C PROJECT NO. 0104-002

LEGEND		
EXISTING	PROPOSED	
	1150.0	SPOT ELEVATION
---	535	MAJOR CONTOUR
---	527	MINOR CONTOUR
	sd	STORMDRAIN
	o o o o o	ADA ROUTE

- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]

- NOTE:
- PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

NO.	DATE	REVISION



GRADING PLAN C

SILVER CREEK
12800 SILVER CREEK ROAD



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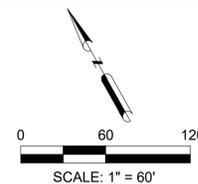
FIRM # F-15324
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AUSTIN, TEXAS 78751
(512) 394-1900

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28 OF 39

(CALLED 11.68 ACRES)
KURT & MARLYSE HAUS LIVING TRUST
DOC. #170122244, O.P.R.H.C.T.

(CALLED 1.46 ACRE)
WILLIAM MITCHELL
VOL. 1692 PG. 351
O.P.R.H.C.T.

(CALLED 0.97 ACRE)



NO.	DATE	REVISION



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10/19/2023

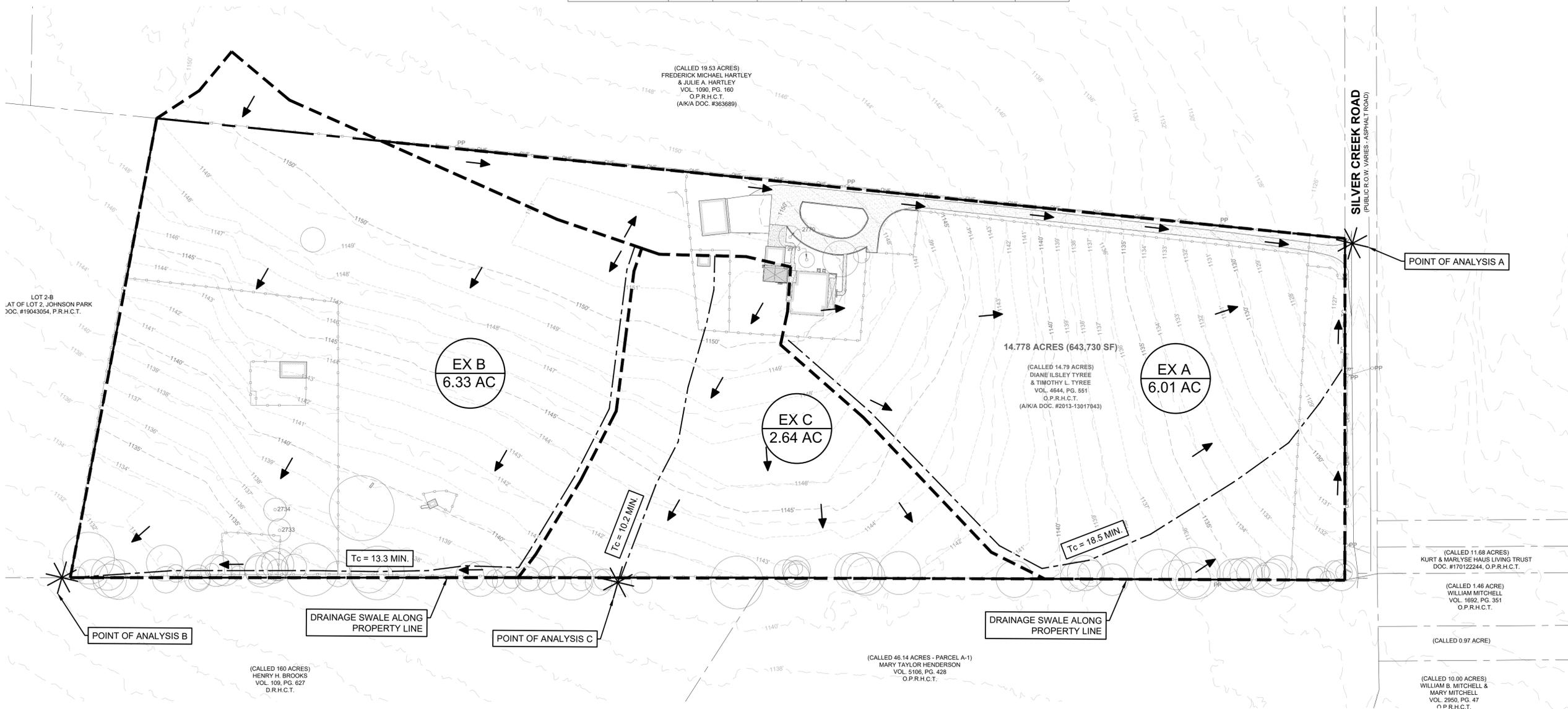
EXISTING DRAINAGE AREA MAP
SILVER CREEK
12800 SILVER CREEK ROAD



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Label	Area (acres)	I.C. (acres)	Tc (min)	Tlag (min)	Soil Type	Soil Hydro. Group	Weighted CN
ANALYSIS POINT A							
EX A	6.01	0.07	18.5	11.1	DoC	D	84
ANALYSIS POINT B							
EX B	6.33	0.01	13.3	8.0	DoC	D	84
ANALYSIS POINT C							
EX C	2.64	0.02	10.2	6.1	DoC	D	84

AREA No.	Sheet Flow				Shallow Concentrated Flow				Channel or Storm Sewer			TOTAL
	L (ft)	n	s (ft/ft)	Tsf (min)	L (ft)	n	s (ft/ft)	Tsc (min)	V (ft/s)	L (ft)	Tcf (min)	
EX A	100.0	0.2	0.0280	3.42	721.8	0.2	0.0280	14.38	3.0	132.6	0.74	18.5
EX B	100.0	0.2	0.0200	4.04	284.5	0.2	0.0266	6.02	3.0	521.2	2.90	13.3
EX C	100.0	0.2	0.0200	4.04	284.9	0.2	0.0273	5.75	3.0	0.0	0.00	10.2



HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
EX A	0.009397	16.2	01Jan2000, 12:13	2.5
EX B	0.0098966	19.5	01Jan2000, 12:09	2.4
EX C	0.0041292	8.9	01Jan2000, 12:08	2.5
EX POA A	0.009397	16.2	01Jan2000, 12:13	2.5
EX POA B	0.0098966	19.5	01Jan2000, 12:09	2.4
EX POA C	0.0041292	8.9	01Jan2000, 12:08	2.5

HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
EX A	0.009397	38.4	01Jan2000, 12:12	6.9
EX B	0.0098966	46.3	01Jan2000, 12:09	6.9
EX C	0.0041292	20.9	01Jan2000, 12:07	6.9
EX POA A	0.009397	38.4	01Jan2000, 12:12	6.9
EX POA B	0.0098966	46.3	01Jan2000, 12:09	6.9
EX POA C	0.0041292	20.9	01Jan2000, 12:07	6.9

HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
EX A	0.009397	29.5	01Jan2000, 12:12	4.9
EX B	0.0098966	35.6	01Jan2000, 12:09	4.9
EX C	0.0041292	16.1	01Jan2000, 12:08	4.9
EX POA A	0.009397	29.5	01Jan2000, 12:12	4.9
EX POA B	0.0098966	35.6	01Jan2000, 12:09	4.9
EX POA C	0.0041292	16.1	01Jan2000, 12:08	4.9

HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
EX A	0.009397	53.2	01Jan2000, 12:12	11.0
EX B	0.0098966	64.1	01Jan2000, 12:09	11.0
EX C	0.0041292	29.0	01Jan2000, 12:07	11.0
EX POA A	0.009397	53.2	01Jan2000, 12:12	11.0
EX POA B	0.0098966	64.1	01Jan2000, 12:09	11.0
EX POA C	0.0041292	29.0	01Jan2000, 12:07	11.0

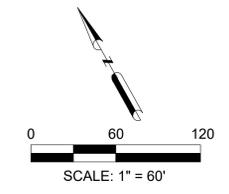
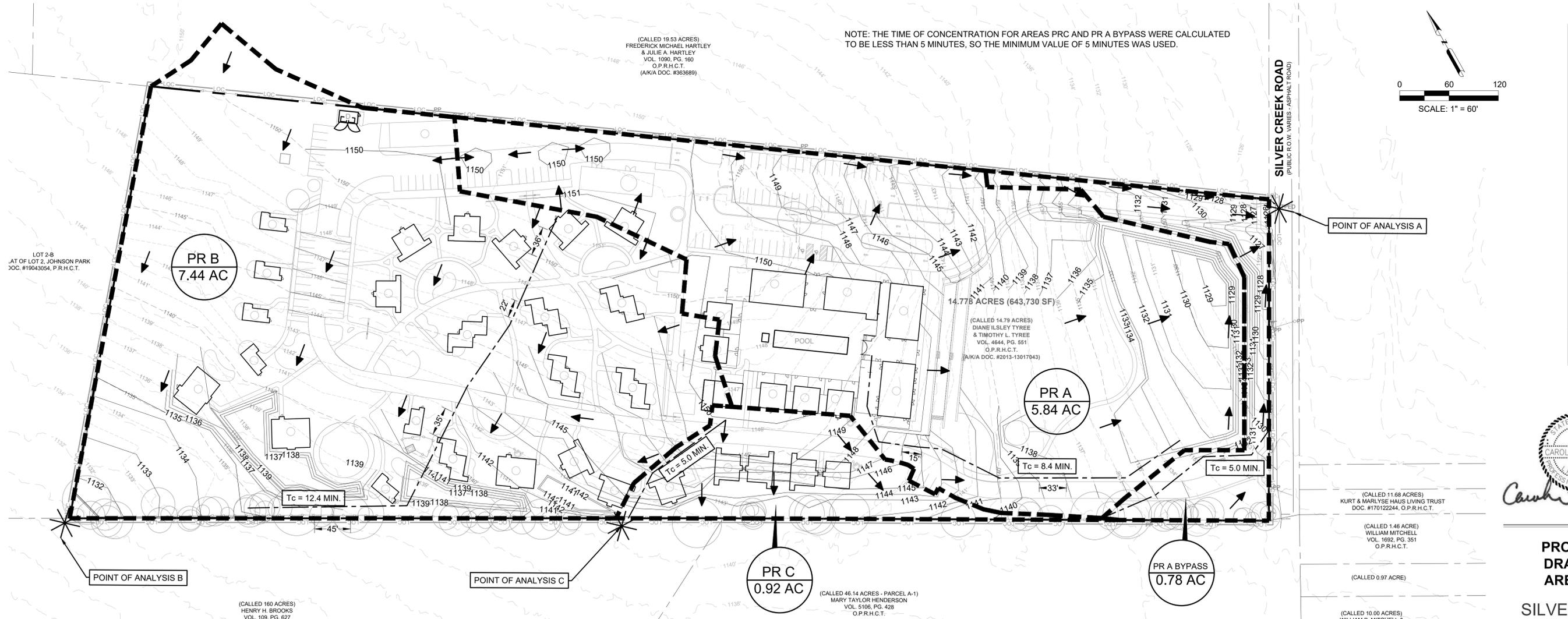
PROPOSED	
	FLOW ARROW
	DRAINAGE AREA DIVIDE
	TIME OF CONCENTRATION
	DRAINAGE AREA

