

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

(Addresses TPDES TXR150000 General Permit; Effective Date 03-05-2023)

FOR

PROJECT NAME
A-Affordable Storage
LOCATION
19790 TX-29 Liberty Hill, TX 78642



Operator (Primary)	A-Affordable Boat & RV Storage -Liberty Hill LLC
Project Description	Site development to support construction of a Boat and RV Storage with phasing to include excavation, utilities, paving, building, and landscaping.
Disturbed Area(s)	19.99 acres
Type of Construction Activity	Large Construction Activity >5acre
TCEQ Permit Documents	Construction Site Notice (CSN) Notice of Intent Application (NOI)

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This SWP3 Manual prepared by Terradyne Group LLC.

Please direct questions or need for assistance to:

A handwritten signature in black ink that reads "Gary Talley". The signature is written in a cursive style with a large initial "G" and "T".

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This SWP3 Narrative is written for the following project:

A-Affordable Storage

Located @ 19790 TX-29 Liberty Hill, TX 78642

SWPPP Preparation Date: 06/20/2023

Operator:

A-Affordable Boat & RV Storage -Liberty Hill LLC	Operator in control of daily operations
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Estimated Construction Phase Schedule			
	Phase	Estimated Start	Estimated Stop
	Overall Project	5-1-2023	9-1-2023
A	Demolition		
B	Site Clearing & Grading	6-1-2023	7-15-2023
C	Underground Utilities		
D	Sediment Basin Installation		
E	Final Site Stabilization		9-1-2023

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INTRODUCTION

This SWP3 document outlines procedures that address the current March 5, 2023 requirements of the TPDES General Permit Number TXR150000 Relating to Storm Water Discharges Associated with Construction Activities. The current regulations expire at midnight on March 5, 2023. During construction, all operators and their contractors and subcontractors must comply with the General Permit requirements; a copy of which is included in this manual.

This document is intended to be the narrative which when combined with the erosion and sediment control drawing for this project forms the basis of the SWP3.

The SWP3 should be revised as needed to accommodate additional regulations or ordinances that local municipalities, the State of Texas or the Federal government may require.

The TXR150000 General Permit authorizes defined Operator's to discharge the following from the construction site and from offsite support areas:

- Storm Water Runoff

- Discharges of Storm Water associated with Construction Support Activities
As defined in TXR150000 Part II.A.2

- Non-Storm Water Discharges
As defined in TXR150000 Part II.A.3

The following acronyms are used throughout this manual:

- BMP- Best Management Practices
- CSN- Construction Site Notice
- MS4- Municipal Separate Storm Sewer System
- NOC- Notice of Change
- NOI- Notice of Intent
- NOT- Notice of Termination
- SWP3- Storm Water Pollution Prevention Plan
- TCEQ- Texas Commission on Environmental Quality

INSTRUCTIONS / PROCEDURAL REQUIREMENTS

A. Prior to initial earth disturbing activity, complete all of the following:

1	Review manual and complete Section 1: SWP3 Signature Documents Note: Follow instructions for distribution of SWP3 documents.
2	Review Section 3 for selection of appropriate BMPs and erosion/sediment controls for this site. Implement practices and install controls in accordance with the schedule for the various phases of earth disturbing activities.
3	Post a SWP3 Sign displaying the signed CSNs (Construction Site Notice) at the project entrance for public viewing (Owner's and Contractor's)
4	Provide Section 6: SWP3 Site Inspection Reports and corrective actions.
5	Provide record keeping information in Section 7: SWP3 Logs
6	Review the following Introduction- Section B: On-Going Requirements
7	Review the following: Introduction-Section C: End of Project-Terminating the Permit
	Important Note: Provisional Authorization Period <ul style="list-style-type: none"> • Small Construction Activities requiring a signed CSN are provisionally authorized immediately.
	Important Note: <ul style="list-style-type: none"> • Retain proof of all mailings and postmark dates.

B. On-Going Requirements

<p>1</p>	<p>SWPPP Site Inspections, Corrective Action and Record Keeping</p> <p>The Operator must conduct scheduled inspections to assure compliance with this SWPPP. Based on inspection results, the SWPPP may require modification to assure the quality of storm water or non-storm water discharge is leaving the site in compliance with the Storm Water Regulations. Written inspections by the Operator designee or its 3rd party designee are intended to verify site compliance or identify non-compliance issues needing correction.</p> <p>Responsibilities of the Operator’s site manager or supervisor include:</p> <ul style="list-style-type: none"> • Inspection reports should be read immediately • Initiate Corrective Actions in a timely manner to maintain effective controls. • Perform record keeping in the SWP3 (See Section 7: SWP3 Logs).
<p>2</p>	<p>SWPPP Revisions and NOC (Notice of Change) Form</p> <p>Revise the SWPPP as follows:</p> <ul style="list-style-type: none"> • To reflect new Operators on-site or new areas of responsibility that may be added. • Update in writing each time there are significant modifications to construction design activities requiring additional or modified BMP controls & practices. • Amend the SWPPP at any time if it is found to be inadequate in addressing conditions of the TPDES General Permit or any amendments to the permit. • Submit changes of significant information to TCEQ via the NOC (Notice of Change) Form as defined in TXR150000 General Permit Part II.Section E.6. • A copy of the NOC Form is located in Section 1 of this SWP3 Manual.
<p>3</p>	<p>SWPPP Plan Review</p> <p>The SWPPP and supporting documents should be available for review by keeping on-site if possible or post the location and contact information if kept off-site.</p> <ul style="list-style-type: none"> • State regulations require the SWPPP and supporting documents be available for at least 3 years after termination of permit. This provision ensures that all records are available in the event the documents need to be reviewed. • All records and supporting documents should be compiled in an orderly fashion. • The SWP3 is not submitted to TCEQ unless the Executive Director specifically requests a review copy which if requested should be submitted in a timely manner. • Review can be requested by state or local municipal operator with a storm water permitted municipal separate storm sewer system (MS4).
<p>4</p>	<p>SWPPP Record Keeping</p> <p>Record keeping by the Operator’s project supervisor is very important as the Operator can be audited by various agencies such as the local municipality, TCEQ and EPA. Potential of fines exist for lack of documentation and failure to implement an effective SWPPP. The SWPPP Manual can be audited for accuracy at any time.</p> <p>Operator’s project supervisor is required to provide the following record keeping (See Section 7: SWP3 Logs):</p> <ul style="list-style-type: none"> • Written inspection reports dated entries in the SWP3 Logs and SWP3 Site Map Drawing (accurate depiction of controls and location of sources of pollution). • Record all revisions to the SWPPP as may be necessary.

5	Hazardous Substance Discharge/Spills In the event of a spill of a hazardous substance, the operator is required to notify the National Response Center (1-800-424-8802) to report the spill and the Department of Public Safety Station No. 4 at (972) 574-7725 for assistance in cleanup of the spill. In addition, the operator shall submit a written description of the release (including the type and amount of material released, the date of the release, the circumstances of the release, and the steps to be taken to prevent future spills) to the EPA regional office in Dallas. The SWPPP must be revised within 14 calendar days after the release to reflect the release, stating the information above along with modifications to minimize the possibility of future occurrences. Each contractor and subcontractor is responsible for complying with these reporting requirements.
6	Phased BMP and Structural Controls Provide BMP and erosion/sediment controls as needed for each phase of construction. Refer to SWP3 Manual for phasing of controls.
7	Site Supervisor's Checklist Site manager should provide the following: <ul style="list-style-type: none">• Practice 'Good House Keeping' on a daily basis: Pick-up trash and floatable debris on and off the construction site, clean offsite streets, clean and repair storm drain inlet protectors, provide dust control, repair damaged controls prior to next rain event.• Add improved controls as needed when existing controls are not adequate.• Review all SWP3 logs and record necessary information.• Initiate temporary stabilization of disturbed areas within 14 days where construction activity will cease for more than 21 days. (ie. vegetation, perimeter controls or other measures such as erosion mat or rock).

8**Disclaimer: Important information**

This book is a guide and workbook for the permitted Operator to choose BMPs to keep the site in compliance to the TXR150000 Storm Water Discharge Regulations for General Construction Activity. This Narrative does not attempt to provide for the design of the site's erosion & sediment control. Design for erosion & sediment control should be sourced from a qualified Civil Engineer. However, sites are considered dynamic when it comes to storm water runoff design so changes to BMP controls are often necessary as compared to the original civil design.

Changes and deviations to the original Civil Design are captured with notations on required 'SWPPP site maps' and with SWPPP Log information. The SWPPP operator through their representative or their 'SWPPP designee' (ie. Site Superintendent) should become totally familiar with the contents of this manual. Some primary duties are to create written inspection reports for identifying non-compliance issues, to capture data in the SWPPP Logs that are provided in the SWPPP Narrative and create updates to the SWPPP Site Map.

The civil engineer's 'Erosion & Sediment Control' drawing, if available for this project, is normally used as the basis for the SWPPP Site Map and for adding future hand notations regarding changes and revisions to the BMP controls. If a civil drawing is not available, a schematic should be provided indicating location of BMP controls and other items defined in the regulations such as dirt stock piles portable toilets, concrete washouts, storm water outfalls, drainage arrows etc.

Updates and entries to the SWPPP Logs and SWPPP Site Map is the responsibility of the SWPPP site designee (ie. site superintendent) and possibly in conjunction with a 3rd party SWPPP Inspector, if a 3rd party inspector has been hired for this site. Log entries should include capturing accurate BMP locations, removal of controls, location of site stabilization, etc. The 3rd Party SWPPP Inspector has a basic duty of providing a written report of 'observations of noncompliance items'. The 3rd Part Inspector can often assist the site SWPPP Designee, ie. site superintendent, in entering data into the SWPPP record such as SWPPP Logs and SWPPP site map. Failure to include this data may result in violations & fines by city, state or federal environmental officers, if an audit is performed, so choosing not to perform these tasks represent risk to your project operations. Failure to respond to noncompliance items such as needs for repairs, cleaning of BMP controls or needs for additional controls is not acceptable and can result in violations with possible fines.

C. End of Project: Terminating the Permit

Conditions of Termination

Operator's permit must be terminated within 30 days after any of the following conditions occur:

1. Final stabilization achieved on all portions of the site where permittee is responsible.
2. A transfer of operational control has occurred (Review TXR150000 Section II.F.4.).
3. Operator obtained alternative authorization under an individual or general TPDES permit.

Small Construction Activities

Each operator that has obtained automatic authorization and has **not** been required to submit an NOI must remove the site notice, complete the applicable portion of the site notice related to removal of the site notice, and submit a copy of the completed site notice to all other Operators, including new Operators, and 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).

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

Large Construction Activities

Each operator that has submitted an NOI for authorization under this general permit must apply to terminate that authorization by submitting a Notice of Termination (NOT) on a form supplied by the executive director.

A copy of form located in Section 1 of this SWP3 Manual).

Authorization to discharge under this general permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to all other Operators, including new Operators, and to the operator of any MS4 receiving the discharge 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).

D. Documentation of Compliance with Approved State and Local Plans

1	<p>The SWP3 must be revised to be consistent with requirements specified in applicable sediment and erosion control site plans or site permits or storm water management site plans or site permits approved by federal, state or local officials. (Include local storm water pollution ordinances).</p> <p>Permittee will revise this SWP3 as needed to allow compliance with all current local, state and federal regulations regarding procedural requirements and controls required for storm water pollution prevention.</p>
2	<p>The SWP3 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 storm water management site plans or site permits approved by state or local official for which the permittee receives written notice.</p>
3	<p>If the permittee is required to prepare a separate management plan, including but not limited to a Water Pollution Abatement Plan 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.</p>
4	<p><u>City of Liberty Hill, Texas</u> erosion control ordinance (s).</p>



03.05.23 ADDENDUM 1

REVISIONS TO TXR150000 STORMWATER DISCHARGE REGULATIONS

03.05.23 ADDENDUM 1

New Regulations:

This addendum 1 references the new TXR150000 regulations issued March 5, 2023 listing 'revisions and new requirements' to the TXR150000 Construction General Permit. The permitted Operator's SWP3 representative(s) (SWP Designee, Project Manager, Site Superintendent, Safety & Swp3 Manager) is advised to **'read the following and immediately implement all requirements listed'**. Some of the requirements are a) procedural and some are b) SWP3 BMP implementation.

Note: Those items noted with an asterisk * are considered changes to the previous TXR150000 regulation and **full adherence is required** by the Operator(s) to stay in compliance with their stormwater discharge permit.

PROCEDURAL INFORMATION regarding the TXR150000 Construction General Permit (CGP)

READ the following information regarding your permit and compliance procedures and requirements.

Note: The general permit and your authorized permit will automatically terminate at midnight on March 5, 2028.

***revision to prior CGP**

Acronym(s)

1. Acronym CGP (Construction General Permit).
2. Acronym CSN (Construction Site Notice).
3. Acronym NOI (Notice of Intent). See CGP page 9.
4. Acronym NOC (Notice of Change). See CGP page 9.
5. Acronym NOT (Notice of Termination). See CGP page 9.
6. Acronym MS4 (Municipal Separate Storm Sewer System). See CGP page 9.

PART I (TXR150000 pages 5-12): Flow Chart and Definitions

1	Read the definition of <u>Commencement of Construction</u> , <u>Construction Activity</u> and <u>Construction Support Activities</u> CGP Part I.B. Definitions (pg 6).	*
2	Read the modified the definition of Dewatering CGP Part I.B. Definitions (pg 6)	*
3	Updated hyperlink to Edward Aquifer Map Viewer under definition for Edwards Aquifer CGP I.B. Definitions (pg 7)	*
4	Read the modified language to the Waters of the United States CGP I.B. Definitions (pg 12).	*
5	Added definition of High-Level Radioactive Waste CGP I.B. Definitions (pg 8).	*

PART II (Txr150000 pages 13-27): Permit Applicability and Coverage**Section A: Discharges Eligible for Authorization:**

6	The CGP authorizes discharges from 'emergency fire-fighting activities'. Note: Does not include washing of trucks, run-off water from training activities, test water from fire suppression systems or similar activities). CGP Part II.A.3.a. (pg 13)	*
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Section C: Limitations on Permit Coverage

7	The CGP does not limit the ability of additional or more stringent requirements by federal, state or local government entities. CGP Part II.C.7. removes an out of date reference to local government code.	*
8	The CGP cannot authorize discharges from the construction of a new facility that is licensed for the storage of High-Level Radioactive Waste. CGP Part II.C.12 (pg16)	*

Section E: Obtaining Authorization to Discharge

9	Low Potential for Erosion: Small construction site operators must meet conditions (a)-(h) prior to commencing construction activities. CGP Part II.E.1 (pg 17)	*
10	If signatory authority is delegated by an authorized representative, then Operators of Small Construction Activities are to submit via mail the Delegation of Signatories Form on the approved TCEQ paper form. New form submittal is required if the delegation changes to another individual or position. CGP Part II.E.2.(e) (pg 19)	*
11	Operators of Large Construction Activities <u>must submit an NOI electronically using the online e-Permits system on TCEQ's website</u> prior to commencing construction activities. Upon confirmation of the receipt of the electronic form by TCEQ, authorization is immediate. CGP Part II.E.3.b (pg19)	*
12	If signatory authority is delegated by an authorized representative, then Primary Operators of Large Construction Activities are to submit via electronically through TCEQ STEERS system the Delegation of Signatories Form. New form submittal required if delegation changes to another individual or position. CGP Part II.E.3.(e) (pg 20)	*
13	Large CSN's must be maintained until final stabilization has been achieved. CGP Part II.E.3.(c) (pg 20)	*

14	Operators with an electronic reporting waiver: must submit a completed paper NOI to TCEQ within 7 days prior to commencing construction activity to obtain provisional coverage 48 hours from the postmark date for delivery to the TCEQ. CGP Part II.E.3.b (pg20); Part II.E.5.b (pg21)	*
15	A NOI must contain at a minimum the information listed in CGP II.E.8. page 22.	
16	The NOI must include an estimate for the start and end date of construction activity. CGP Part II.E.8.e (pg23)	*
17	The NOI must include confirmation that the construction activities are not associated with a facility licensed to store high-level radioactive waste by the USNRC. CGP Part II.E.8.h (pg 23)	*

Section F: Terminating Coverage

18	Compliance with the conditions and requirements of the CGP is required until a NOT is submitted and approved by the TCEQ. CGP Part II.F.1 (pg24)	*
19	For Small Construction Sites and for Secondary Operators, the CSN must be maintained until final stabilization has been achieved. CGP Part II.F.3 (pg 25)	*

Section G: Waivers from Coverage

20	Submit waiver applications electronically unless applicants obtain electronic reporting waiver. CGP Part II.G.1 (pg 25)	*
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SWP3 CONTENT INFORMATION regarding the SWP3

READ the following information regarding your SWP3 requirements.