Drawing: 010104-King-Development-002-12800-Silver-Creek-Ref-(Dripping-Springs)-CAD-Existing-Drainage-Area-Map.dwg - Last Plotted: Thu Oct 19, 2023 - 10:14am - By: rumeck

Proposed Peak Runoff Summary							
Label	Area (acres)	I.C. (acres)	Tc (min)	Tlag (min)	Soil Type	Soil Hydro. Group	Weighted CN
ANALYSIS POINT A							
PR A	5.84	2.93	8.4	5.1	DoC	D	91
PR A BYPASS	0.78	0.02	5.0	3.0	DoC	D	84
ANALYSIS POINT B							
PR B	7.44	1.98	12.4	7.4	DoC	D	88
ANALYSIS POINT C							
PR C	0.92	0.46	5.0	3.0	DoC	D	91

TIME OF CONCENTRATION FOR PR A								
SHEET FLOW:	SHALLOW CONCENTRATED:		SHALLOW CONCENTRATED:		SHALLOW CONCENTRATED:		TOTAL	
LENGTH OVERLAND (FT)	50	100' Max	UNPAVED	UNPAVED	UNPAVED			
MANNING'S N	0.150	Table 2-3	LENGTH (FT)	185.0	LENGTH (FT)	71.0	LENGTH (FT)	311.0
SLOPE (FT/FT)	0.02		MANNING'S N= 0.05, r = 0.4		MANNING'S N= 0.05, r = 0.4		MANNING'S N= 0.05, r = 0.4	
2 YEAR, 24HR RAINFALL (In)	4.14	Table 2-1A/B	SLOPE (FT/FT)	0.020	SLOPE (FT/FT)	0.067	SLOPE (FT/FT)	0.030
Tc SHEET FLOW (MIN)	4.9		Tc UNPAVED (MIN)	1.4	Tc UNPAVED (MIN)	0.3	Tc UNPAVED (MIN)	1.8
								8.4

TIME OF CONCENTRATION FOR PR B							
SHEET FLOW:	SHALLOW CONCENTRATED:		SHALLOW CONCENTRATED:		SHALLOW CONCENTRATED:		TOTAL
LENGTH OVERLAND (FT)	100	100' Max	UNPAVED	UNPAVED	UNPAVED		
MANNING'S N	0.150	Table 2-3	LENGTH (FT)	138.0	LENGTH (FT)	191.0	CHANNEL FLOW:
SLOPE (FT/FT)	0.028		MANNING'S N= 0.05, r = 0.4		MANNING'S N= 0.05, r = 0.4		LENGTH (FT)
2 YEAR, 24HR RAINFALL (In)	4.16	Table 2-1A/B	SLOPE (FT/FT)	0.045	SLOPE (FT/FT)	0.029	VELOCITY (FT/S)
Tc SHEET FLOW (MIN)	7.5		Tc UNPAVED (MIN)	0.7	Tc UNPAVED (MIN)	1.2	Tc UNPAVED (MIN)
							1.1
							12.4



NO.	DATE	REVISION



PROPOSED DRAINAGE AREA MAP
SILVER CREEK
12800 SILVER CREEK ROAD



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30 OF 39

PROPOSED SUMMARY: 2 YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
PR A	0.0091228	25.3	01Jan2000, 12:06	3.3
POND A	0.0091228	7.6	01Jan2000, 12:21	3.1
PR A BYPASS	0.0012206	3.2	01Jan2000, 12:04	2.5
PR B	0.0116258	26.2	01Jan2000, 12:09	2.9
POND B	0.0116258	19.4	01Jan2000, 12:15	2.9
PR C	0.0014444	4.6	01Jan2000, 12:04	3.3
PR POA A	0.0103434	8.4	01Jan2000, 12:18	3.1
PR POA B	0.0116258	19.4	01Jan2000, 12:15	2.9
PR POA C	0.0014444	4.6	01Jan2000, 12:04	3.3

PROPOSED SUMMARY: 10 YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
PR A	0.0091228	41.8	01Jan2000, 12:06	5.8
POND A	0.0091228	16.6	01Jan2000, 12:18	5.7
PR A BYPASS	0.0012206	5.9	01Jan2000, 12:04	5.0
PR B	0.0116258	45.1	01Jan2000, 12:09	5.4
POND B	0.0116258	34.8	01Jan2000, 12:14	5.4
PR C	0.0014444	7.5	01Jan2000, 12:04	5.8
PR POA A	0.0103434	18.4	01Jan2000, 12:15	5.6
PR POA B	0.0116258	34.8	01Jan2000, 12:14	5.4
PR POA C	0.0014444	7.5	01Jan2000, 12:04	5.8

GLOBAL SUMMARY: 2 YEAR		
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)
EX POA A	0.009397	16.2
PR POA A	0.0103434	8.4
EX POA B	0.0098966	19.5
PR POA B	0.0116258	19.4
EX POA C	0.0041292	8.9
PR POA C	0.0014444	4.6

GLOBAL SUMMARY: 10 YEAR		
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)
EX POA A	0.009397	29.5
PR POA A	0.0103434	18.4
EX POA B	0.0098966	35.6
PR POA B	0.0116258	34.8
EX POA C	0.0041292	16.1
PR POA C	0.0014444	7.5

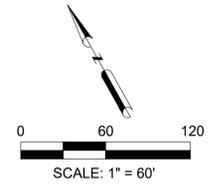
PROPOSED SUMMARY: 25 YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
PR A	0.0091228	52.8	01Jan2000, 12:06	7.9
POND A	0.0091228	23.2	01Jan2000, 12:16	7.7
PR A BYPASS	0.0012206	7.6	01Jan2000, 12:04	7.0
PR B	0.0116258	57.7	01Jan2000, 12:08	7.4
POND B	0.0116258	44.6	01Jan2000, 12:14	7.4
PR C	0.0014444	9.5	01Jan2000, 12:04	7.9
PR POA A	0.0103434	25.7	01Jan2000, 12:15	7.6
PR POA B	0.0116258	44.6	01Jan2000, 12:14	7.4
PR POA C	0.0014444	9.5	01Jan2000, 12:04	7.9

PROPOSED SUMMARY: 100 YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)	TIME OF PEAK	VOLUME (IN)
PR A	0.0091228	71.2	01Jan2000, 12:06	12.0
POND A	0.0091228	36.4	01Jan2000, 12:14	11.7
PR A BYPASS	0.0012206	10.5	01Jan2000, 12:04	11.0
PR B	0.0116258	78.7	01Jan2000, 12:08	11.5
POND B	0.0116258	63.5	01Jan2000, 12:13	11.5
PR C	0.0014444	12.8	01Jan2000, 12:04	12.0
PR POA A	0.0103434	40.2	01Jan2000, 12:13	11.6
PR POA B	0.0116258	63.5	01Jan2000, 12:13	11.5
PR POA C	0.0014444	12.8	01Jan2000, 12:04	12.0

GLOBAL SUMMARY: 25 YEAR		
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)
EX POA A	0.009397	38.4
PR POA A	0.0103434	25.7
EX POA B	0.0098966	46.3
PR POA B	0.0116258	44.6
EX POA C	0.0041292	20.9
PR POA C	0.0014444	9.5

GLOBAL SUMMARY: 100 YEAR		
HYDROLOGIC ELEMENT	DRAINAGE AREA(MI2)	PEAK DISCHARGE (CFS)
EX POA A	0.009397	53.2
PR POA A	0.0103434	40.2
EX POA B	0.0098966	64.1
PR POA B	0.0116258	63.5
EX POA C	0.0041292	29.0
PR POA C	0.0014444	12.8

Drawing: 010104-King Development 002 - 12800 Silver Creek Ref. (Dripping Springs) CAD/Proposed Drainage Area Map.dwg - Last Plotted: Mon Oct 23, 2023 - 11:45am - By: rnhack



LEGEND		
EXISTING	PROPOSED	
--- 535 ---	— 535 —	MAJOR CONTOUR
--- 527 ---	— 527 —	MINOR CONTOUR
	— SD —	STORMDRAIN

APPENDIX R-11 RAIN GARDEN CALCULATIONS FOR DEVELOPMENT PERMITS				
Drainage Area Data:				
Drainage Area to Control (Max 2 Acres) =	2.35	acres	102505	sq ft
Drainage Area Percent IC =	0.42	%		
Capture Depth =	0.3042232	in		
Water Quality Control Calculations:				
	Required per TCEQ		Provided	
Water Quality Volume =	7160	cf	7371	cf
100 Year Peak Flow Rate to Control (Q100) =	15.6	cfs	7.6	
Filtration Pond Area =			4006	sf
Depth of Ponding (D) =	Max. 1	ft	1	ft
Depth of Filtration Media (L) =	Min. 1.5	ft	3.5	ft
Effective Porosity WQV =			3365.04	cf
Ponded WQV =			4006	cf
			Total WQV	7371.04
Water Quality Elevation =			1138	ft MSL
Elevation of Splitter/Overflow Weir =	(min. WQE)		1138	ft MSL
Length of Splitter Weir =			16	ft
Required Head to Pass Q100	Max. 0.5	ft	0.47	ft
Pond Freeboard Provided to Pass Q100 =	Min. 0.25	ft	0.25	ft
Top of Pond =			1138.72	ft MSL
Bottom of Pond (on top of filtration media) =			1137	ft MSL
Bottom of Pond (under filtration media) =			1133.5	ft MSL
48 Hour Max. Drawdown				
Depth of WQV =	4.5	ft	54.0	in
For Infiltration Rain Gardens				
Infiltration Rate (in/hr) =			1.12	in/hr
Rain Garden Pond Drawdown Time =			48.0	hr

NOTE: SEE RAIN GARDEN TSS REMOVAL CALCULATIONS SHEET FOR REQUIRED WATER QUALITY VOLUME CALCULATIONS.