***Revision to prior CGP**

PART III: Storm Water Pollution Prevention Plan

21	The SWP3 is used to comply with effluent limits and other permit conditions and that Part IV of the permit establishes additional effluent limits. CGP Part III (pg 29)	*
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SECTION B: Responsibilities of Operators

22	The SWP3 must identify portions of the project where each operator has control. CGP Part III.B.1 (pg30)	*
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SECTION E: Revisions and Updates to SWP3

23	Revisions and updates to the SWP3 include Site Map changes. CGP Part III.E. (pg 32)	*
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SECTION F: Contents of SWP3

24	Detailed site map to include: property boundaries, drain patterns, approximate before and after graded slopes, demolition activity, soil disturbance areas. CGP III.F.1.g (pg 33)	*
25	Maintain a copy of the Delegation of Signatories form submitted to TCEQ in the SWP3 record. Make it available for review upon request by TCEQ or the local MS4 Operator. CGP III.F.1.i. (pg 33)	*
26	Language added to Part III.F.2.a and Part III.F.2.c. for consistency with federal effluent limitations for BMPs used to minimize pollution in runoff. CGP III.F.2.a and III.F.2.c (pg 34,35,36)	*
27	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. CGP III.F.2.c.i.a.1 (pg 36)	*
28	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. CGP III.F.4.a (pg 37)	*
29	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. CGP III.F.4.e (pg 37)	*

<p>30</p>	<p><u>Observation and Evaluation of Dewatering Controls Pursuant to Part IV.C. of this General Permit:</u></p> <p>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 (Signatories to Reports).</p> <p>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:</p> <p>(A) date of the observations and evaluation;</p> <p>(B) name(s) and title(s) of personnel making the observations and evaluation;</p> <p>(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);</p> <p>(D) estimates of the rate (in gallons per day) of discharge on the day of evaluation;</p> <p>(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</p> <p>(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.</p> <p>---</p> <p>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).</p> <p>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.</p> <p>CGP III.F.7 (pg 38,39)</p> <p>---</p> <p>See attached suggested <u>Observation Evaluation Form</u>.</p> <p>Note: The Operator will need to implement the reporting requirement thru onsite personnel such as the Project Manager or Site Supervisor. Suggest they communicate with all onsite sub-contractors this compliance requirement especially after rain events. This applies to De-watering activities that discharge past the project limits.</p>	<p>*</p>
<p>31</p>	<p>Reflect the current inspection schedule in the SWP3 record. Inspection frequency can be changed within the first 5 days of a calendar month and the reason for the schedule change.</p> <p>CGP III.F.8.c.vi. (pg40)</p>	<p>*</p>

32	<p>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: the date and time of the adverse condition, names of personnel that witnessed the adverse condition, and a narrative for the nature of the adverse condition.</p> <p>CGP III.F.8.e. (pg 41)</p>	*
33	<p>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.</p> <p>CGP III.F.8.g (pg42)</p>	*
34	<p>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.</p> <p>If necessary, <u>modify your site map to reflect changes</u> to your stormwater controls that are no longer accurately reflected on the current site map.</p> <p>CGP III.F.8.h (pg 42)</p>	*

PART IV: Erosion and Sediment Control Requirements Applicable To All Sites

35	<p>Review CGP Part IV page 42 for discharge to achieve at a minimum the effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology (BPT) currently available to satisfy the Effluent Limitation Guideline (ELG) permitting requirements for application of the additional standards listed in this Part IV section.</p> <p>CGP IV (pg 42)</p>	*
36	<p>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).</p> <p>CGP IV (pg 42)</p>	*

SECTION C: Dewatering

37	<p>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 <u>observe and evaluate</u> the dewatering controls once per day while the dewatering discharge occurs as described in Part III.F.7. of this general permit. CGP IV.C. (pg44)</p> <p>See attached suggested <u>Observation Evaluation Form</u>.</p> <p>Note: The Operator will need to implement the reporting requirement thru onsite personnel such as the Project Manager or Site Supervisor. Suggest they communicate with all onsite sub-contractors this compliance requirement especially after rain events. This applies to De-watering activities that discharge past the project limits.</p>	*
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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:

38	<p>Minimize exposure of wastes to precipitation, stormwater, and wind CGP IV.D.3 (pg 44)</p>	*
39	<p>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. CGP IV.D.4 (pg 44)</p>	*
40	<p>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. CGP IV.D.5 (pg 44)</p>	*
41	<p>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. CGP IV.D.6 (pg 44)</p>	*

Section F. Surface Outlets

42	<p>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. CGP IV.F (pg 45)</p>	*
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SECTION 1: SWP3 Signature Documents

- A. Operator Certification Statement
- B. TCEQ Construction Site Notice (CSN)
- C. TCEQ Delegation Letter
- D. Endangered Species and Historic Places Acknowledgement
- E. Operator Responsibilities
- F. TCEQ Notice of Intent (NOI) Application
- G. TCEQ NOI Payment
- H. TCEQ Notice of Change (NOC)
- I. TCEQ Notice of Termination (NOT)

INSTRUCTIONS

	Note: Read the next page titled "Signature Requirement defined by 30 TAC §305.44" to determine who can provide an authorized signature.
A	Sign Operator(s) Certification Statement for the Owner and the Contractor(s) Operator.
B	Operator(s) TCEQ Construction Site Notice (CSN). Follow instructions for distribution.
C	Sign the TCEQ Delegation of Authorized Signature letter and mail to the TCEQ address shown.
D	Read and sign the Endangered Species and Historic Places Acknowledgement
E	Review the list of Operator Responsibilities and make necessary revisions if needed.
	Additional requirements: For Large Construction Activities only (>5 acres)
F	Review, complete and sign the TCEQ NOI Application(s) for Operators. Follow instructions for distribution.
G	Complete and mail the NOI Payment Submittal Fee Form with attached check of \$325 payable to TCEQ. (Note: NOI submittal via TCEQ website is \$225.)
	Important Note: Copy all mailed documents and proof of postmark to the SWP3 Record Book.

	Additional requirements: For Large Construction Activities only (>5 acres)
H	Submit a NOC (Notice of Change) Form when significant information changes on the NOI Application.
I	Submit a NOT (Notice of Termination) Form when permit termination conditions are satisfied.

SECTION 1A: SWP3 Signature Documents for:
A-Affordable Boat & RV Storage -Liberty Hill LLC

- A. Operator Certification Statement
- B. TCEQ Construction Site Notice (CSN)
- C. TCEQ Delegation Letter
- D. Endangered Species and Historic Places Acknowledgement

INSTRUCTIONS

	Note: Read the next page titled "Signature Requirement defined by 30 TAC §305.44" to determine who can provide an authorized signature.
A	Sign Operator(s) Certification Statement and file in the SWP3 Record
B	Operator(s) TCEQ Construction Site Notice (CSN). 1. Review for accuracy 2. Follow instructions for distribution.
C	Sign the TCEQ Delegation of Authorized Signature letter and send by certify mail to the TCEQ address shown.
D	Read and sign the Endangered Species and Historic Places Acknowledgement File in SWP3 Record

Signature Requirement defined by 30 TAC §305.44

The purpose of this document is to clarify the signature requirements for SWPPP Certification Statements, Notice of Intent application, TCEQ Construction Site Notice , Notice of Termination and TCEQ Signature Delegation Letter subject to 30 Texas Administrative Code (TAC) section (§)305.44. Signature on these documents must meet the requirements as defined below:

For Corporations:

The regulation governing who may sign an application form is 30 TAC §305.44(a)(1). According to this provision, any corporate representative may sign an application form so long as the authority to sign such a document has been delegated to that person in accordance with corporate procedures. By signing the application form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

For Municipality or other Government Entity:

The regulation governing who may sign an application form is 30 Texas Administrative Code §305.44(a)(3). According to this provision, only a ranking elected official or principal executive officer may sign an application form. Persons such as the City Mayor or County Commissioner are ranking elected officials. The principal executive officer may be identified in your city charter, county or city ordinances, or the Texas statute(s) under which your governmental entity was formed. An application form that is signed by a governmental official who is not a ranking elected official or principal executive officer does not conform to §305.44(a)(3). The signatory requirement may not be delegated to a government representative other than those identified in the regulation. By signing the application , you are certifying that you are either a ranking elected official or principal executive officer. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

30 Texas Administrative Code §305.44. Signatories to Applications.

All applications shall be signed as follows:

- (1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.
- (2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.
- (3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

A. OPERATOR CERTIFICATION STATEMENT**Instructions:**

Sign the following certification and file in the SWPPP Manual. Do Not Send to TCEQ.

The following Operator has control of those items marked with an 'X':

Operator Name	A-Affordable Boat & RV Storage -Liberty Hill LLC
Project Name	A-Affordable Storage

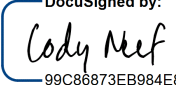
Operational Control

Control over construction plans & specifications, including the ability to make modifications to those plans and specifications (e.g. the Developer or Owner)	X
Control of day-to-day operational control of those activities at the project to ensure compliance with a SWPPP for the site or other permit conditions (e.g., General Contractor)	X

Certification Statement

- Sign the following certification prior to the beginning of earth disturbing activities.
- Persons signing this certification must do so in compliance with the signatory requirements of the permit as found in 30 TAC 305.44. Refer to prior "Signature Requirement" in this section of the manual for definition.

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

Signature	DocuSigned by:  99C86873EB984E8...
Printed Name	Cody Neef
Date	6/21/2023

B. TCEQ CONSTRUCTION SITE NOTICE Site (CSN)**Instructions: Complete the following.**

1	<p>CSN Permit: The following CSN (Construction Site Notice) for all Operators must be filed in the SWPPP Manual. Do not send to TCEQ.</p>
2	<p>SWP3 Sign: Post a copy of all Operators CSN at the construction site in a location where it is safely and readily available for viewing by the general public, local, state and federal authorities, prior to commencing construction and maintain the notice in that location until completion of the construction activity. Linear projects such as roads or pipelines may be relocated as necessary.</p> <p>Note: If Terradyne Group is providing the sign, fax a copy of the signed CSN (s) to 972-618-1224 or scan and email to talleyntex@aol.com</p>
3	<p>Submittal of CSN copy</p> <p>Small Construction Activity: Sites with disturbed areas over 1 acre but less than 5 acres (include offsite areas).</p> <p>All Operators, provide a copy of the signed CSN at least 2 days prior to commencing construction activities to:</p> <ul style="list-style-type: none"> • All MS4s receiving storm water discharge. • All other Operators and any new Operator. <p>Large Construction Activity: Sites with disturbed areas over 5 acre or that are part of a larger common plan of development over 5 acres (include offsite areas). -----</p> <p>All Operators, provide a copy of the signed CSN at least 7 days prior to commencing construction activities to:</p> <p>City of Liberty Hill</p> <ul style="list-style-type: none"> • Any 'Secondary Operator(s)' • All other Operators and any new Operator.
	<p>Note: Copy all mailed documents and proof of postmark to the SWP3 Record</p>
	<p>Note: Provisional Authorization Period</p> <p>*Small are provisionally authorized immediately.</p> <p>*Large sites are provisionally authorized immediately with NOI submittal through the TCEQ STEERS website or after 7 days of postmark submittal by mail.</p>



TCEQ Large Construction Site Notice

Primary Operator

Large construction sites disturb more than five acres or are part of a larger common plan of development that disturbs more than five acres. Primary operators of large construction sites will fill out this notice. Primary operators will then post this notice at the construction site in a location where it is safely and readily available for viewing by the general public and local, state, and federal authorities. Additional information about the TCEQ Construction Stormwater General Permit may be found on TCEQ’s webpage on [Assistance Tools for Construction Stormwater General Permits](#).

Note: You must also develop a Stormwater Pollution Prevention Plan prior to the commencement of construction.

Site-Specific TPDES Authorization Number:

TXR1599NH

Primary Operator Name: A-Affordable Boat & RV Storage -Liberty Hill LLC

Contact Name and Phone Number: Curtis Attaway 972-877-3638

Project Description: A-Affordable Storage

Physical Location/Description:

19790 TX-29 Liberty Hill, TX 78642

Site development to support construction of a Single-family Home Lot Sub-Division with phasing to include excavation, utilities, paving, and landscaping.

Estimated Start Date: 06/2023

Projected End Date or Date Disturbed Soils Will Be Stabilized: 06/2025

Location of Stormwater Pollution Prevention Plan (SWP3):

With Site Contact:

c. Delegation of Authorized Signature

Instructions: Use the following sample letter to delegate SWP3 responsibilities.

SWP3 delegated responsibilities may include:

- Owner Operator delegating to the General Contractor the implementation of SWP3 BMPs, control installation/maintenance, record keeping, stabilization of site, etc. This should also include signature authority for providing record keeping, signing reports and documenting revisions to the SWP3.
- Owner Operator or General Contractor delegating to a person or position the signature authority to provide and sign SWP3 Site Inspection Reports.

C. Delegation of Authorized Signature

Instructions

- 1) On your letterhead, sign and send via certified mail to the TCEQ address shown (retain copy).
- 2) Must meet 30 TAC 305.44 Signatory Requirement.