NO.	DATE	REVISION

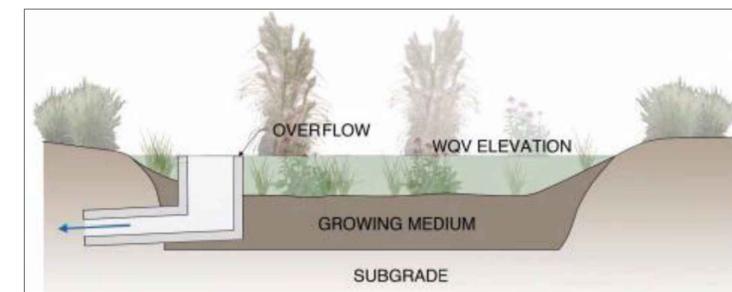
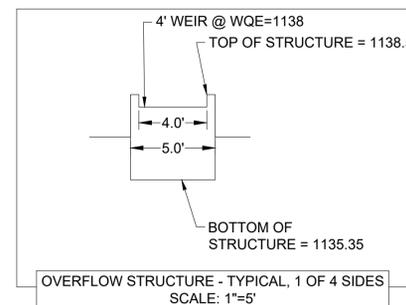
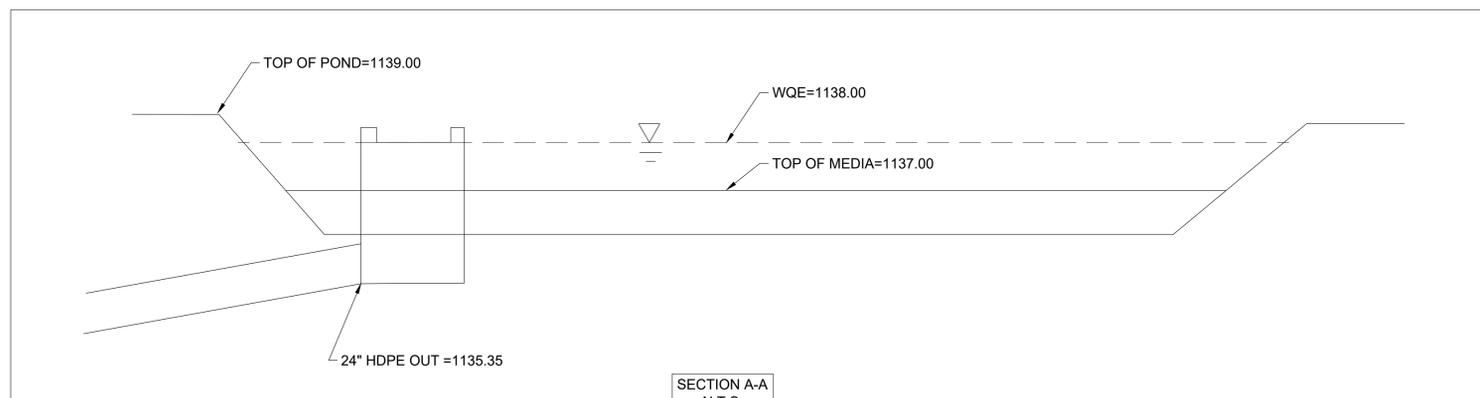
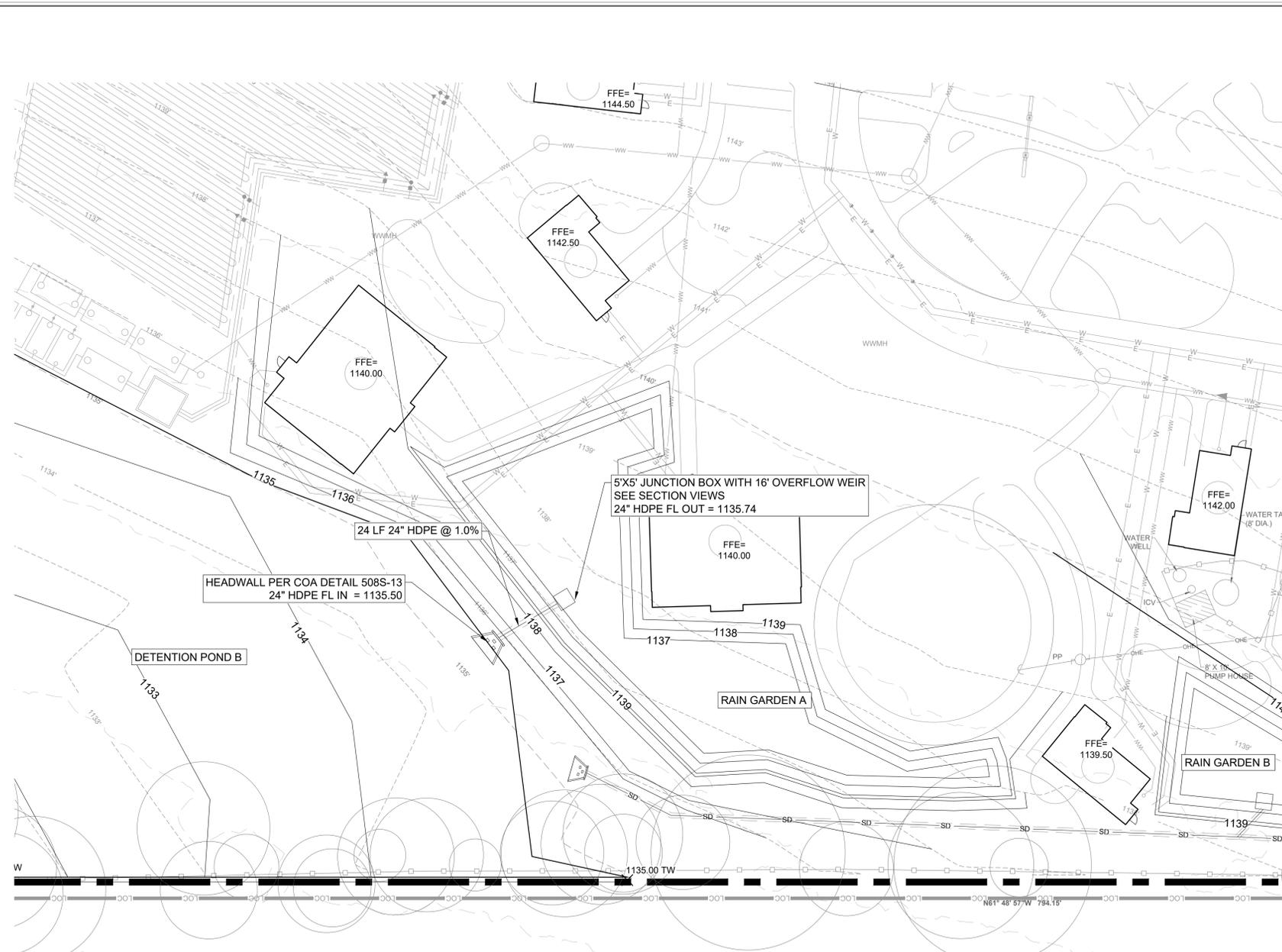


FIGURE 1.6.7.H-3. FULL INFILTRATION RAIN GARDEN (FROM COA ECM 1.6.7)



- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]
 - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

OVERFLOW STRUCTURE - TYPICAL, 1 OF 4 SIDES
SCALE: 1"=5'



Drawing: G:\0104-Krug Development\02_12800 Silver Creek Ref (Dripping Springs)\CAD\Water Quality\Finals.dwg, Last Plotted: Tue Oct 24, 2023 - 5:24pm, By: muback

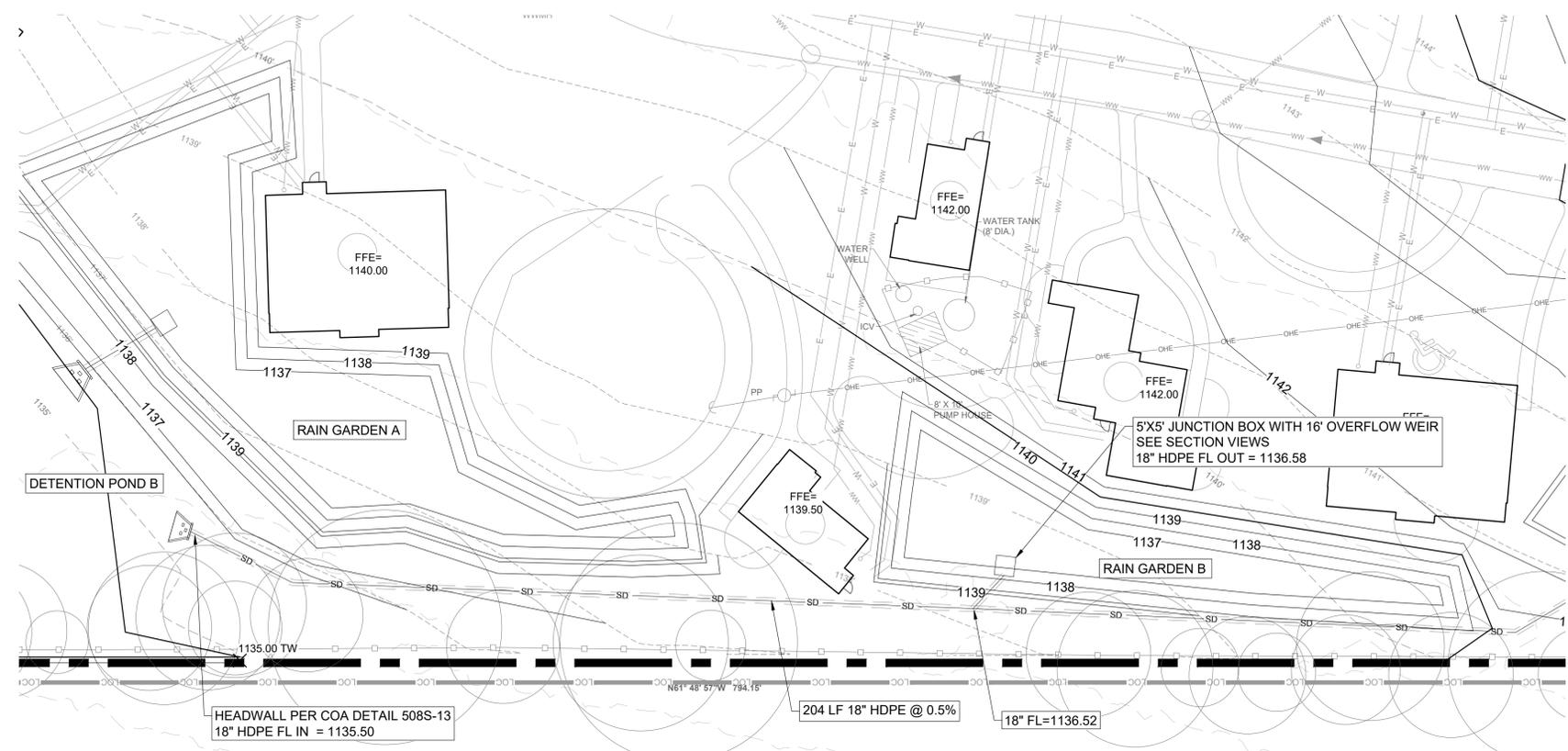
RAIN GARDEN A

SILVER CREEK
12800 SILVER CREEK ROAD

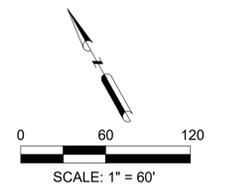


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Drawing: G:\0104-King Development\02_12800 Silver Creek Ref (Dripping Springs)\CAD\Water Quality\Finals.dwg, Last Plotted: Tue Oct 24, 2023 - 5:26pm, By: malmek



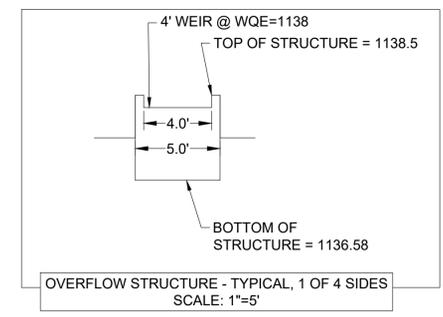
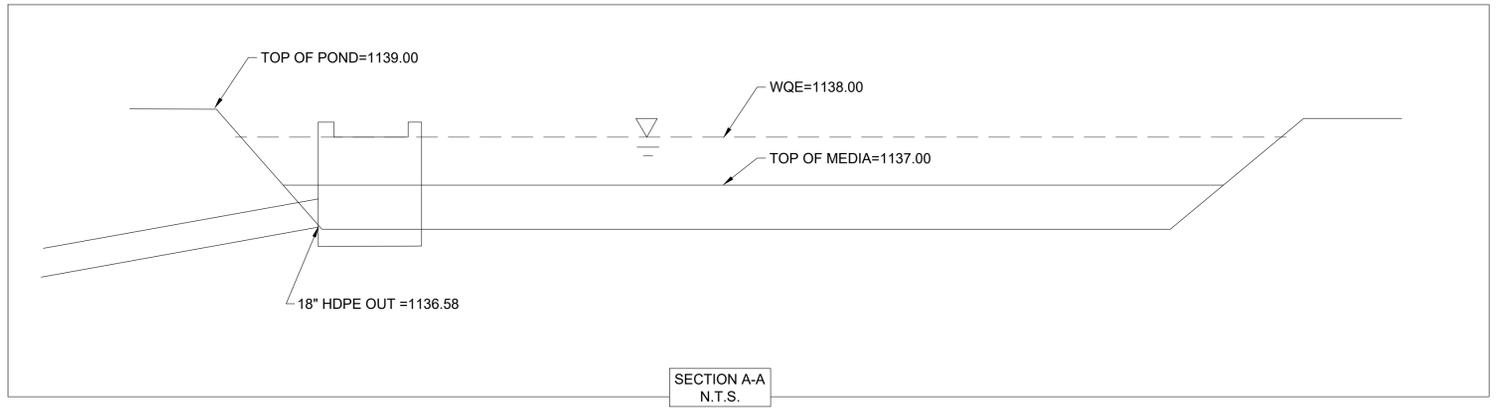
LEGEND		
EXISTING	PROPOSED	
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
	---	STORMDRAIN



SILVER CREEK
WQ PROJECT NO. 0104-002

APPENDIX R-11 RAIN GARDEN CALCULATIONS FOR DEVELOPMENT PERMITS			
Drainage Area Data:			
Drainage Area to Control (Max 2 Acres) =	1.5	acres	64500 sq ft
Drainage Area Percent IC =	0.28	%	
Capture Depth =	0.3028465	in	
Water Quality Control Calculations:			
	Required per TCEQ	Provided	
Water Quality Volume =	3227	cf	3380 cf
100 Year Peak Flow Rate to Control (Q100) =			
	12.70	cfs	7.6
Filtration Pond Area =			
			1837 sf
Depth of Ponding (D) =	Max. 1	ft	1 ft
Depth of Filtration Media (L) =	Min. 1.5	ft	3.5 ft
Effective Porosity WQV =			1543.08 cf
Ponded WQV =			1837 cf
	Total WQV		3380.08 cf
Water Quality Elevation =			
Elevation of Splitter/Overflow Weir =	(min. WQE)		1138 ft MSL
			1138 ft MSL
Length of Splitter Weir =			
			16 ft
Required Head to Pass Q100	Max. 0.5	ft	0.41 ft
Pond Freeboard Provided to Pass Q100 =	Min. 0.25	ft	0.25 ft
Top of Pond =			1138.66 ft MSL
Bottom of Pond (on top of filtration media) =			1137 ft MSL
Bottom of Pond (under filtration media) =			1133.5 ft MSL
48 Hour Max. Drawdown			
Depth of WQV =	4.5	ft	54 in
For Infiltration Rain Gardens			
Infiltration Rate (in/hr) =			1.12 in/hr
Rain Garden Pond Drawdown Time =			48.0 hr

NOTE: SEE RAIN GARDEN TSS REMOVAL CALCULATIONS SHEET FOR REQUIRED WATER QUALITY VOLUME CALCULATIONS.



- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]
 - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED

NO.	DATE	REVISION



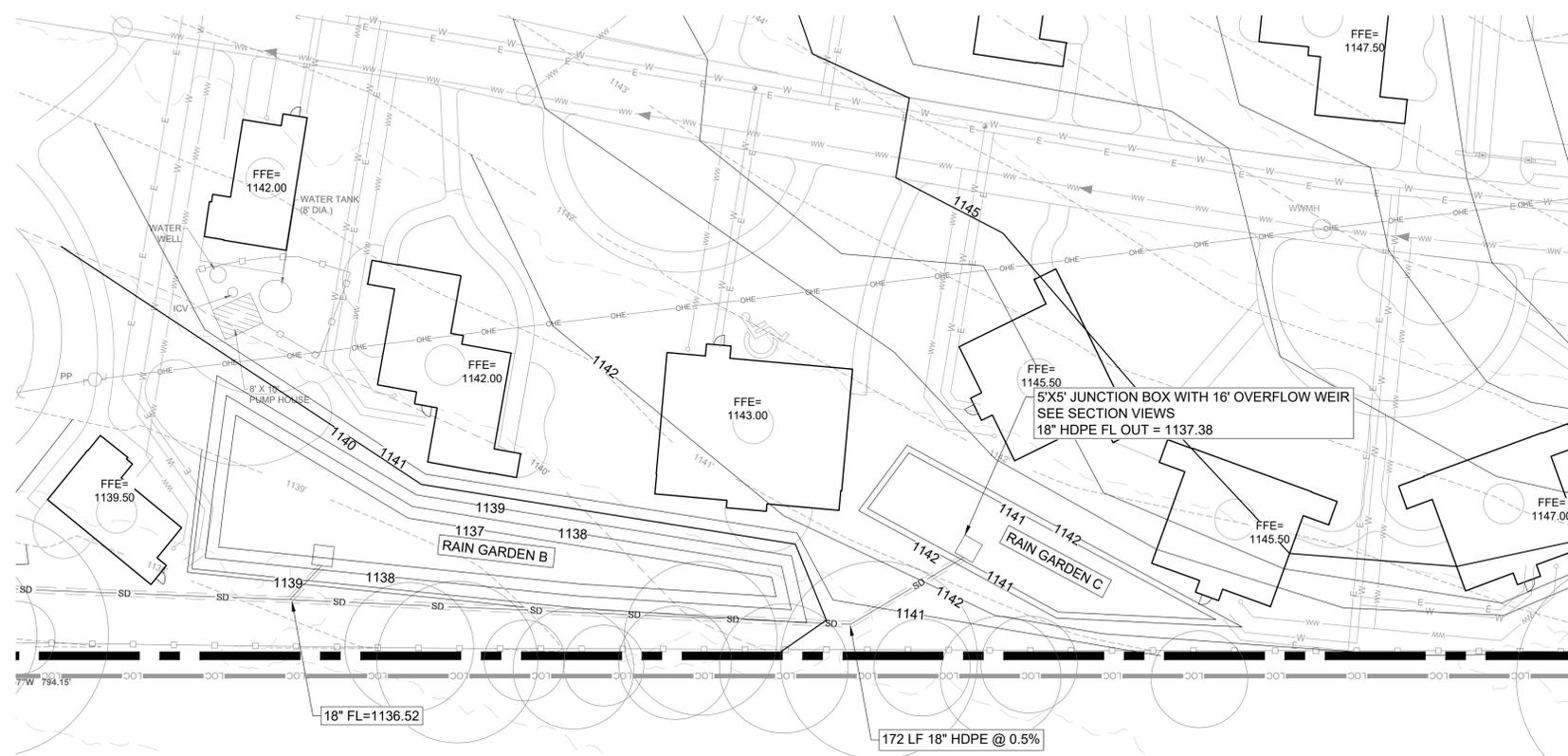
RAIN GARDEN B

SILVER CREEK
12800 SILVER CREEK ROAD

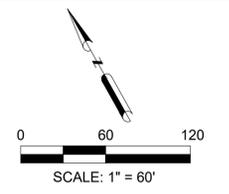


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LEGEND		
EXISTING	PROPOSED	
--- 535 ---	— 535 —	MAJOR CONTOUR
--- 527 ---	— 527 —	MINOR CONTOUR
	— SD —	STORMDRAIN