Executive Director
 Texas Commission on Environmental Quality
 Storm Water General Permits Team, MC-148
 P.O. Box 13087
 Austin, Texas 78711-3087

Re: TPDES Storm Water General Permit / Authorized Signatory Delegation

Dear Director:

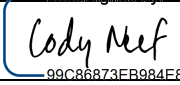
In accordance with 30 TAC §305.128, this letter delegates the specifically described positions or persons as authorized for signing reports and performing activities required by the Director or Texas Pollutant Discharge Elimination System (TPDES) General Permit. This authorization cannot be used for signing Notice of Intent (NOI) forms, Notice of Termination (NOT) forms, Notice of Change (NOC) letters, or Construction Site Notices (CSN).

I delegate the following authorized **positions** for signing required SWPPP documents required by the TPDES Permit for the referenced project:

Position: Site Superintendent or 3rd Party Terradyne Group inspector for providing SWP3 Manual record keeping (ie. Logs, Revisions, Drawings, Inspection Reports).

By signing below, I certify the following statement and additionally confirm that I meet the signature qualification defined in the Texas Administrative Code (TAC) specified in Title 30, Part 1, Chapter 305, Subchapter C, Rule 305.44(a):

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

Operator Name	A-Affordable Boat & RV Storage -Liberty Hill LLC	Signature	DocuSigned by:  99C86873EB984E8
Date	6/21/2023	Print Name	Cody Neef

Project Name	A-Affordable Storage
Location	19790 TX-29 Liberty Hill, TX 78642

D. Endangered Species and Historical Places

Instructions:

Sign the following 'acknowledgement statement' and keep on-file in the SWPPP Manual.

Project Name	A-Affordable Storage
Location	19790 TX-29 Liberty Hill, TX 78642

Impact on Endangered Species

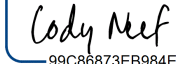
It is the Operator's responsibility to protect endangered or threatened species of animals, fish or plants and their habitat in or near the construction activity area. The Operator(s) will review the list of Federal and State endangered or threatened species located in the SWP3 Manual and assure by means of pre-construction and on-going site inspection that construction activities do not result in jeopardy to any of the listed species in or near the construction activity area. Site personnel should report to their management immediately any signs of endangered or threatened species or habitat and contact U.S. Fish and Wildlife and Texas Parks and Wildlife to determine appropriate action.

Impact on Historical Places

It is the Operator's responsibility to assure that construction activities and the discharge storm water from this site will not adversely affect registered Historic Places. Review the list located in the SWP3 Manual. Pre-construction site inspections should be conducted and personnel should report immediately any historic places found and contact the preservation agencies to determine appropriate action. Operator must comply with the National Historic Preservation Act and a) assure storm water discharge does not adversely affect a listed property or a property eligible for listing with the National Historic Register or b) obtain and comply with a written agreement between the Operator and the State Historic Preservation Officer that outlines all measures to be undertaken by the applicant to mitigate or prevent adverse affects to the historic property.

A duly authorized representative of all Operators must sign the following acknowledgement statement. Persons signing this certification must do so in compliance with the signatory requirements of the permit as found in 30 TAC 305.44. Refer to "Signature Delegation" for definition.

The above acknowledged by:

Operator Name	A-Affordable Boat & RV Storage -Liberty Hill LLC
Signature	 99C86873EB984E8...
Printed Name	Cody Neef
Date	6/21/2023

E. Operator Responsibilities

Instructions: Complete the following sections

1. Identifying Operators
2. Defining Operator Responsibilities
3. Recording changes and transfer of operator responsibilities

1. Identifying Operators --- add permit number when received from TCEQ

OPERATOR A					
Operator Name	A-Affordable Boat & RV Storage -Liberty Hill LLC				
Type of Operator	Secondary		OR	Primary	X
AKA	Owner	X	OR	Contractor	X
Address	725 HWY 287 N Suite 503 Mansfield, TX 76063				
Phone Number	817-788-0763				
Contact	Cody Neef jcneef@acs-cgb.com				
CSN Date	Refer to signature date of signed CSN copy located in this manual.				
NOI Date	Refer to signature date of signed NOI application, if applicable for this project.				
TPDES Permit#	TXR1599NH _____				
Signature	See Operator signed Certification Statement				

RESPONSIBILITIES OF OPERATOR

				YES	NO
This Operator has Control Over Construction Plans and Specifications				X	
Area of Project Control	Operator has Control Over Project Plans and Specifications, including the ability to make modifications in specifications for the following areas of the project:				
	X	Entire project site		Street paving only	
		Grading activities only		Building construction only	
		Underground utility installation only		Landscaping activities only	
Note 1	Ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part II of the General Permit.				
Note 2	Ensure all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their best management practices as necessary to remain compliant with the conditions of the general permit.				
Note 3	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.				
				YES	NO
This Operator has Day-to-Day Operational Control				X	
Area of Project Control	Operator has Day-to-Day Operational Control of those activities at a project that are necessary to ensure compliance with this SWP3 and other permit conditions for the following areas of the project:				
	X	Entire project site		Street paving only	
		Grading activities only		Building construction only	
		Underground utility installation only		Landscaping activities only	
Note 1	Ensure the SWP3 meets the requirements of the general permit for those portions of the project where they are operators.				
Note 2	This party is responsible for implementation of BMP's described in the SWP3				

2. Defining Operator Responsibilities

The following defines which operator is responsible for satisfying the requirements of the SWP3.

No#	Define Responsibility	Responsible Operator
1	Provide SWPPP certification statement	A
2	Provide a completed TCEQ CSN Form with copy to MS4	A
3	Post a copy of the CSN at the jobsite entrance	A
4	Submit NOI application and payment to the TCEQ office with copy to MS4	A
5	Post a copy of the NOI at the jobsite entrance	n/a
6	Operator preparing the SWP3	A
7	Ensure the project complies with the SWPPP and the TPDES General Permit	A
8	Provide Endangered Species and Historic Places certification.	A
9	Delegate authority to position(s)/person(s) who can sign SWPPP Records.	A
10	Delegate authority to position(s)/person(s) who can sign SWPPP Inspections	A
11	Provide BMP's and install all necessary erosion/sediment/pollution controls	A
12	Provide written scheduled Inspection Reports as defined in this SWPPP.	A
13	Provide corrective action within 7 days of inspection as required to maintain compliance with the permit. Includes all maintenance/repairs of BMP controls.	A
14	Provide additional BMP and controls where current controls are proven to be inadequate in controlling offsite pollution discharges.	A
15	Document necessary SWP3 revisions throughout the project activity	A
16	Provide stabilization of disturbed areas where it is anticipated that construction activities will cease and not resume for more than 21 days.	A
17	Provide: a) record keeping logs and b) site map drawing revisions.	A
18	Remove all temporary BMP and controls after final site stabilization achieved.	A
19	Terminate permit when responsibilities transfer or final site is stabilized	A

SWP3 Responsibility Revisions

1	This SWP3 must be revised to identify any new party in control of day-to-day operations such as in the case of when the Owner Operator employs a building contractor to construct a building structure on an empty pad.
2	Revisions should include: <ul style="list-style-type: none"> Identifying additional Operators TCEQ permit number Definition of their responsibilities.
3	Any new Operator should either: <ul style="list-style-type: none"> Obtain a TCEQ storm water permit, share this SWP3 with the Owner Operator, post the permit and CSN documents on a sign at the site and ensure full SWP3 compliance. Provide for their own compliance with the TXR150000 regulations for general construction activities. (ie. Obtain their own separate SWP3, permit, compliance requirements).

2. Defining Operator Responsibilities---copy---

The following defines which operator is responsible for satisfying the requirements of the SWP3.

No#	Define Responsibility	Responsible Operator
1	Provide SWPPP certification statement	
2	Provide a completed and signed TCEQ CSN Form with copy to MS4	
3	Post a copy of the CSN at the jobsite entrance	
4	Submit NOI application and payment to the TCEQ office with copy to MS4	
5	Post a copy of the NOI at the jobsite entrance	
6	Operator preparing the SWP3	
7	Ensure the project complies with the SWPPP and the TPDES General Permit	
8	Provide Endangered Species and Historic Places certification.	
9	Delegate authority to position(s)/person(s) who can sign SWPPP Records.	
10	Delegate authority to position(s)/person(s) who can sign SWPPP Inspections	
11	Provide BMP's and install all necessary erosion/sediment/pollution controls	
12	Provide written scheduled Inspection Reports as defined in this SWPPP.	
13	Provide corrective action within 7 days of inspection as required to maintain compliance with the permit. Includes all maintenance/repairs of BMP controls.	
14	Provide additional BMP and controls where current controls are proven to be inadequate in controlling offsite pollution discharges.	
15	Document necessary SWP3 revisions throughout the project activity	
16	Provide stabilization of disturbed areas where it is anticipated that construction activities will cease and not resume for more than 21 days.	
17	Provide: a) record keeping logs and b) site map drawing revisions.	
18	Remove all temporary BMP and controls after final site stabilization achieved.	
19	Terminate permit when responsibilities transfer or final site is stabilized	

F.1. TCEQ NOI APPLICATION (Notice of Intent Application)

Instructions: Complete the following.

	Operator: A-Affordable Boat & RV Storage -Liberty Hill LLC
1	<p>The <u>TCEQ NOI Application</u> can be either 'mailed' <u>or</u> submitted 'online' via the <u>TCEQ STEERS program</u>.</p> <p>Note: Provisional Authorization Period</p> <ul style="list-style-type: none"> • Mail applications have 7 day postmark wait period for authorization. • Immediate authorization if submitted online through TCEQ STEERS.
1	<p><u>NOI Application Submittal:</u> For each defined Primary Operator, the TCEQ Notice of Intent (NOI) application must be completed, reviewed for accuracy, signed and submitted <u>to the following address</u> at least seven (7) days prior to commencing construction activities or if utilizing electronic submittal, prior to commencing construction activities:</p> <p><i>TCEQ/ Storm Water & General Permits Team MC228 P.O. Box 13087 Austin, Texas 78711-3087</i></p>
2	<p>SWP3 Record: A copy of the signed NOI (s) should be filed in the SWPPP Manual.</p>
3	<p>Distribution of signed NOI copy: Provide a copy of all signed NOIs at least 7 days prior to commencing construction activities to: All MS4s receiving storm water discharge</p> <p>City of Liberty Hill</p> <ul style="list-style-type: none"> • Any 'Secondary Operator(s)' • All other Operators and any new Operator.
	<p>Note: A NOI application is required for construction activities that will disturb areas greater than 5 acres (including offsite areas) or that are 'part of a larger common plan of development' that will disturb over 5 acres.</p>
	<p>Note: Copy all mailed documents and proof of postmark to the SWP3 Record</p>



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Texas Pollutant Discharge Elimination System
Stormwater Construction General Permit

The Notice of Intent (NOI) for the facility listed below was received on June 21, 2023. The intent to discharge stormwater associated with construction activity under the terms and conditions imposed by the Texas Pollutant Discharge Elimination System (TPDES) stormwater Construction General Permit (CGP) TXR150000 is acknowledged. Your facility's unique TPDES CGP stormwater authorization number is:

TXR1599NH

Coverage Effective: June 21, 2023

The TCEQ's stormwater CGP requires certain stormwater pollution prevention and control measures, possible monitoring and reporting, and periodic inspections. Among the conditions and requirements of this permit, you must have prepared and implemented a stormwater pollution prevention plan (SWP3) that is tailored to your construction site. As a facility authorized to discharge under the stormwater CGP, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

Project/Site Information:

RN111760724
A-Affordable Storage
19790 Tx-29
Liberty Hill, TX 78642
Williamson County

Operator:

CN606153179
A-Affordable Boat & Rv Storage - Liberty Hill, LLC
725 Highway 287 N Ste 503
Mansfield, TX 76063

This CGP and all authorizations expire on March 5, 2028, unless otherwise amended. If you have any questions related to processing of your application, you may contact the Stormwater Processing Center by **email at SWPERMIT@tceq.texas.gov or by telephone at (512) 239-3700**. For technical issues, you may contact the stormwater technical staff by **email at SWGPA@tceq.texas.gov or by telephone at (512) 239-4671**. Also, you may obtain information on the TCEQ web site at <https://www.tceq.texas.gov/goto/wq-dpa>. A copy of this document should be kept with your SWP3.

A handwritten signature in black ink that reads "K. Keel".

Issued Date: June 21, 2023

FOR THE COMMISSION

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Kelly Keel, *Interim Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 21, 2023

Dear Applicant:

Re: TPDES General Permit for Construction Stormwater Runoff (TXR150000)
Notice of Intent Authorization

Your Notice of Intent (NOI) application for authorization under the general permit for discharge of stormwater associated with construction activities has been received. Pursuant to authorization from the Executive Director of the Texas Commission on Environmental Quality, the Division Deputy Director of the Water Quality Division has issued the enclosed Certificate.

Please refer to the attached certificate for the authorization number that was assigned to your project/site and the effective date. Please use this number to reference this project/site for future communications with the Texas Commission on Environmental Quality (TCEQ).

Authorization under the Edwards Aquifer Protection Program is required before construction can begin where the site is located within the Edwards Aquifer Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone. See <https://www.tceq.texas.gov/permitting/eapp/viewer.html> for additional information.

It is the responsibility of the Operator to notify the TCEQ Stormwater Processing Center of any change in address supplied on the original Notice of Intent by submitting a Notice of Change.

A Notice of Termination must be submitted when permit coverage is no longer needed.

For questions related to processing of your application you may contact the Stormwater Processing Center by email at SWPERMIT@tceq.texas.gov or by telephone at (512) 239-3700. If you have any technical questions regarding the general permit, you may contact the stormwater technical staff by email at SWGPT@tceq.texas.gov or by telephone at (512) 239-4671. Also, you may obtain information on the stormwater web site at <https://www.tceq.texas.gov/permitting/stormwater>.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Sadlier".

Robert Sadlier, Deputy Director
Water Quality Division

Texas Commission on Environmental Quality

Construction Notice of Intent

Site Information (Regulated Entity)

What is the name of the site to be authorized? A-Affordable Storage

Does the site have a physical address? No

Physical Address

Because there is no physical address, describe how to locate this site: 19790 TX-29

City Liberty Hill

State TX

ZIP 78642

County WILLIAMSON

Latitude (N) (##.#####) 30.7095

Longitude (W) (-###.#####) -97.9997

Primary SIC Code

Secondary SIC Code

Primary NAICS Code

Secondary NAICS Code

Regulated Entity Site Information

What is the Regulated Entity's Number (RN)?

What is the name of the Regulated Entity (RE)? A-Affordable Storage

Does the RE site have a physical address? No

Physical Address

Because there is no physical address, describe how to locate this site: 19790 TX-29

City Liberty Hill

State TX

ZIP 78642

County WILLIAMSON

Latitude (N) (##.#####) 30.7095

Longitude (W) (-###.#####) -97.9997

Facility NAICS Code

What is the primary business of this entity? rv and boat storage facility

Customer (Applicant) Information

How is this applicant associated with this site? Operator

What is the applicant's Customer Number (CN)?