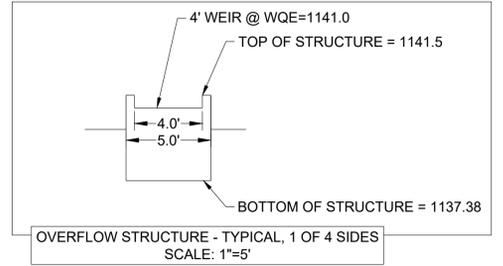
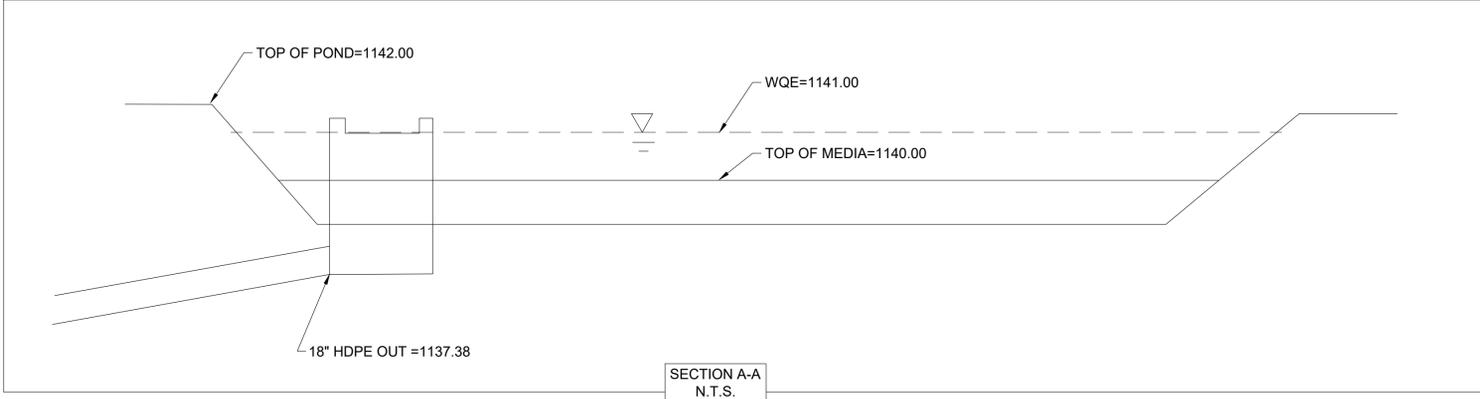
SILVER CREEK
WQ PROJECT NO. 0104-002

APPENDIX R-11 RAIN GARDEN CALCULATIONS FOR DEVELOPMENT PERMITS

Drainage Area Data:			
Drainage Area to Control (Max 2 Acres) =	1.32	acres	57687 sq ft
Drainage Area Percent IC =	0.39	%	
Capture Depth =	0.3039425	in	
Water Quality Control Calculations:			
	Required per TCEQ		Provided
Water Quality Volume =	2807	cf	2946 cf
100 Year Peak Flow Rate to Control (Q100) =	11.33	cfs	7.6
Filtration Pond Area =			1713 sf
Depth of Ponding (D) =	Max. 1	ft	1 ft
Depth of Filtration Media (L) =	Min. 1.5	ft	3 ft
Effective Porosity WQV =			1233.36 cf
Ponded WQV =			1713 cf
		Total WQV	2946.36 cf
Water Quality Elevation =		1141	ft MSL
Elevation of Splitter/Overflow Weir =	(min. WQE)	1141	ft MSL
Length of Splitter Weir =		16	ft
Required Head to Pass Q100	Max. 0.5	ft	0.38 ft
Pond Freeboard Provided to Pass Q100 =	Min. 0.25	ft	0.25 ft
Top of Pond =		1141.63	ft MSL
Bottom of Pond (on top of filtration media) =		1140	ft MSL
Bottom of Pond (under filtration media) =		1137	ft MSL
48 Hour Max. Drawdown			
Depth of WQV =	4	ft	48 in
For Infiltration Rain Gardens			
Infiltration Rate (in/hr) =		1.00	in/hr
Rain Garden Pond Drawdown Time =		48.0	hr

NOTE: SEE RAIN GARDEN TSS REMOVAL CALCULATIONS SHEET FOR REQUIRED WATER QUALITY VOLUME CALCULATIONS.

- NOTES:
- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
 - ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]
 - PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE
 - UNDER DRAIN SYSTEM REQUIRED FOR GROUND WATER COLLECTED



NO.	DATE	REVISION



RAIN GARDEN C

SILVER CREEK
12800 SILVER CREEK ROAD



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SHEET
33 OF 39

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Silver Creek**
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-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spr

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

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

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

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

County =	Hays	
Total project area included in plan =	14.98	acres
Predevelopment impervious area within the limits of the plan =	0.10	acres
Total post-development impervious area within the limits of the plan =	5.24	acres
Total post-development impervious cover fraction =	0.35	
P =	33	inches

$L_{M \text{ TOTAL PROJECT}} = 4614$ lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 4

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

Drainage Basin/Outfall Area No. =	A	
Total drainage basin/outfall area =	2.35	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.99	acres
Post-development impervious fraction within drainage basin/outfall area =	0.42	
$L_{M \text{ THIS BASIN}}$ =	892	lbs.

3. Indicate the proposed BMP Code for this basin

Proposed BMP = **Bioretention (Rain Garden)**
Removal efficiency = 89 percent

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

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

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

A_C =	2.35	acres
A_i =	0.99	acres
A_p =	1.36	acres
L_R =	1031	lbs

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

Desired $L_{M \text{ THIS BASIN}}$ = 955 lbs.

F = 0.93

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area Calculations from RG-348 Pages 3-36 to 3-37

Rainfall Depth =	2.20	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	5967	cubic feet

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

Storage for Sediment =	1193	
Total Capture Volume (required water quality volume(s) x 1.20) =	7160	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Silver Creek**
Date Prepared:

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

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

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

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

County =	Hays	
Total project area included in plan =	14.98	acres
Predevelopment impervious area within the limits of the plan =	0.10	acres
Total post-development impervious area within the limits of the plan =	5.24	acres
Total post-development impervious cover fraction =	0.35	
P =	33	inches

$L_{M \text{ TOTAL PROJECT}} = 4614$ lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 4

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

Drainage Basin/Outfall Area No. =	B	
Total drainage basin/outfall area =	1.48	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.42	acres
Post-development impervious fraction within drainage basin/outfall area =	0.28	
$L_{M \text{ THIS BASIN}}$ =	378	lbs.

3. Indicate the proposed BMP Code for this basin

Proposed BMP = **Bioretention (Rain Garden)**
Removal efficiency = 89 percent

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

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

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

A_C =	1.48	acres
A_i =	0.42	acres
A_p =	1.06	acres
L_R =	445	lbs

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

Desired $L_{M \text{ THIS BASIN}}$ = 410 lbs.

F = 0.92

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area Calculations from RG-348 Pages 3-36 to 3-37

Rainfall Depth =	2.00	inches
Post Development Runoff Coefficient =	0.25	
On-site Water Quality Volume =	2689	cubic feet

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

Storage for Sediment =	538	
Total Capture Volume (required water quality volume(s) x 1.20) =	3227	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Silver Creek**
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-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spr

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

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

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

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

County =	Hays	
Total project area included in plan =	14.98	acres
Predevelopment impervious area within the limits of the plan =	0.10	acres
Total post-development impervious area within the limits of the plan =	5.24	acres
Total post-development impervious cover fraction =	0.35	
P =	33	inches

$L_{M \text{ TOTAL PROJECT}} = 4614$ lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 4

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

Drainage Basin/Outfall Area No. =	C	
Total drainage basin/outfall area =	1.32	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.52	acres
Post-development impervious fraction within drainage basin/outfall area =	0.39	
$L_{M \text{ THIS BASIN}}$ =	469	lbs.

3. Indicate the proposed BMP Code for this basin

Proposed BMP = **Bioretention (Rain Garden)**
Removal efficiency = 89 percent

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

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

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

A_C =	1.32	acres
A_i =	0.52	acres
A_p =	0.80	acres
L_R =	543	lbs

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

Desired $L_{M \text{ THIS BASIN}}$ = 485 lbs.

F = 0.89

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area Calculations from RG-348 Pages 3-36 to 3-37

Rainfall Depth =	1.60	inches
Post Development Runoff Coefficient =	0.30	
On-site Water Quality Volume =	2339	cubic feet

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

Storage for Sediment =	468	
Total Capture Volume (required water quality volume(s) x 1.20) =	2807	cubic feet

		REVISION
		DATE
		NO.