Type of Customer Corporation

Full legal name of the applicant:

Legal Name	A-AFFORDABLE BOAT & RV STORAGE - LIBERTY HILL, LLC
Texas SOS Filing Number	0804492985
Federal Tax ID	
State Franchise Tax ID	32083845969
State Sales Tax ID	
Local Tax ID	
DUNS Number	
Number of Employees	
Independently Owned and Operated?	
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes

Responsible Authority Contact

Organization Name	A-AFFORDABLE BOAT & RV STORAGE - LIBERTY HILL, LLC
Prefix	
First	John
Middle	C
Last	Neef
Suffix	
Credentials	
Title	Managing Member

Responsible Authority Mailing Address

Enter new address or copy one from list:

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	725 HIGHWAY 287 N STE 503
Routing (such as Mail Code, Dept., or Attn:)	
City	MANSFIELD
State	TX
ZIP	76063
Phone (###-###-####)	8177880763
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	jcneef@acs-cgb.com

Application Contact**Person TCEQ should contact for questions about this application:**

Same as another contact?	A-AFFORDABLE BOAT & RV STORAGE - LIBERTY HILL, LLC
--------------------------	---

Organization Name	A-AFFORDABLE BOAT & RV STORAGE - LIBERTY HILL, LLC
Prefix	
First	John
Middle	C
Last	Neef
Suffix	
Credentials	
Title	Managing Member
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	725 HIGHWAY 287 N STE 503
Routing (such as Mail Code, Dept., or Attn:)	
City	MANSFIELD
State	TX
ZIP	76063
Phone (###-###-####)	8177880763
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	jcneef@acs-cgb.com

CNOI General Characteristics

1 Is the project or site located on Indian Country Lands?	No
2 Is the project or site associated to a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 CFR Part 72?	No
3 Is your construction activity associated with an oil and gas exploration, production, processing, or treatment, or transmission facility?	No
4 What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site?	1794
5 If applicable, what is the Secondary SIC Code(s)?	
6 What is the total number of acres that the construction project or site will disturb under the control of the primary operator?	19.99
7 What is the construction project or site type?	Other
8 Is the project part of a larger common plan of development or sale?	No
9 What is the estimated start date of the project?	06/21/2023
10 What is the estimated end date of the project?	10/31/2023
11 Will concrete truck washout be performed at the site?	No
12 What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?	South fork san gabriel river

13 What is the segment number(s) of the classified water body(s) that the discharge will eventually reach?	1250
14 Is the discharge into a Municipal Separate Storm Sewer System (MS4)?	Yes
14.1 What is the name of the MS4 Operator?	Liberty Hill
15 Is the discharge or potential discharge within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?	Yes
15.1 I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented.	Yes
16 I certify that a stormwater pollution prevention plan (SWP3) has been developed, will be implemented prior to construction, and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the general permit TXR150000. Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator.	Yes
17 I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000).	Yes
18 I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.	Yes

Certification

I certify that I am authorized under 30 Texas Administrative Code Subchapter 305.44 to sign this document and can provide documentation in proof of such authorization upon request.

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

1. I am John C Neef, the owner of the STEERS account ER079582.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcement of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Construction Notice of Intent.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEQ.

OPERATOR Signature: John C Neef OPERATOR

Customer Number:

Legal Name:

A-AFFORDABLE BOAT & RV STORAGE -
LIBERTY HILL, LLC

Account Number:

ER079582

Signature IP Address:

24.182.207.54

Signature Date:

2023-06-21

Signature Hash:

F928D00AF413714B231B9D6CE29FBAD6A6205B3F383B27772C7A063BA7ADA742

Form Hash Code at time
of Signature:

B6B27D70B625FCD0BB2A7C3CB0F2AD3AAA6701582AD7B18DC0AD8C7899DD211A

Fee Payment

Transaction by:

The application fee payment transaction was
made by ER079582/John C Neef

Paid by:

The application fee was paid by CODY NEEF

Fee Amount:

\$225.00

Paid Date:

The application fee was paid on 2023-06-21

Transaction/Voucher number:

The transaction number is 582EA000557246 and
the voucher number is 649478

Submission

Reference Number:

The application reference number is 575982

Submitted by:

The application was submitted by ER046861/Sam
Sclafani

Submitted Timestamp:

The application was submitted on 2023-06-21 at
11:32:03 CDT

Submitted From:

The application was submitted from IP address
47.184.48.186

Confirmation Number:

The confirmation number is 476541

Steers Version:

The STEERS version is 6.66

Additional Information

Application Creator: This account was created by Sam Sclafani

H. NOTICE OF CHANGE (NOC) FORM

. Instructions: Complete the following

1	Sign and mail the Notice of Change if relevant information provided in the NOI changes; submitted at least 14 days before the change occurs. <i>Mail to: Address shown on Form.</i>
	--go to-- https://www.tceq.texas.gov/assets/public/permitting/waterquality/forms/20391.pdf



Notice of Change (NOC) to an Authorization for Stormwater Discharges Associated With Construction Activity under TPDES General Permit TXR150000

IMPORTANT – Please read the following information and [INSTRUCTIONS](#) before filling out this form

ePERMITS: Sign up now for online NOC: <https://www3.tceq.texas.gov/steers/index.cfm>

This form will be returned for any of the following reasons:

- 1) The permit number is not provided, is invalid, or is no longer active,
- 2) Wet ink signature of person meeting signatory requirements is not provided,
- 3) The current permittee is not the applicant, and;
- 4) A requested change in operator name is not a legal name change.

This form cannot be used for a change in operator. Refer to your general permit for Information.

What is the permit number of the authorization to be changed?

TXR15_____ or TXRCW_____

1) APPLICANT INFORMATION

a) What is the full Legal Name of the current operator as on the authorization?

b) What is the Customer Number (CN) assigned to this operator? You may search for your CN at: <http://www.tceq.texas.gov/goto/cr-customer>

CN _____

c) What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in TAC §305.44(a).

Prefix (Mr. Ms Miss): _____

First/Last Name: _____ Suffix: _____

Title: _____ Credential: _____

d) What is the Regulated Entity Reference Number (RN) assigned to this site?

RN _____

2) APPLICATION CONTACT

If TCEQ needs additional information regarding this application, who should be contacted?

Prefix (Mr. Ms. Miss): _____
First/Last Name: _____ Suffix: _____ Title: _____
Credential: _____
Organization Name: _____ Phone Number: _____ Ext: _____ Fax Number: _____ E-mail: _____
Mailing Address: _____ Internal Routing (Mail Code, Etc.): _____ City: _____
State: _____ ZIP Code: _____
Mailing Information if outside USA:
Territory: _____ Country Code: _____ Postal Code: _____

3) REQUESTED CHANGE TO PERMITTED INFORMATION

What information has changed or needs to be corrected? Check one or more of the following options and enter the new information below.

Operator legal name change with Texas Secretary of State (TX SOS).
Go to sections a) and b) as applicable.
Note: Permits are not transferable. If a change in entity has occurred, this NOC will not be processed.

Address and contact information for the Operator. Fill out section b).

Site Information (Regulated Entity). Fill out section c).
Note: Permits under a general permit are site specific. If a change in site location has occurred, this NOC will not be processed.

General characteristics relating to the regulated activity. Fill out section d).

a) Operator Legal Name Change

- 1. What is the NEW active Legal Name with TX SOS or on other legal document?
New Legal Name: _____

- 2. What is the TX SOS Filing Number for us to confirm this official name change?
This is only applicable to Limited Partnerships or Corporations.
TX SOS Filing number: _____

b) Address and Contact Information for the Operator

Verify mailing addresses with USPS:
<https://tools.usps.com/go/ZipLookupAction!input.action>

Prefix (Mr. Ms. Miss): _____
First/Last Name: _____ Suffix: _____ Title: _____
Credential: _____ Organization Name: _____
Phone Number: _____ Ext: _____ Fax Number: _____ E-mail: _____
Address: _____

Internal Routing (Mail Code, Etc.): _____ City:
State: _____ ZIP Code: _____ Mailing Information if outside USA:
Territory: _____ Country Code: _____ Postal Code: _____

c) Regulated Entity (Site) Information Correction

1. Is this a change to the location of the permitted activity?
Yes – This NOC will not be processed since the authorizations are site specific.

No – Continue with NOC form.

2. Corrected Name of Project or Site :

3. Updated Physical Address (new 911 address):

Street Number: _____ Street Name: _____

City: _____ State: _____ ZIP Code: _____

4. Corrected location access description, if no physical address (street number/street name):

5. Corrected Latitude: _____ N

6. Corrected Longitude: _____ W

7. Corrected County (Counties if >1):

d) Change in General Characteristics Provided on Original Form. Identify the specific change and provide the updates information. If an attachment is needed, please reference it below:

4) OPERATOR CERTIFICATION

I, _____
Typed or printed name *Title*

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

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature: _____ Date: _____
(Use blue ink)

Notice of Change (NOC) for Stormwater Discharges Associated with Construction Activity under TPDES General Permit TXR150000

General Information and Instructions

GENERAL INFORMATION

Where to Send the NOC:

BY REGULAR U.S. MAIL

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact list:

Application – status and form questions:	512/245-0130, swpermit@tceq.texas.gov
Technical questions:	512/239-4671, swgp@tceq.texas.gov
Environmental Law Division:	512/239-0600
Records Management - obtain copies of forms:	512/239-0900
Reports from databases (as available):	512/239-DATA (3282)
Cashier's office:	512/239-0357 or 512/239-0187

NOC Process:

1. Administrative Review: The form will be reviewed to ensure the request is from the permittee (operator) on the authorization, the permit is active and initial coverage was acknowledged. Each item on the form will be reviewed for a complete response. In addition, the operator's legal name change must be verified with Texas Secretary of State (if applicable). The address(s) on the form must be verified with the US Postal Service (USPS) as an address receiving regular mail delivery. Never give an overnight/express mailing address. If an item is incomplete or not verifiable, the operator may be notified by letter, phone call or email. In some instances as noted at the beginning of the form, the request may simply be returned.

2. NOC Confirmation: An updated Acknowledgment Certificate will be mailed to the operator only if the NOC is to change information provided on the acknowledgment certificate. The original coverage effective date will not change.

General Permit (Your Permit) and Forms

You may view and print your general permit on the TCEQ web site <http://www.tceq.texas.gov>. Search using key word TXR150000. General Permit Forms (NOI, NOT, and NOC) and instructions are available on the TCEQ web site <http://www.tceq.texas.gov>.

Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated entity changes, the present permittee must submit a NOT and the new operator must submit a NOI. The NOI must be submitted not later than 10 days prior to the change in Operator status. Note that the NOT is effective on the postmarked date. It may be necessary to not terminate the existing permit until coverage by the new entity is confirmed.

I. NOTICE OF TERMINATION (NOT) FORM

Instructions: Complete the following

1	Complete, sign and mail the Notice of Termination when the project is completed. <i>Mail to: Address shown on Form.</i>
2	Submit a copy of the NOT to all MS4's receiving discharge from the site.

TCEQ Office Use Only
Permit No:
CN:
RN:
Region:



Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

IMPORTANT INFORMATION:

Please read and use the General Information and Instructions prior to filling out each question in the form.

Effective September 1, 2018, this paper form must be submitted to TCEQ with a completed electronic reporting waiver form (TCEQ-20754).

ePermits: This form is available on our online permitting system.

Sign up for online permitting at: <https://www3.tceq.texas.gov/steers/>

What is the permit number to be terminated?

TXR15 [redacted] TXRCW [redacted]

Section 1. OPERATOR (Permittee)

a) What is the Customer Number (CN) issued to this entity?

CN [redacted]

b) What is the Legal Name of the current permittee?

[redacted]

c) Provide the contact information for the Operator (Responsible Authority).

Prefix (Mr. Ms. or Miss): [redacted]

First and Last Name: [redacted] Suffix: [redacted]

Title: [redacted] Credentials: [redacted]

Phone Number: [redacted] Fax Number: [redacted]

Email: [redacted]

Mailing Address: [redacted]

City, State, and Zip Code: [redacted]

Country Mailing Information, if outside USA: [redacted]

Section 2. APPLICATION CONTACT

This is the person TCEQ will contact if additional information is needed regarding this application.

Is the application contact the same as the permittee identified above?

Yes, go to Section 3.

No, complete section below

Prefix (Mr. Ms. or Miss): [redacted]
First and Last Name: [redacted] Suffix: [redacted]
Title: [redacted] Credentials: [redacted]
Phone Number: [redacted] Fax Number: [redacted]
Email: [redacted]
Mailing Address: [redacted]
City, State, and Zip Code: [redacted]
Country Mailing Information, if outside USA: [redacted]

Section 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

- a) TCEQ issued RE Reference Number (RN): RN [redacted]
- b) Name of project or site as known by the local community: [redacted]
- c) County, or counties if more than 1: [redacted]
- d) Latitude: [redacted] Longitude: [redacted]
- e) Site Address/Location:
 If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete Section 3A.
 If the site does not have a physical address, provide a location description in Section 3B. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section 3A: Physical Address of Project or Site:

Street Number and Name: [redacted]
City, State, and Zip Code: [redacted]

Section 3B: Site Location Description:

Location description: [redacted]
[redacted]
City where the site is located or, if not in a city, what is the nearest city: [redacted]
Zip Code where the site is located: [redacted]

Section 4. REASON FOR TERMINATION

Check the reason for termination:

- Final stabilization has been achieved on all portions of the site that are the responsibility of the Operator and all silt fences and other temporary erosion controls have been removed, or scheduled for removal as defined in the SWP3.
- Another permitted Operator has assumed control over all areas of the site that have not been finally stabilized, and temporary erosion controls that have been identified in the SWP3 have been transferred to the new Operator.

- The discharge is now authorized under an alternate TPDES permit.
- The activity never began at this site that is regulated under the general permit.

Section 5. CERTIFICATION

Signatory Name: _____

Signatory Title: _____

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

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): _____ Date: _____

Instructions for Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

GENERAL INFORMATION

Where to Send the Notice of Termination (NOT):

BY REGULAR U.S. MAIL:

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL:

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact List:

Application status and form questions:	512-239-3700, swpermit@tceq.texas.gov
Technical questions:	512-239-4671, swgp@tceq.texas.gov
Environmental Law Division:	512-239-0600
Records Management - obtain copies of forms:	512-239-0900
Reports from databases (as available):	512-239-DATA (3282)
Cashier's office:	512-239-0357 or 512-239-0187

Notice of Termination Process:

A Notice of Termination is **effective on the date postmarked for delivery to TCEQ.**

When your NOT is received by the program, the form will be processed as follows:

- 1) Administrative Review: The form will be reviewed to confirm the following:
 - the permit number is provided;
 - the permit is active and has been approved;
 - the entity terminating the permit is the current permittee;
 - the site information matches the original permit record; and
 - the form has the required original signature with title and date.
- 2) Notice of Deficiency: If an item is incomplete or not verifiable as indicated above, a phone call will be made to the applicant to clear the deficiency. A letter will not be sent to the permittee if unable to process the form.
- 3) Confirmation of Termination: A Notice of Termination Confirmation letter will be mailed to the operator.

Change in Operator:

An authorization under the general permit is not transferable. If the operator of the regulated entity changes, the present permittee must submit a Notice of Termination and the new operator must submit a Notice of Intent. The NOT and NOI must be submitted not later than 10 days prior to the change in Operator status.

INSTRUCTIONS FOR FILLING OUT THE FORM

The majority of permit information related to the current operator and regulated entity are available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

Section 2: Project Information

- A. Site Description and Construction Activity
- B. List of List of Allowable Non-Storm Water Discharges
- C. List of Potential Pollutants and Pollutant Sources
- D. SWP3 Site Maps

A. Site Description and Construction Activity

A-AFFORDABLE BOAT, RV,
AND MINI STORAGE, LLC

TCEQ Site Classification (Small / Large)

Small Construction Activity: 1-5 acres; requires TCEQ CSN document	
Large Construction Activity: 5+ acres; requires TCEQ CSN& NOI document	X
***Larger common plan of Development	

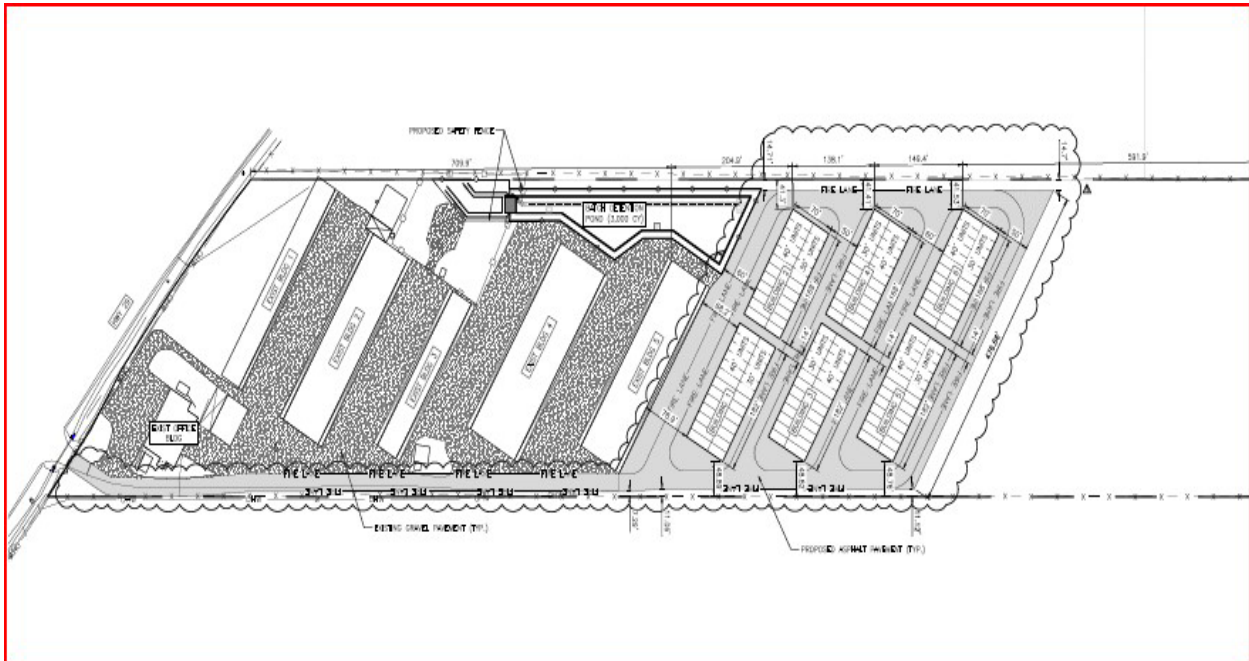
Shared SWP3 by the following Operators:

Operator controlling plans and specifications	A-Affordable Boat & RV Storage -Liberty Hill LLC
Operator controlling day-to-day operations for all <u>'Construction Activities'</u>	A-Affordable Boat & RV Storage -Liberty Hill LLC
Defining Operator responsibilities	See Section 1.F

Disturbed Areas:

Site	19.99 ac
Off-site grading and staging	-none-
Total Disturbed	19.99 ac

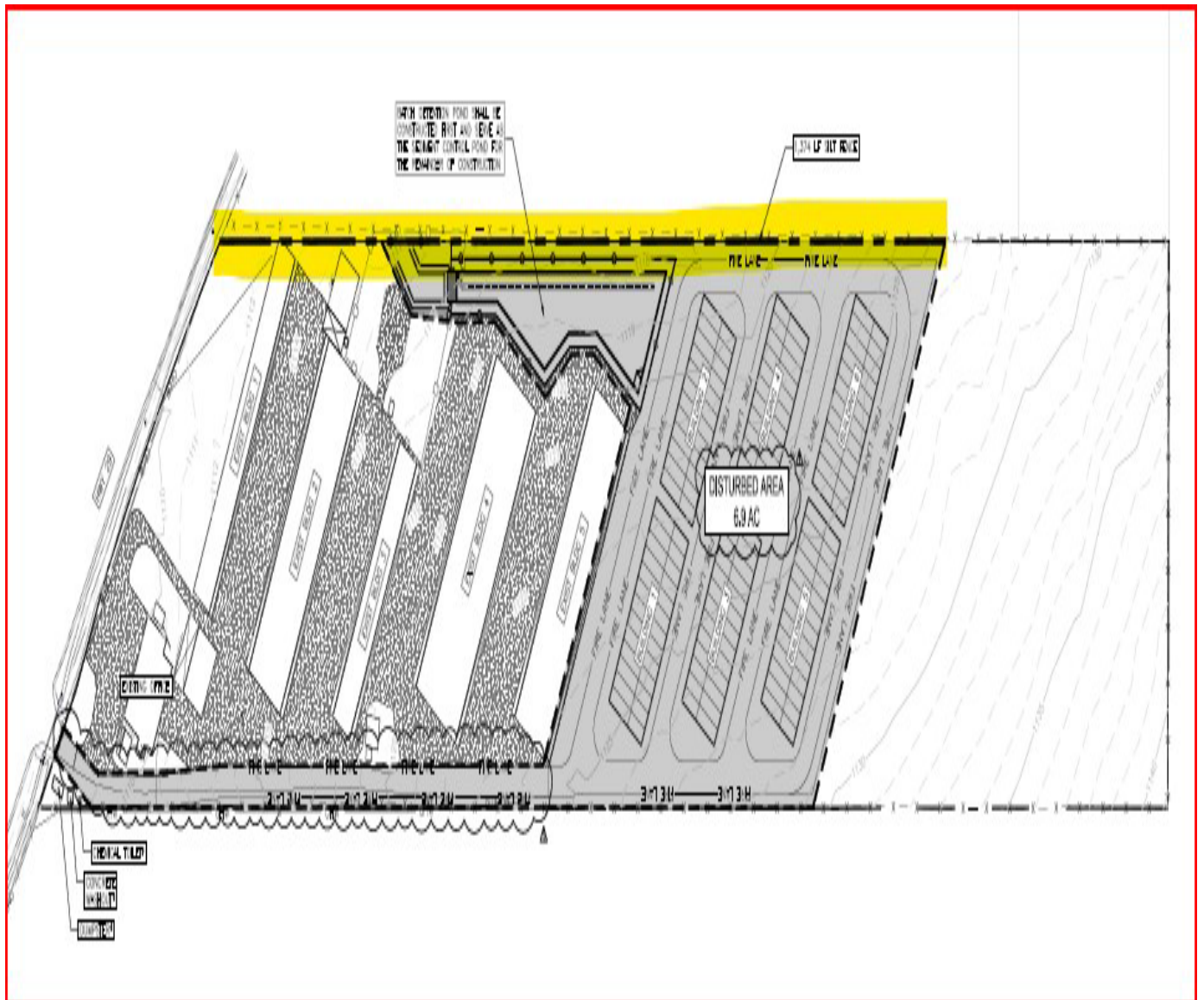
19.991 ACRES
OR 870,811 SQ. FEET



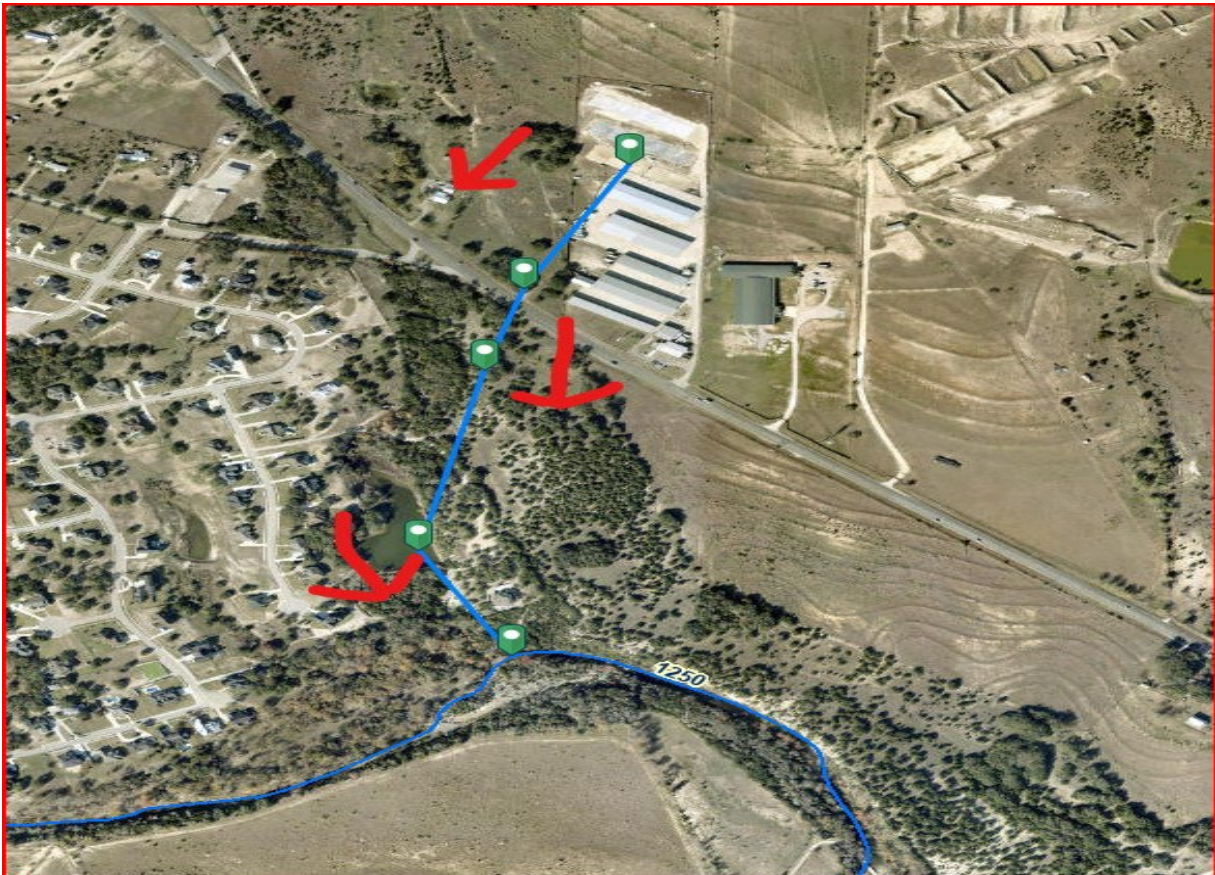
Engineer's Data: Sheet C4.0, C4.1 Erosion Control Plan

For full size, see Section 8 Appendix 4.

LEGEND	
PROPERTY LINE	---
EXISTING MAJOR CONTOUR	---1100---
EXISTING MINOR CONTOUR	---1101---
EXISTING GRAVEL	[Stippled pattern]
PROPOSED DETENTION POND	[Empty rectangle]
DISTURBED AREA/LOC	[Hatched pattern]
SILT FENCE	[Thick dashed line]



Drainage:



Receiving Water Segment: South Fork San Gabriel River - 1250 (Not listed as Impaired)

Stream Segments: 1250	
Segment ID	1250
Segment Name	South Fork San Gabriel River
Segment Class	Classified
Segment Type	Freshwater Stream
Segment Description	From the confluence with the North Fork San Gabriel River in Williamson County to the most upstream crossing of SH 29 in Burnet County
Basin Name	Brazos River Basin
Impaired	N



1	Project Name	A-Affordable Storage
2	Site Location	19790 TX-29 Liberty Hill, TX 78642
3	Latitude/Longitude	Lat 30.7095 Long -97.9997
4	Nature of construction activity	Site development to support construction of a Boat and RV Storage with phasing to include excavation, utilities, paving, building, and landscaping <u>SIC Code : 1542 – Non-residential building structures</u>
5	TCEQ Documents Required: CSN; NOI	CSN & NOI for Large Construction Activity
6	Define offsite support activities within 1 mile	--none identified at this time--
7	Define offsite support activities over 1 mile.	--none identified at this time--
8	Onsite- concrete batch plant operations	No
9	Onsite- concrete wash-out operations	yes
10	Site soil description	Denton silty clay, Doss silty clay, Eckrant cobbly clay
11	Define site pre-construction topography	1-8% slope
12	Define site pre-construction ground cover	Onsite: existing grass & buildings
13	Define site pre-construction outfall location	Sheet flow drainage to the South into an unnamed stream. Outfall South into South Fork San Gabriel River. (water segment #1250)
14	Define site pre-construction runoff coefficient	0.30
15	Define site post-construction outfall location	Lot Sheet flow drainage into the proposed detention pond with discharge to the South into an unnamed stream. Outfall South into South Fork San Gabriel River. (water segment #1250)
16	Define site post-construction runoff coefficient	0.75
17	Total disturbed acreage (including offsite)	19.99 ac
18	General area map	---see Section 4---
19	SWP3 site map	---see Section 7---
20	Name of receiving waters	South Fork San Gabriel River
21	Name of MS4 receiving storm water runoff	City of Liberty Hill, Texas
22	Segment Number of Classified Water Body	1250 – South Fork San Gabriel River
23	Texas Water Quality Impaired Waters 303(d)	Not listed as impaired
24	Copy of 3/5/18 TPDES TXR150000 regulations	---see Section 5
25	List of allowable non-storm water discharges	---see Section 2.B
26	List of potential pollutants and pollutant sources	---see Section 2.C
27	Construction Phases&Sequence of BMP Controls	---see Section 3.A
28	Temporary & Permanent Stabilization Practices	---see Section 3.B
29	Onsite wetlands or adjacent wetlands	n/a

B. List of Allowable Non-Storm Water Discharges

The following non-storm water discharges are also eligible for authorization under this general permit:

SWP3 Designee to check which items apply to this site:

1	Discharges from fire fighting activities (not to include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities)	
2	Uncontaminated fire hydrant flushings (excluding discharges of hyper-chlorinated water, unless the water is first de-chlorinated 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)	
3	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	
4	Uncontaminated water used to control dust	
5	Potable water sources including waterline flushings (excluding discharges of hyper-chlorinated water, unless the water is first de-chlorinated and discharges are not expected to adversely affect aquatic life)	
6	Uncontaminated air conditioning condensate	
7	Uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents	
8	Lawn watering and similar irrigation drainage, provided discharges comply with the permit	

C. List of Potential Pollutants and Pollutant Sources

List of Potential Pollutants

	Could include, but not be limited to:
1	Silt
2	Fuel
3	Floatable and bio-degradable trash, garbage and debris
4	Toilet liquids (human waste)
5	Equipment/vehicle oil and grease and fuel
6	Chemical and hazardous materials stored on-site
7	Air born pollutants (eg. dust, asbestos)
8	Construction materials (eg. wrapping/packaging materials; cardboard, paper, plastic, wood)
9	Curing compounds, paints, solvents, stains
10	Concrete, cement, mortar
11	Line flushing chemicals; ie. Chlorine from line flushing
12	Unfiltered concrete washout
13	Leached metals

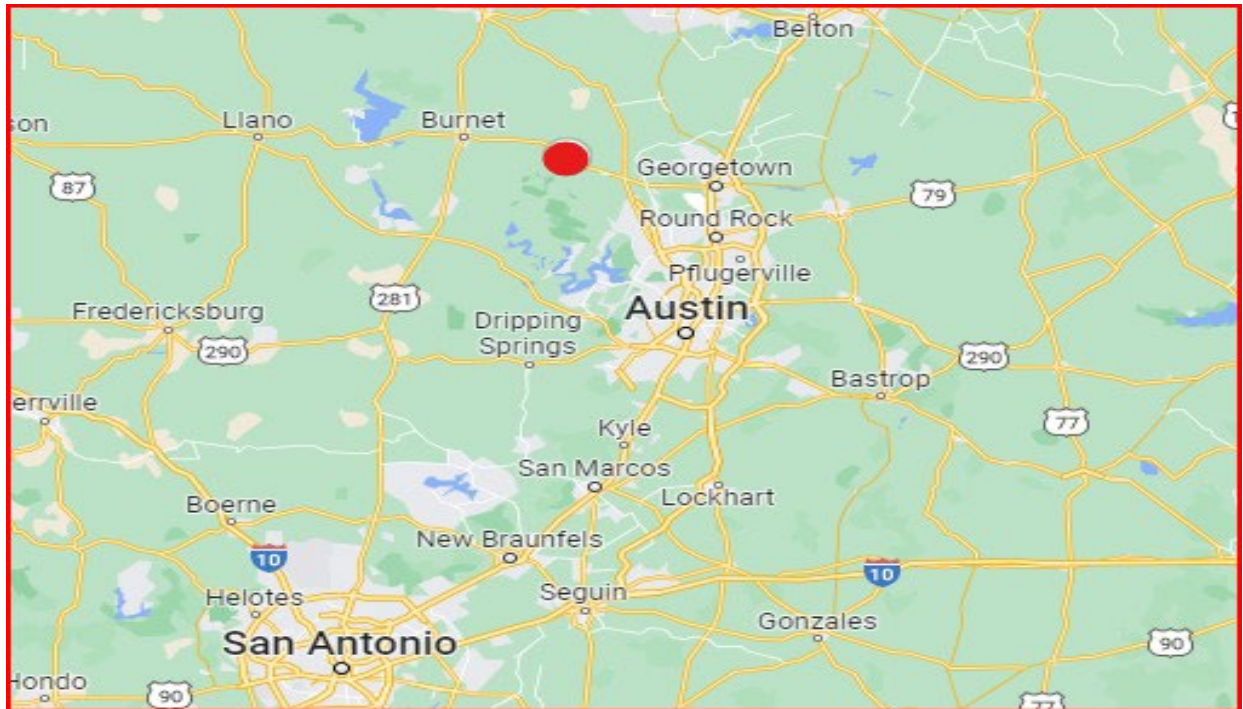
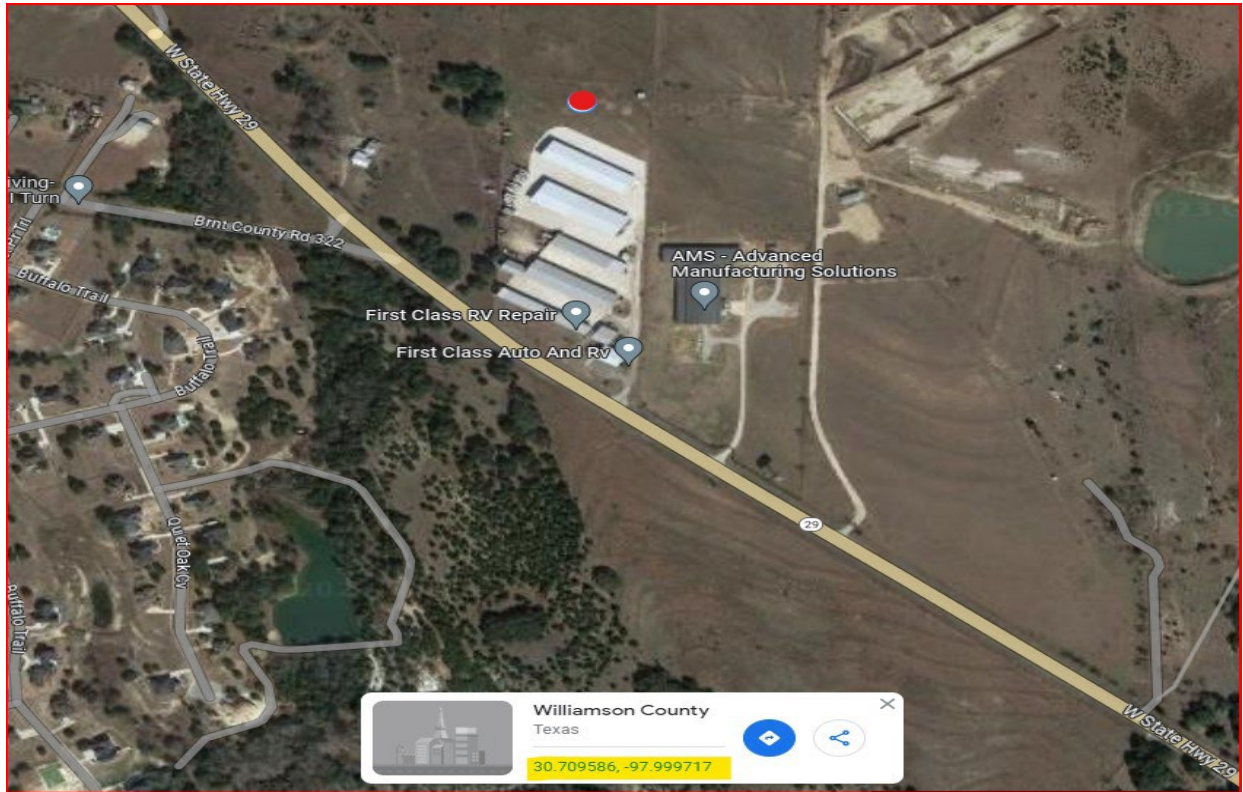
List of Potential Pollutant Sources

	Could include, but not be limited to:
1	Disturbed ground
2	Fuel tanks
3	Toilets
4	Staging Areas: equipment staging, materials staging, dirt stockpile areas, borrow areas
5	Trash containers
6	Worker food wrappings
7	Equipment/vehicle leaks
8	Maintenance activities
9	Refueling activities
10	Storage Areas: chemical and hazardous materials
11	Line flushing
12	Concrete trucks
13	Concrete and asphalt batch plants
14	Concrete and mortar washout activities
15	Illegal on-site waste dumping
16	Waste waters.
17	Uncovered trash containers
18	Uncovered chemical and hazardous material containers
19	Metal product leaching

Note: A description of controls and measures that will be implemented to minimize pollutant discharges from these sources is included in this SWP3 Section 4.

SWP3 Site Maps

Location Maps



Soil Map

Williamson County, Texas	
Map Unit Symbol	Map Unit Name
DnB	Denton silty clay, 1 to 3 percent slopes
DoC	Doss silty clay, moist, 1 to 5 percent slopes
EaD	Eckrant cobbly clay, 1 to 8 percent slopes



Section 3: Construction Phases and BMP Sequence & Controls

A. Construction Phases and Sequence of BMP Controls

B. Temporary and Permanent Stabilization Practices

A. Construction Phases and Sequence of BMP Controls

This section describes the 'Construction Phases' that will create major earth disturbing activities and the general timing or sequence for implementation of BMPs.

Defining Construction Phases and Sequence of Major Earth Disturbing Activities

The anticipated sequence of construction activities that involves earth disturbing activities and their associated BMPs are provided below.

Project Description: A-Affordable Storage Site development to support construction of a Boat and RV Storage with phasing to include excavation, utilities, paving, building, and stabilization.
Pre-Construction Ground Conditions Existing Grass and buildings
Sequence of Major Earth Disturbing Construction Activity Major Earth Disturbing Construction Activity will consist of: Earth Disturbing Activities: <ul style="list-style-type: none">• Grading• Utility trenching• Firelane and parking lot sub-base• Building construction• Final stabilization

Living Document

This SWPPP is considered a living document which can be changed by the authorized Operator in response to site conditions that may dictate the need for modifications to existing controls or the need for additional controls.

Note: Record Keeping Requirement

Operator's site supervisor will maintain the following records in the SWP3 and make readily available upon request to the parties listed in Part III.D.1 of the TXR150000 permit:
Record in the **SWP3 Record Logs Section 7:**

- The start/stop dates for each phase of construction activity.
- Installation and removal dates of each BMP control device.
- Dates when construction temporarily or permanently cease on a portion of the site.
- Dates when stabilization measures are initiated.

Procedural Requirements

Prior to earth disturbing activities by the Operator:

- At least seven (7) days prior to initial earth disturbance, obtain TCEQ permit coverage for Large Construction Activities over 5 acres. (Exception: Immediate provisional permit authorization is granted for Small Construction Activities (less than 5 acres) and for Large Construction Activities submitting NOI application via the TCEQ website.
- Submit copies of the NOI application and Construction Site Notices (CSN) to the local MS4(s) and to all other Secondary and Primary Operators.
- Post a copy of all Operator CSNs on a sign at the jobsite for public viewing.

EROSION CONTROL GENERAL NOTES

1	Do not begin earth disturbing activities until provisional authorization has been obtained from TCEQ and local authorities. Provisional authority is immediately after the posting of the CSN Permit Form for Small Sites (less than 5 acres) and for Large sites (greater than 5 acres) if the NOI Application has been file with the TCEQ online STEERS system. Large sites (greater than 5 acres) that submit the NOI Application by US mail are not authorized until 7 days after postdate submittal.	
2	Comply with all state and local erosion control ordinances.	
3	Revisions should be made to the SWP3 as needed to accommodate changes to BMPs and BMP schedules. All revisions should be documented to the SWP3 Record.	
4	Wash water pollutants shall not come into contact with storm water discharges from this site.	
5	Oil and grease absorbing materials shall be readily available on-site and shall be promptly used to contain and/or clan up all fuel or chemical spills or leaks.	
6	Dust control shall be accomplished by watering dry, exposed areas on a regular basis in accordance w/ local drought water restrictions. Spraying petroleum based or toxic liquids for this purpose is strictly prohibited.	
7	Disturbed area of the site where construction activity will cease for more than 14 days must be seeded and watered with temporary vegetation. Areas where construction activity has permanently ceased shall be seeded/watered with permanent vegetation within 14 days of ceased activities.	
8	All materials spilled, dropped, washed or tracked onto adjacent roadways by any vehicles exiting the site shall be cleaned or removed as soon a possible but no later than the end of the work day.	
9	Accumulated silt deposits in sediment basin, detention pond, storm sewer inlets and pipes, rock check dams, and along silt fences shall be cleaned before the next rain event but no later than 7 days from inspection observation. Silt deposits shall not exceed over 50% of the height of the device.	
10	Silt fence or straw-filled sediment logs shall be placed on the downstream side of all dirt stockpiles.	
11	The TCEQ Permit cannot be terminated until all disturbed areas have been stabilized and all temporary structural controls such as silt fence have been removed.	
12	The SWP3 designee shall update the SWP3 Site Map to reflect accurate locations of all structural controls and all areas for wash down, materials and equipment staging, location of hazardous materials, parking, portable toilets, concrete washout, maintenance, fuel storage and stockpiles.	
13	SWP3 Inspection Reports shall be performed in strict accordance with the chosen schedule as allowed by the TCEQ regulations.	
14	<table border="1"> <tr> <td>IF DIRT OR ROCK IS EXPORTED FROM THIS SITE, OR IF DIRT OR ROCK IS IMPORTED FROM AN OFF SITE BORROW LOCATION, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR COMPLIANCE WITH ALL TCEQ STORM WATER REQUIREMENTS FOR THE REMOTE SITE. THE CONTRACTOR SHALL FURNISH THE OWNER WITH A COPY OF THE WRITTEN AGREEMENT WITH THE LANDOWNER OF THE REMOTE SITE INDICATING PERMITTING AND EROSION CONTROL MEASURES WILL BE IMPLEMENTED THEREON.</td> </tr> </table>	IF DIRT OR ROCK IS EXPORTED FROM THIS SITE, OR IF DIRT OR ROCK IS IMPORTED FROM AN OFF SITE BORROW LOCATION, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR COMPLIANCE WITH ALL TCEQ STORM WATER REQUIREMENTS FOR THE REMOTE SITE. THE CONTRACTOR SHALL FURNISH THE OWNER WITH A COPY OF THE WRITTEN AGREEMENT WITH THE LANDOWNER OF THE REMOTE SITE INDICATING PERMITTING AND EROSION CONTROL MEASURES WILL BE IMPLEMENTED THEREON.
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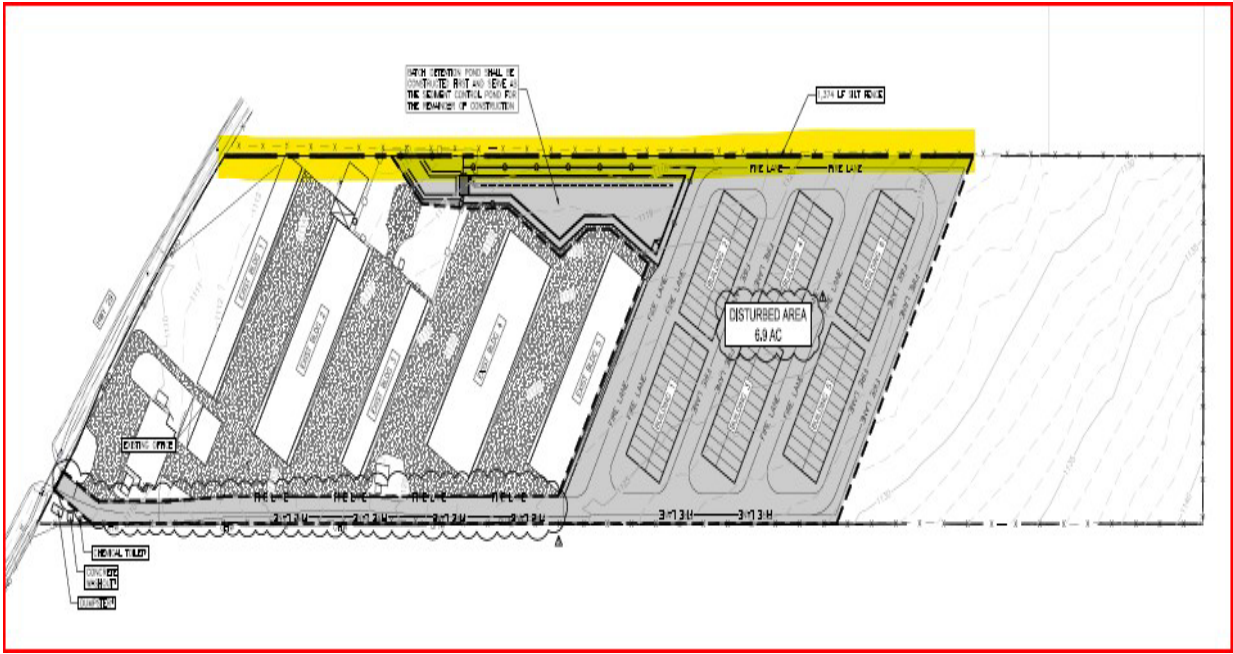
Construction Phase	BMP/Structural Controls Implementation Schedule
PreConstruction	<p>Prior to initial construction and earth disturbing activities provide the following.</p> <ul style="list-style-type: none"> <li> <p>• Impact on Endangered Species: Protect endangered or threatened species of animals, fish or plants and their habitat in or near the construction activity area. The Operator(s) will review the list of Federal and State endangered or threatened species located in the SWP3 Manual and assure by means of pre-construction and on-going site inspection that construction activities do not result in jeopardy to any of the listed species in or near the construction activity area. Site personnel should report to their management immediately any signs of endangered or threatened species or habitat and contact the following agencies to determine appropriate action:</p> <ol style="list-style-type: none"> a) U.S. Fish & Wildlife (817-277-1100) b) TexasParks&Wildlife(512-389-8111) or c) (http://www.tpwd.state.tx.us/huntwild/wild/species/endang/index.phtml) <li> <p>• Impact on Historical Places: Assure construction activities and the discharge storm water from this site will not adversely affect registered Historic Places. Review the list located in the SWP3 Manual. Pre-construction site inspections should be conducted and personnel should report immediately any historic places found and contact the preservation agencies to determine appropriate action. Operator must comply with the National Historic Preservation Act and a) assure storm water discharge does not adversely affect a listed property or a property eligible for listing with the National Historic Register or b) obtain and comply with a written agreement between the Operator and the State Historic Preservation Officer (512-463-6100) (loaks@thc.state.tx.us) that outlines all measures to be undertaken by the applicant to mitigate or prevent adverse affects to the historic property.</p> <li> <p>• Impaired Body of Water: Review TXR150000 Storm Water Regulations Part II Section C.4. Any discharge to impaired waters from this site that contain pollutants of concern detailed in any existing TMDL Plan must be consistent with the TMDL. Operator(s) must apply BMPs to comply with the conditions and requirements of the TMDL or TMDL Implementation Plan. Levels of discharge of pollutants of concern that are inconsistent with the TMDL or TMDL Implementation Plan are not allowed under the TXR150000 permit. If Operators for this site suspect or are aware of the existence of pollutants of concern for this impaired water body, the following is recommended: 1) Review the TMDL for pollutants of concern. 2) Analyze soil and storm water runoff samples to determine if pollutants of concern exist and the quantitative levels. 3) Determine if additional BMP and BPT are required for this site. BMP and BPT might include containment of storm water runoff, additional filtration and/or treatment of controlled release.</p>