RAIN GARDEN
TSS REMOVAL
CALCULATIONS

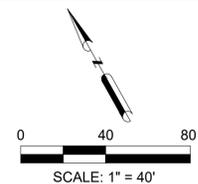
SILVER CREEK
12800 SILVER CREEK ROAD



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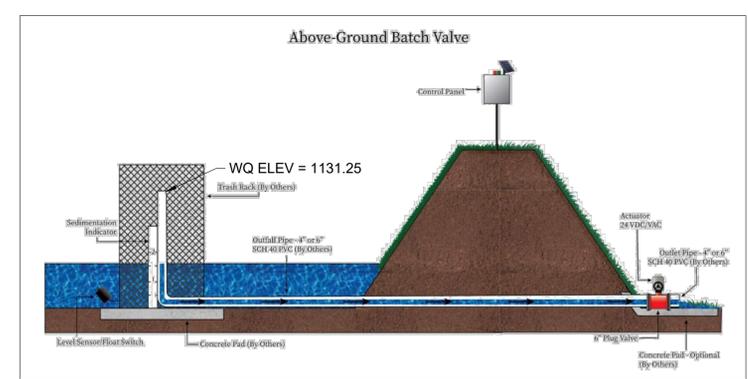
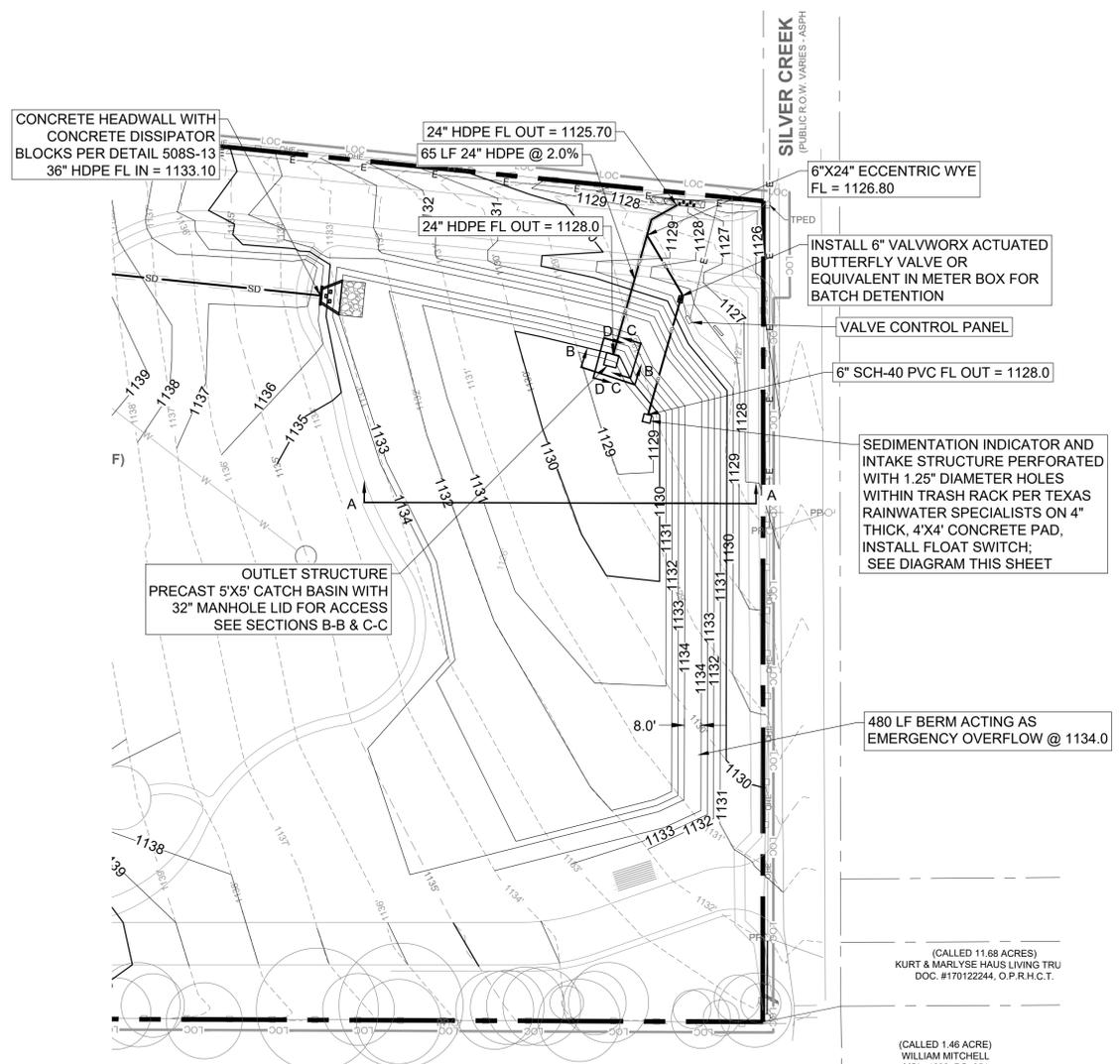
SHEET
34 OF 39



POND A ELEVATION TABLE	
TOP OF POND	1134.0
5' WEIR	1133.25
4' WEIR	1132.25
2' WEIR	1131.25
100 YR WSE	1133.8
25 YR WSE	1133.4
10 YR WSE	1133.1
2 YR WSE	1132.6
TOP OF WQ ELEVATION	1131.25

LEGEND		
EXISTING	PROPOSED	
	X 539.6	SPOT ELEVATION
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
---	---	STORMDRAIN

NOTES:
1. ALL POND BOTTOMS, SIDE SLOPES AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH COA STANDARD SPECIFICATION.



NOTE: SEE CIRCUIT BLOCK DIAGRAM AND SYSTEM LOGIC FLOW CHART ON STORM DETAILS SHEET.

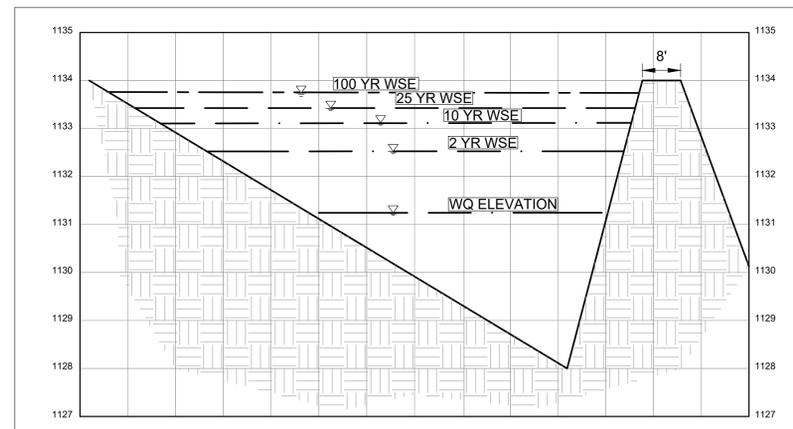
DETENTION POND A ELEVATION-AREA TABLE					
ELEV (FT)	AREA (SF)	AREA (AC)	AVG VOL (AC-FT)	CUMU VOL (AC-FT)	CUMU VOL (FT3)
1131.25	15988	0.36703	0.00	0.00	0
1132	20230	0.46442	0.31	0.31	13582
1133	29013	0.66605	0.57	0.88	38203
1134	34643	0.79529	0.73	1.61	70031

NOTE: REFER TO PDAM SHEET 30 FOR HMS RUNOFF SUMMARY AT EACH ANALYSIS POINT.

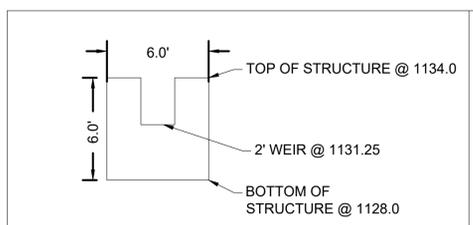
Sedimentation Pond Elevation-Area Table			
Stage(ft msl)*	Area(sf)	Storage(cf)	Storage Cumulative (cf)
1128	0	0	0
1129	1146	573	573
1130	5044	3095	3668
1131	13448	9246	12914
1131.25	15988	3680	16594

Water Quality Pond R-3 Table			
	Required per TCEQ		Provided
Drainage Area Data			
Drainage Area to Control	5.84	ac.	
Drainage Area Impervious Cover	50.2%	%	
Capture Depth (CD) = 0.5in + 0.1in[(DAIC-20%)/10]	0.80	in.	
Water Quality Control Calculations			
25-year Peak Flow Rate to Control (Q25)	33.7	cfs	
100-year Peak Flow Rate to Control (Q100)	50.4	cfs	
For Partial Sedimentation/Filtration Pond			
Water Quality Volume (CD*Drainage Area)	16413	cf	16594
Sedimentation Pond Area (WQV/10)	1659	sf	8907
Sedimentation Pond Volume (≥20%WQV)	3319	cf	16594
Filtration Pond Area (WQV/(4 + 1.33*H))	N/A	sf	N/A
Filtration Pond Volume	N/A	cf	N/A
Water Quality Elevation	1131.25	ft msl	

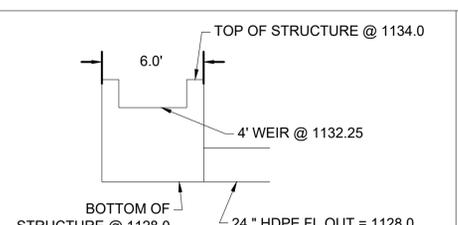
NOTE: SEE NEXT SHEET, POND A TSS REMOVAL CALCULATIONS FOR REQUIRED WATER QUALITY VOLUME AND LOAD REMOVALS.



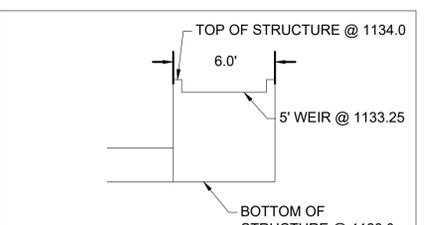
SECTION A-A
N.T.S.



SECTION B-B
SCALE: 1"=5'



SECTION C-C
SCALE: 1"=5'



SECTION D-D
SCALE: 1"=5'



**BATCH DETENTION
POND A**

SILVER CREEK
12800 SILVER CREEK ROAD



**WUEST GROUP
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5207 AIRPORT BOULEVARD
AUSTIN, TEXAS 78751
(512) 394-1900

Drawing: G:\0104-King-Development\002_12800 Silver Creek Ref (Dripping Springs)\CAD\Detention Ponds.dwg, Last Plotted: Wed Oct 25, 2023 - 10:33am, By: r.muhok

		REVISION
		DATE
		NO.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Silver Creek**
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-348.

Characters shown in red are data entry fields.

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

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

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

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

Site Data: Determine Required Load Removal Based on the Entire Project
 County = **Hays**
 Total project area included in plan = **14.98** acres
 Predevelopment impervious area within the limits of the plan = **0.10** acres
 Total post-development impervious area within the limits of the plan = **5.24** acres
 Total post-development impervious cover fraction = **0.35**
 P = **33** inches

$L_{M \text{ TOTAL PROJECT}} = 4614$ lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **4**

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

Drainage Basin/Outfall Area No. = **A**
 Total drainage basin/outfall area = **5.84** acres
 Predevelopment impervious area within drainage basin/outfall area = **0.07** acres
 Post-development impervious area within drainage basin/outfall area = **2.93** acres
 Post-development impervious fraction within drainage basin/outfall area = **0.50**
 $L_{M \text{ THIS BASIN}} = 2570$ lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Batch Detention**
 Removal efficiency = **91** percent
 RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

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

$A_C = 5.84$ acres
 $A_i = 2.93$ acres
 $A_p = 2.91$ acres
 $L_R = 3092$ lbs

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

Desired $L_{M \text{ THIS BASIN}} = 2800$ lbs.

$F = 0.91$

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-36 to 3-37

Rainfall Depth = **1.80** inches
 Post Development Runoff Coefficient = **0.36**
 On-site Water Quality Volume = **13678** cubic feet

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

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

Storage for Sediment = **2736**
 Total Capture Volume (required water quality volume(s) x 1.20) = **16413** cubic feet



Caroline Eckert

10/23/2023

POND A TSS REMOVAL CALCULATIONS

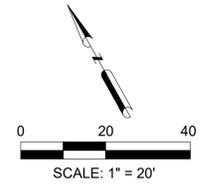
SILVER CREEK
12800 SILVER CREEK ROAD



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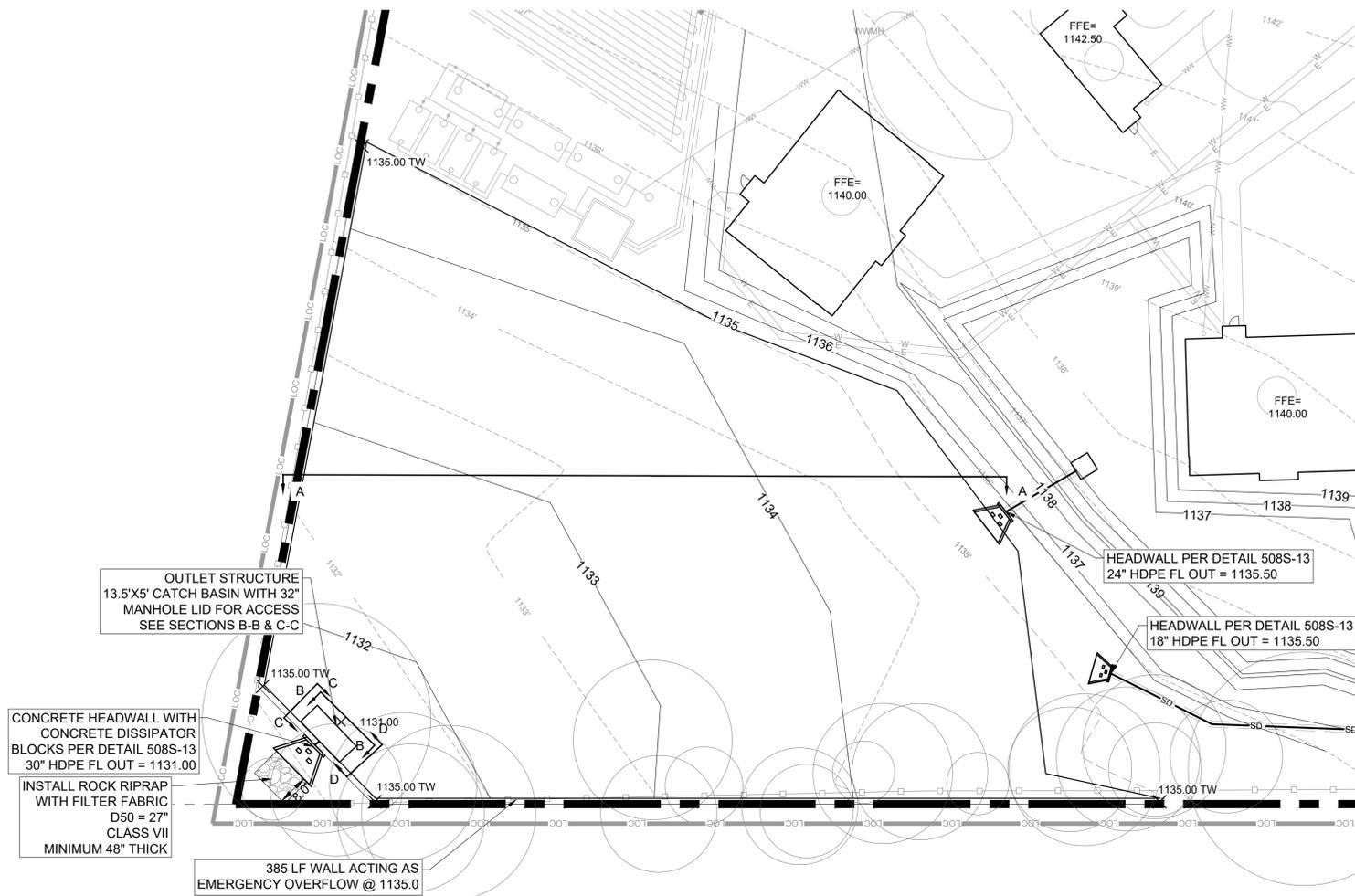
SHEET
36 OF 39



LEGEND		
EXISTING	PROPOSED	
	X 539.6	SPOT ELEVATION
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
	SD	STORMDRAIN

NOTES:
1. ALL POND BOTTOMS, SIDE SLOPES AND EARTHEN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH COA STANDARD SPECIFICATION.

NO.	DATE	REVISION



POND B ELEVATION TABLE	
TOP OF POND	1135.0
12' WEIR	1134.0
4' WEIR	1133.0
2' WEIR	1132.0
1.5' WEIR	1131.0
100 YR WSE	1134.6
25 YR WSE	1134.2
10 YR WSE	1134.0
2 YR WSE	1133.4

POND B ELEVATION-AREA TABLE					
ELEV (FT)	AREA (SF)	AREA (AC)	AVG VOL (AC-FT)	CUMU VOL (AC-FT)	CUMU VOL (FT3)
1131	0	0.00000	0.00	0.00	0
1132	1522	0.03494	0.02	0.02	761
1133	7057	0.16201	0.10	0.12	5051
1134	16138	0.37048	0.27	0.38	16648
1135	23616	0.54215	0.46	0.84	36525

NOTE: REFER TO PDAM SHEET 30 FOR HMS RUNOFF SUMMARY AT EACH ANALYSIS POINT.



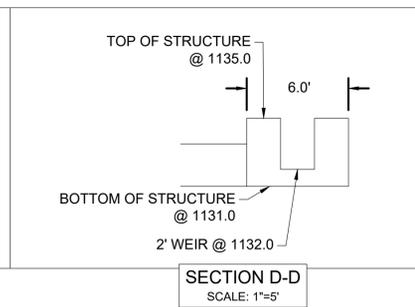
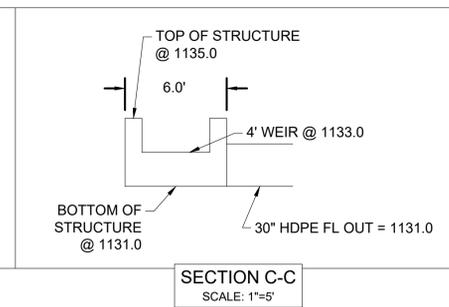
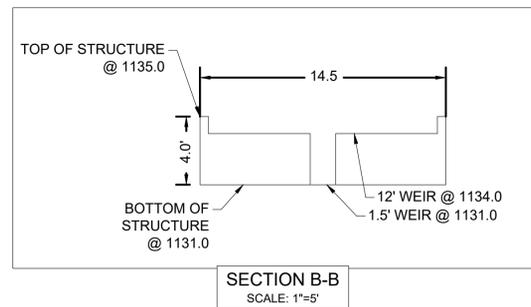
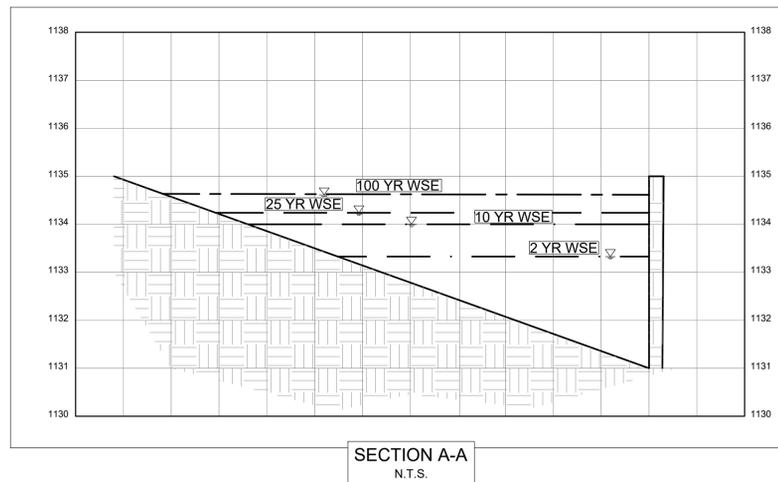
DETENTION POND B