	<ul style="list-style-type: none">• <u>Pre-construction conditions:</u><ul style="list-style-type: none">a) Record and document pre-construction conditions of site regarding paths of storm water flow and existing erosion and sediment loss patterns. This should include photographs of site conditions and paths of off-site storm water flow. (ie. sediment deposits & trash in offsite creeks, ponds, lakes.b) It is recommended that an existing 'soil analysis' be performed to determine pre-construction soil conditions and possible soil contaminants.c) It is recommended that a 'water sample analysis' be performed of existing pre-construction storm water runoff to define pre-construction levels of turbidity, sediment load and pollutants. It is also recommended that a continual program of 'water sample analysis be maintained throughout the life of the project activity to establish baseline data for impact to offsite water ways.d) Storm-water runoff should be treated by means of detention, sediment settlement, chemical treatment, filtering, etc. to assure non-polluted storm water exits the site into US water ways.e) Sites that are adjacent to 'wetlands' or that discharge into 'listed impaired waters' in the State of Texas may need special permit from the Army Corp of Engineers or TCEQ to co-ordinate low impact or mitigation plans.
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BMP/Pollution Control Schedule

- A. Review the list of BMP recommendation in this SWP3 and implement those that apply to this construction activity. Phase in additional controls as needed.
- B. Apply the chosen BMPs and structural controls for all work areas including all offsite support areas (ie. stockpiling, borrow, equipment staging).
- C. Note: Offsite support areas more than 1 mile away may require a separate authorization under the general permit according to disturbed area size.
- D. Review and follow the requirements of the project's civil drawing titled:
Engineer's Civil Sheet C4.0, C4.1 Erosion Control Plan

Review SWP3 Site Map: Engineer's Civil Sheet C4.0, C4.1 Erosion Control Plan



Phase A	Grading
note	<p>Site superintendent and demolition contractors shall review the following list of BMP's to be utilized during the '<u>demolition</u>' activities:</p> <ul style="list-style-type: none"> a) On-site roll off trash container and haul trucks to transport site debris and trash to lawful landfill or recycled. b) All floatable materials removed or placed in closed containers. c) Silt fence, sediment logs or triangular filter dikes shall be installed in areas to prevent soil transportation onto paved areas to minimize runoff into streets. d) All storm drains receiving storm water runoff to be protected with inlet filtration. e) Removal of hazardous materials including asbestos by certified license contractor. f) All on-site sources of contaminated water, sludge water, water standing in pits and containment areas to be properly disposed of. Do not allow this water to enter storm water drainage system. g) Perform repairs and cleanup maintenance for controls such as silt fence, inlet protection and street tracking. h) All on-site fuel storage to be contained from spills with secondary containment such as berm with liner or spill tank. i) All leaks form fuel tanks, vehicles or construction equipment to be contained and properly removed as soon as discovered. j) Dust control shall be provided as needed. k) The contractor is responsible for dust or dirt in the air from construction activity. l) All trash and material debris removed to lawful landfill or recycled. m) All floatable materials removed or placed in closed containers. n) Hazardous materials and liquids properly disposed of and removed from the site. o) All ground oil, grease, chemical spills removed and properly disposed of. p) All contaminated water removed and properly disposed of. q) All metal stockpiles subject to rusting removed and properly disposed of. r) All street and paved areas to be swept clean. <p>Schedule: Prior to demolition activities.</p>

1	<u>Erosion & Sediment Control BMPs:</u>
2	<p><u>Preserve Vegetation and Perimeter Grass Buffer Strips</u></p> <p>Utilized existing vegetation and perimeter grass buffer when feasible</p> <p>Stage construction site when feasible to preserve vegetation</p> <p>*Vegetation is more effective and easier to maintain than temporary sediment controls</p> <p>**Not appropriate for concentrated high velocity flow areas</p>
2	<p><u>Install Silt Fence</u></p> <p>Install perimeter silt-fence where storm-water exits the project limits. Include offsite areas used for stockpiling or equipment/vehicle/material staging.</p> <p>Schedule: Prior to initial earth disturbance</p>
4	<p><u>Install rock entry pad or utilize existing concrete entries.</u></p> <p>Clean street daily from debris by existing vehicles.</p> <p>Provide construction entrance with anti-tracking capabilities. (ie. existing paving, gravel entrance or rock entrance with liner).</p> <p>Schedule: Prior to initial earth disturbance</p>
5	<p><u>Provide filtration protection for existing storm drain inlet throats.</u></p> <p>Schedule: Prior to initial earth disturbance.</p>
6	<p>Provide filtration protection for drainage plumes at offsite exit location (ie. straw-filled sediment logs, hay bale, rock sock).</p> <p>Schedule: Prior to initial earth disturbance.</p>
7	<p>BMP-Utilize diversion dikes to direct water flow where practical.</p> <p>Schedule: Prior to initial earth disturbance.</p>
8	<p>Provide adequate trash containers and disposal service. Haul away trucks should be properly tarped prior to departing site.</p> <p>Schedule: As soon as needed.</p>
9	<p>Provide scheduled service for on-site toilets.</p> <p>Schedule: As soon as needed.</p>
10	<p>Provide 2nd containment for on-site fuel storage</p> <p>Schedule: As soon as needed.</p>
11	<p>Protect downstream side of dirt stockpiles.</p> <p>Schedule: As soon as needed.</p>

12	<p>Clean streets and storm inlets if offsite tracking occurs.</p> <p>Schedule: As soon as needed.</p>
13	<p>Protect drainage pipe inlets/outfalls & open drainage to offsite water routes (swales, creeks, rivers, ponds, lakes) w/ rock filter devices, hay-bales or silt-fence where needed.</p> <p>Schedule: As soon as needed.</p>
14	<p>Protect drainage over paved areas with hay-bales, sediment logs, rock filter devices, etc where needed.</p> <p>Schedule: As soon as needed.</p>
15	<p>Utilize sedimentation traps/basins/ponds where feasible to control off-site silt flow.</p> <p>Schedule: During initial grading activity.</p>
16	<p>Protect all offsite drainage routes w/ silt filtering devices such as:</p> <ul style="list-style-type: none"> • Existing storm sewer inlets. • MS4 bar ditches. • Street culvert pipe. • Outfalls with open discharge to fields, ditches, streams, creeks, ponds, etc. • Utilize structural controls such as: Silt fence, rock filter devices, hay-bales, sediment traps or basins or ponds. <p>Install rock check dams where drainage exists site.</p> <p>Schedule: As soon as drainage channel grading is complete.</p>
17	<p>Provide repairs and maintenance for all control devices as needed.</p> <ul style="list-style-type: none"> • Include removal of silt build-up when the device has become ineffective (eg. only half height or less remains on silt-fence or rock filter dams). • Include re-dress of rock construction entrances/exits when excessive dirt build-up renders anti-tracking ineffective.
18	<p>Provide watering to minimize dusting during demolition activities. See Note 22 of Civil Sheet C-01 General Notes/Grading.</p> <p>Schedule: As soon as demolition activities have begun.</p>
19	<p>Filter water runoff from demolition areas to control offsite transportation of pollution materials. (ie. gravel, rock filter, straw logs, silt fence, sediment trap/basin, grass areas)</p> <p>Schedule: As soon as needed</p>
10	<p>Assure in accordance with Federal, State and local regulations that all utility lines above and below ground are properly terminated and sealed. Same applies to underground storage tanks (ie. fuel).</p> <p>Schedule: As soon as needed</p>
21	<p>At the end of each day's activities, pickup all floatable trash/debris & dispose to bins.</p>

22	<p>Provide proper storage/disposal of chemical and hazardous materials. Report significant spills to proper authorities.</p> <p>Schedule: As soon as needed.</p>
23	<p>Clean offsite discharges of silt or pollution materials.</p> <p>Schedule: As soon as needed.</p>

24	<p>General House Keeping:</p> <ul style="list-style-type: none"> • Clean streets and storm inlets when offsite tracking occurs. • Pickup daily trash/floatable debris from all work areas and offsite areas. • Redress construction exits with clean rock when needed. <p>Schedule: Review daily.</p>
25	<p>Provide dust control as needed: watering, ground stabilization, control vehicle traffic, etc. See Section 4.9 of this SWP3 Manual.</p> <p>Schedule: During initial demolition and during grading activity.</p>
26	<p>Initiate stabilization measures (grass, erosion mat, rock) in disturbed areas where construction activity will cease for more than 14 days (ie. final graded areas).</p> <p>Note: Exceptions are defined in TXR150000 Part 3 Section F.2.b.iii (page 30).</p> <p>Be aware of the following requirements:</p> <ul style="list-style-type: none"> • In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls. • The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. • The operator must continue to inspect the BMPs at the frequency established in Section III.F.7.(a) of the permit for un-stabilized sites.
27	<p>SWP3 Site Inspections</p> <p>Provide site inspections as defined in Section 6 of this SWP3 Manual.</p>

28	<p>Maintenance and Repairs</p> <ul style="list-style-type: none"><li>• Repair and maintain all control devices as needed to assure they can operate effectively prior to the next rain event if feasible.<li>• If maintenance is not practical prior to the next anticipated rain event, the reason shall be documented in the SWP3 and maintenance shall be completed as soon as practical.<li>• Important Note: Erosion and sediment controls that have been intentionally disabled, run-over, removed or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.<li>• If periodic inspections indicate a control has been used incorrectly, is performing inadequately, or is damaged, then the operator must replace or modify the control as soon as practicable after making the discovery.<li>• 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. Include re-dress of rock construction entrances/exits when excessive dirt build-up renders anti-tracking ineffective<li>• Operator shall remove fugitive silt and debris deposits discovered past the project limits. 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. Operator must work with the owner or operator of adjacent offsite property to remove the sediment.
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Phase B	Install Underground Utilities.
1	Review and maintain previous Phase BMPs and Controls
2	<p>Install controls necessary in disturbed areas to prevent offsite silt flow past project limits (ie. silt fence, rock filters, slow-down checks across bar ditch drainage areas).</p> <p>Schedule: As soon as project limits are at risk of offsite silt flow.</p>
3	<p>Install inlet protection for all newly installed storm drains and for all newly constructed drainage inlet bottoms and at the end of exposed storm sewer pipes.</p> <p>Schedule: As soon as they are at risk of silt flowing into inlet.</p>
4	<p>Waterline flushing should include control of pollutants in the discharge (ie. discharge filtering, chlorine dissipation prior to entering storm drain system, containment/filtering). Utilize diffuser or aerial discharge to expose chlorine to air and sunlight.</p> <p>Schedule: As soon as water line flushing begins.</p>
5	<p>Proper storage/disposal of chemical and hazardous materials. Report significant spills. Complete Table 7 of SWP3 Manual Section 7.</p> <p>Schedule: As materials are stored on-site.</p>
6	<p>Install a designated concrete-washout area with runoff protection.</p> <ol style="list-style-type: none"> a. Concrete truck washout is allowed under this permit provided the requirements are met as defined in TPDES TXR150000 General Permit Part V. b. Discharges of storm water from on-site batch plants for concrete or asphalt are allowed under this permit provided the requirements are strictly met as defined in TPDES TXR150000 General Permit Part IV. This does not include any waste-water from batch plant activities. <ul style="list-style-type: none"> • If the Operator (s) defined in this SWP3 do not want to authorize batch plant activity under their permit then the batch plant operators should be advised to obtain authorization under an alternate permit and SWP3. <p>Schedule: As soon as wet concrete is available on-site.</p>
7	<p>Energy dissipation device (rock rip-rap, etc.) at outfalls</p> <p>Schedule: As soon as outfalls are completed.</p>
8	<p>Inlet protection for all phases of construction of new storm drains& pipe conveyance systems.</p> <p>Schedule: As soon as inlet boxes are set in ground or open ended pipe exist.</p>
9	<p>Temporary sediment basin(s) may be removed after all storm sewer systems are functional and inlet protection is in place.</p>