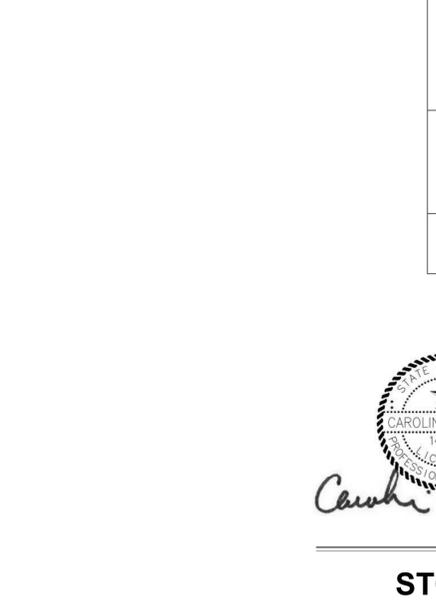
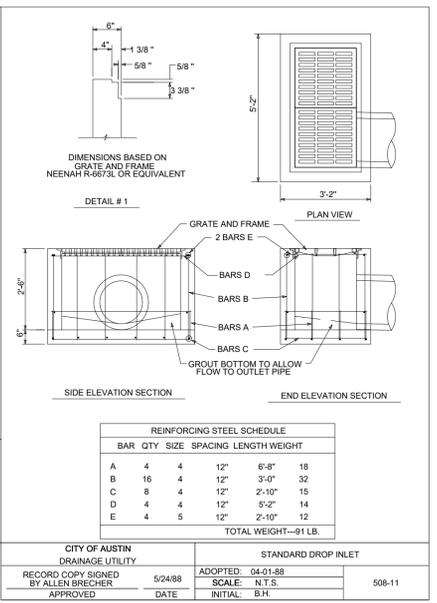
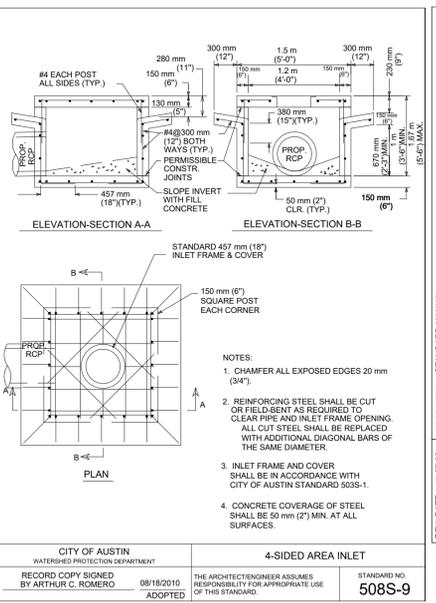
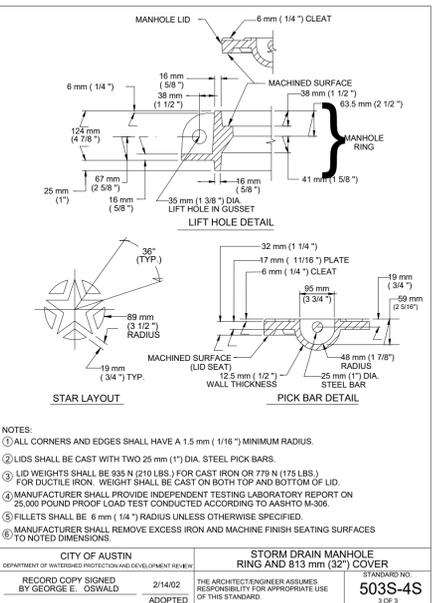
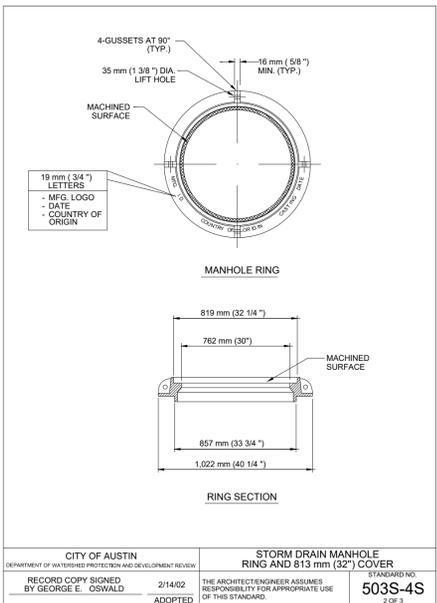
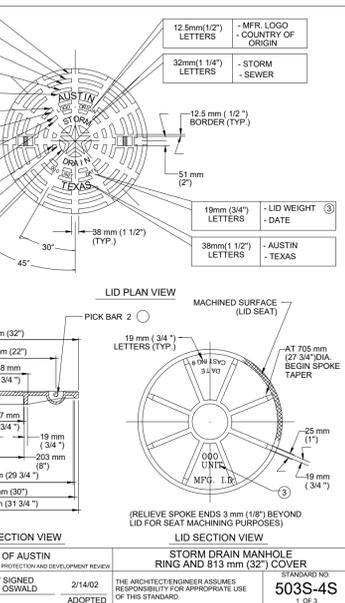
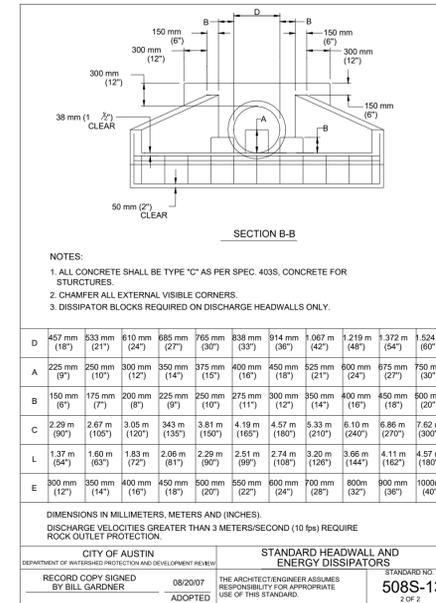
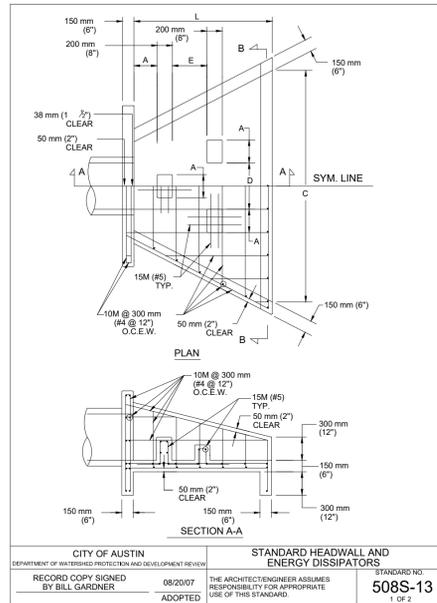
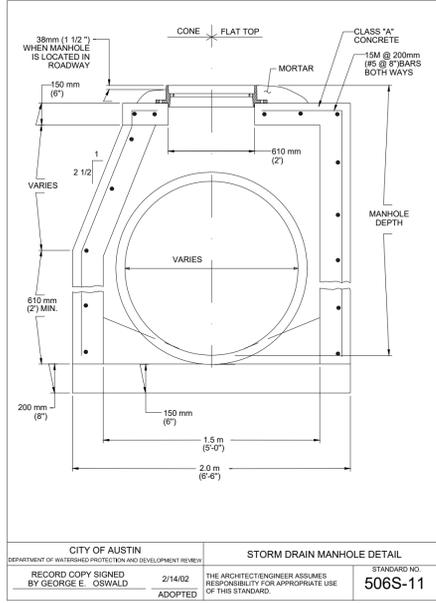
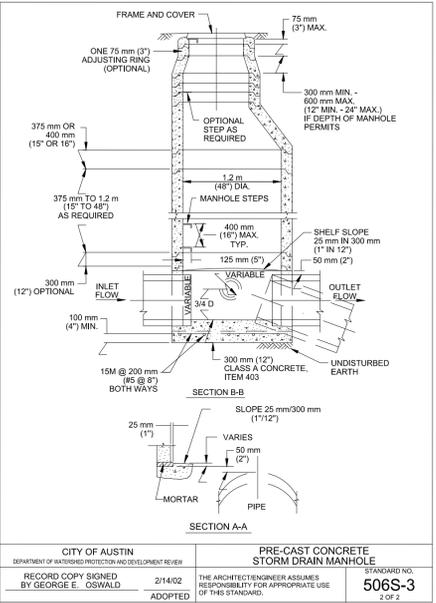
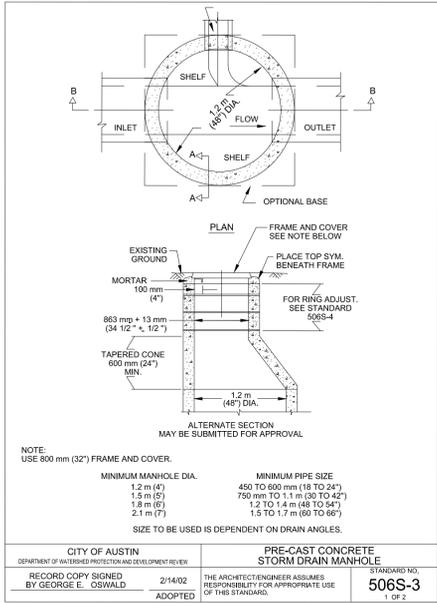
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SHEET
37 OF 39





Valworx Electric Actuated Butterfly Valves SERIES 5670
Ductile Iron Wafer Body ASME 150# 2" to 12" Pipe

Features

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

Applications

EPDM seals typically used for on-off control of water and other media compatible with the materials of construction. NBR (Buna-N) seals typically used for air, oil, vacuum and other media compatible with the materials of construction. Multi-standard options available for flanges: ANSI/ASME Class 150/150, DIN/DG PN10/PN16, BS10 Type D, E and JIS B2239 16K, 16K. Actuators designed for 70% duty cycle.

Operation

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

Construction

Valve Body	Epoxy coated ductile iron
Disc	316 stainless steel CF8M
Seat/Seat-Ring	EPDM/NBR (Buna-N)
Steel/Steel Seats	420 stainless steel / 21-vtyg same material as seat
Gear Drive	Heavy duty alloy steel/aluminum bronze, self-lubricating
Actuator Enclosure	Aluminum, powder coated paint, Type 4X, IP67
Visual Valve Position Indicator	Clear Polycarbonate cover, red/yellow open/closed
Fasteners	Stainless Steel
Auxiliary Limit Switches	2 x SPDT (SA125VAC), on-off actuators only

Doc 5670.1121 Cornelius, N.C. • USA www.valworx.com

Ground Mount Controller and Battery Enclosure

Standard finish is a bright white polyester powder-coat inside and out

- Heavy-duty stainless steel continuous
- Built to NEMA 3R specifications
- Seams are continuously welded and then sanded smooth
- Adjustable tension stainless steel padlock hasp
- Removable component mounting plate
- Two 7/8" diameter wire holes
- Filtered or screened ventilation louvers
- Hinged front door with PORCN door gasket
- Supplied with u-bolts (when pole specified)

LEVEL & PRESSURE

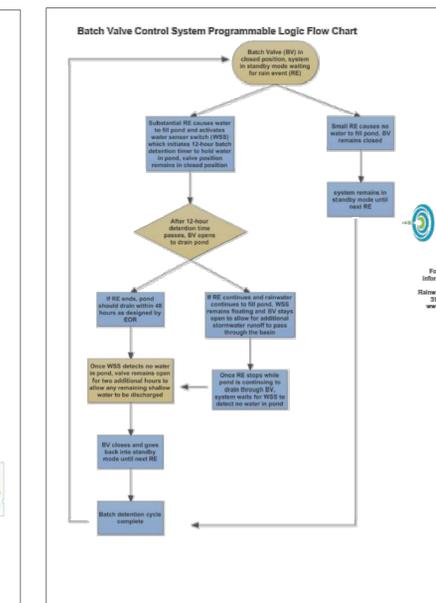
Auto-Flush® Signal-Duty Float Switches

Choose from manual or mechanical switch or float models

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Choose from manual or mechanical switch or float models

USA MADE We offer more than 52,000 products from 700 industry leading suppliers.



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38 OF 39



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