Phase C	Paving: Finalize pavement sub-grade preparation and install pavement.
Note	<p>On Site Concrete Batch Plant Operations---EXCLUSION</p> <p>Note: The SWPPP Narrative and TCEQ Stormwater Discharge Permit for this project does not cover the TXR150000 compliance requirements for any planned <u>on-site Concrete Batch Plant Operation</u>. <u>On-site Concrete Batch Plants</u> should be <u>separately permitted</u> by the batch plant operator.</p> <p>Important: The permitted Operator for this project construction activity should communicate to any operator of 'concrete batch manufacturing' that they be responsible for compliance to the TXR150000 Part IV requirements under their own separate TCEQ Storm Water Discharge permit. The location of any batch plant operation will be noted on this Swppp's site map but compliance to all details defined in the TXR150000 Regulations Storm Water Discharge Regulations for General Construction Activity Part IV for Stormwater Runoff from Concrete Batch Plants, starting at page 42 thru page 46, will be the <u>sole responsibility of the batch plant operator</u>. A copy of the current TXR150000 Storm Water Discharge Regulations for General Construction Activity is located in this SWPPP Narrative.</p> <p>Operators of 'onsite Concrete Batch Plants' should obtain a separate permit for storm water discharge due to the more extensive requirements for compliance and so not to put the risk of illicit discharges on the 'site development' operator but rather on the operator of the 'batch plant' itself.</p> <p><u>Special requirements</u> apply concerning benchmark water sample analysis and ongoing water sampling from storm water events. Stringent documentation to the SWPPP is required for outfall discharges that exceed benchmark pollutant levels. Stringent inspection requirements are required. Ongoing staff training is required prior to and during plant operations. Absolutely no wastewater discharges are allowed.</p>
1	Maintain Previous Phase BMP's and Controls
2	<p>Install a designated concrete-washout area with runoff protection. See Phase C Item 6 above.</p> <p>Note: On-site batch plants (concrete/asphalt) must comply w/ strict requirements of the TXR General Permit.</p> <p>Schedule: As soon as wet concrete is available on-site.</p>
3	<p>Proper storage/disposal of chemical and hazardous materials.</p> <p>Note: Report significant spills.</p> <p>Schedule: As soon as materials stored on-site.</p>
4	<p>Inlet protection for all storm drains.</p> <p>Schedule: As soon as exposed inlets exist.</p>

5	Erosion mat and/or silt fence in areas needing protection such as behind curb, wheelchair ramps and corners of new poured approaches. Schedule: As soon as final grade achieved behind curb or ramp areas.
6	Clean streets and inlet-protectors. Schedule: As soon as needed.
7	Remove temporary entrance/exits only just prior to pavement construction in these areas.

Phase D	Building Structure
1	Maintain Previous Phase BMP's and Controls
2	Install a designated concrete-washout area with runoff protection. See Phase C Item 6 above. Note: On-site batch plants (concrete/asphalt) need to comply with strict requirements of the TXR150000 General Permit. Schedule: As soon as wet concrete is available on-site.
3	Proper storage/disposal of chemical and hazardous materials. Note: Report significant spills. Schedule: As soon as materials stored on-site.
4	Inlet protection for all storm drains. Schedule: As soon as exposed inlets exist.
5	Erosion mat and/or silt fence in areas needing protection such as behind curb, wheelchair ramps and corners of new poured approaches. Schedule: As soon as final grade achieved behind curb or ramp areas.
6	Clean streets and inlet-protectors. Schedule: As soon as needed.

Phase E	Final Site Stabilization & Landscaping
1	Review details of Civil Sheet Landscaping Plan if available. Complete seeding/planting of vegetated areas in accordance with the landscaping plans to establish final stabilization.
1A	Protect all open disturbed areas where construction activity is completed with vegetation, erosion mat, sod, shrub beds, rock, landscaping, etc. Slope areas should be properly protected and stabilized with seeding and erosion mat. Provide erosion mat and/or silt fence in areas needing protection such as areas sloping into drainage channels, behind street curb, behind wheelchair ramps and corners of new poured street approaches. Schedule: As soon as final grade achieved in these areas.
2	Initiate re-vegetation in disturbed areas within 1 day where construction activity is expected to cease for more than 14 days (ie. all areas that are final graded).
3	Remove temporary erosion control devices (eg. silt-fence, inlet-protection, rock entrances, rock dams) after final stabilization has been achieved (minimal 70% grass perennial coverage). Schedule: As soon as area is final stabilized with 70% grass coverage or protected with erosion mat, sod, mulch, rock, pavement, etc.
Record Keeping Requirements	
1	Record on SWP3 Site Map & Section 7 SWPPP Logs areas that have been permanently stabilized and how (eg. Pavement, sidewalks, landscaping, sod, mulch, rock, rip-rap, erosion mat). Refer to landscape drawing in civil drawing for this site if available.

Additional Controls: Applies to all phases of construction


1

- De-Watering Activities:
- Design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.
 - De-watering activities should be treated.
 - Utilize discharge filtering.
 - Discharge to grassy areas/swales, sediment basins/ponds, rock lined areas, etc.
 - Some disposals may require transport offsite by truck to prevent polluting water resources.
 - Do not discharge directly into storm drains.
 - Do not discharge polluted or contaminated water.

Dewatering Filter Bags: The dewatering filter bag is an economical filtration product most commonly used for storm water runoff, dredging, and construction site filtering. Filter fabrics used on the bags allow for sediment and silt to settle inside of the bag, while clear water drains out of the bag's needle punched pores. This has helped clear out settling ponds and contain silt during dredging operations.

Applications

- Construction Site Dewatering
- Dumpster Dewatering
- Silt Filtration
- Storm Water Runoff Dewatering
- Small Sludge Dewatering



2

- Material Stored on-site:
- Review Section 3.C for description of on-site stored materials.
 - Description of controls to minimize pollutants from these materials is included in this SWP3.
 - Operator will complete the SWP3 Log: Table 4 for a description of hazardous construction materials expected to be stored on-site
 - All chemical, liquid product, petroleum products and non-inert wastes should be properly stored in designated areas protected from vandalism, contained with lids and contents labeled.
 - Clean up material should be made available on-site in storage area.
 - Trash containers shall be emptied when full and contents disposed of in accordance with local laws and permits.
 - Refer to SWP3 Manual Section 4.22 for spill response guide.
 - Refer to SWP3 Manual Section 3.C for a list of pollutant sources.

3	<p>Offsite Tracking and Generation of Dust:</p> <ul style="list-style-type: none"> • Minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. • A description of controls is included in this SWP3 Section
4	<p>Velocity Dissipation Devices: 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.</p>
5	<p>Potential Pollutant Sources: Refer to SWP3 Manual Section 3.C for a list of pollutant sources.</p>
6	<p>BMPs for eligible non-storm water components of the discharge: Provide appropriate pollution prevention measures for all eligible non-storm water components of the discharge, as listed in TXR150000 Part II.A.3. of the permit. (ie. containment and filtering)</p>
7	<div style="border: 2px solid black; padding: 5px;"> <p><u>SPILLS AND RELEASES: (OF REPORTABLE QUANTITIES)</u> <u>THE FOLLOWING STEPS SHALL BE TAKEN</u></p> <ol style="list-style-type: none"> 1. NOTIFY THE NATIONAL RESPONSE CENTER (800) 424-8802 OR (202) 426-2675 AS SOON AS YOU HAVE KNOWLEDGE OF THE SPILL. 2. THE SWPPP MUST BE MODIFIED WITHIN 14 DAYS TO PROVIDE A DESCRIPTION OF THE RELEASE, THE CIRCUMSTANCES LEADING TO THE RELEASE AND THE DATE OF THE RELEASE. </div>

<p>8</p>	<p style="text-align: center;"><u>CONSTRUCTION SITE SPILL PREVENTION</u></p> <p>THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE FOLLOWED ON-SITE TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.</p> <ol style="list-style-type: none"> 1. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB. 2. ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THE APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE. 3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL. 4. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. 5. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER. 6. MANUFACTURERS RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED. 7. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE. 8. ALL SPILLS, REGARDLESS OF SIZE, WILL BE CLEANED UP EXPEDIENTLY AND WITHIN THE REGULATIONS OF STATE AND LOCAL RULES AND REGULATIONS. 9. REPORTABLE QUANTITY SPILLS WILL BE REPORTED TO THE STATE OF TEXAS AND THE EPA IMMEDIATELY. 10. ALL MATERIALS USED TO CLEAN-UP SPILLS OF FUELS, LUBRICANTS, SOLVENTS, FERTILIZERS, HERBICIDES, AND OTHER RELATED ITEMS WILL BE DISPOSED OF OFF-SITE IN APPROPRIATE HAZARDOUS WASTE LANDFILL. 11. SEPARATE AREAS TO BE USED FOR EQUIPMENT FUELING, MAINTENANCE, AND LUBRICATION WILL BE DESIGNATED. AREA WILL BE CONTAINED WITHIN A BERM TO PREVENT THE FLOW OF MATERIAL TO STORM WATER. 12. ON-SITE STORAGE OF RAW OR BULK MATERIAL WILL BE KEPT TO A MINIMUM. ANY MATERIALS ARE TO BE SURROUNDED WITH A FILTER FABRIC FENCE. 	
<p>9</p>	<p style="text-align: center;"><u>MAINTENANCE</u></p> <ol style="list-style-type: none"> 1. MAINTENANCE AND REPAIR FOR ALL STABILIZATION, EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONDUCTED WITHIN 24 HOURS OF INSPECTION REPORT (SEE INSPECTIONS). 2. SEDIMENT WILL BE REMOVED FROM BEHIND THE FILTER FABRIC FENCES WHEN IT BECOMES ABOUT 1/3 THE HEIGHT OF THE DEVICE AND IMMEDIATELY BEFORE REMOVAL OF SAID FENCES FOR ANY REASON. 3. SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS OR BASIN WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. 4. ALL TEMPORARY CONTROLS WILL BE REMOVED AFTER THE DISTURBED AREAS HAVE BEEN STABILIZED AND A VEGETATIVE COVER DENSITY OF 70% IS ESTABLISHED. 5. ANY SEDIMENT IN THE EXISTING/PROPOSED DRAINAGE SYSTEMS ORIGINATING FROM THE SITE WILL BE REMOVED. 6. SEDIMENTS COLLECTED ALONG GUTTERS UPSTREAM OF EXISTING CURB INLETS WITH INLET PROTECTION BARRIERS SHALL BE REMOVED AFTER EVERY STORM EVENT. 7. ALL STORMWATER POLLUTION PREVENTION FACILITIES ARE TO BE MAINTAINED UNTIL THE COMPLETION OF THE PROJECT. 	
<p>10</p>	<p style="text-align: center;"><u>NON-STORM WATER DISCHARGES</u></p> <ol style="list-style-type: none"> 1. ALL WATER DISCHARGED FROM FIRE HYDRANTS AND WATER LINES WILL BE DISCHARGED ONTO A IMPERVIOUS MATERIAL (i.e., CONCRETE PAVEMENT) AND ROUTED THROUGH FILTER FABRIC FENCES PRIOR TO ENTERING STORM DRAINAGE SYSTEM. 2. EXCESS WATER FROM VEHICLE CLEANING AREAS WILL BE ROUTED THROUGH FILTER FABRIC FENCES PRIOR TO ENTRANCE INTO DRAINAGE SYSTEM. 3. ALL EXCESS WATER FROM DUST CONTROL, TEMPORARY OR PERMANENT SEEDING, SODDING, AND LANDSCAPING WILL BE ROUTED TO FILTER FABRIC FENCES OR INLET PROTECTION BARRIERS PRIOR TO ROUTING INTO DRAINAGE SYSTEM. 4. CONTAMINATED WATER FROM ANY LIME STABILIZATION ACTIVITIES WILL BE ROUTED TO ADEQUATELY SIZED & LOCATED SEDIMENT PIT(S) OR TRAP(S). MATERIAL IN TRAP(S) WILL BE REMOVED ON A REGULAR BASIS AND LEGALLY DISPOSED OF OFF-SITE. 	

Ongoing	Ongoing Operator Responsibilities
Inspections & Maintenance	<ul style="list-style-type: none"> • Refer to Section 6 of this SWP3 Manual. • Provide scheduled inspection reports and file in SWPPP manual. • Inspection reports should identify all incidences of non-compliance. • Review Phase A.17 for rules for maintenance/repair schedule. • If 3rd party inspectors are used, be certain proper signature delegation has been recorded. See SWP3 Section 1 documents. • Operator site supervisor is responsible for SWP3 recordkeeping duties as defined in the Record Keeping requirement that follows
Record Keeping	<p>1. Operator site supervisor must maintain an accurate SWP3 Site Drawing indicating location of all a) erosion control devices b) concrete wash-out c) portable toilets d) fuel storage e) hazardous chemical storage f) trash containers g) grass buffers h) final stabilized areas i) storm water outfalls.</p> <p>2. Operator site supervisor to record dates in the SWP3 Logs Section 7 for:</p> <ol style="list-style-type: none"> a) start/stop dates of each phase of construction. b) installation dates of erosion control devices c) dates of repair of erosion control devices d) dates of removal of erosion control devices e) list all chemical and hazardous materials to be stored on-site. <p>1. Record all changes and revisions to the SWP3 in Logs.</p>
Training	<p>Workers and sub-contractors should receive training for the following:</p> <ul style="list-style-type: none"> • Procedures for SWP3 Compliance • Procedures for spill response • Procedures for trash disposal.
Maintenance	Review above item Phase A.17 for rules for maintenance/repair schedule.
Final Site Stabilization	Upon final site stabilization, remove all temporary controls such as silt fence, sediment logs, rock berms and inlet protectors on storm drains.

	Terminating the TCEQ Permit
	<p>Small Construction Sites:</p> <ul style="list-style-type: none">a) Remove the posted TCEQ CSN Form; sign termination date on bottom of the form.b) Send copy to SWP3 Manual, all MS4's receiving storm water discharge from this site & to other Operators, including new Operators taking over site responsibilities. <p>Large Construction Sites:</p> <ul style="list-style-type: none">c) Remove the posted TCEQ CSN Form.d) Submit a signed Notice of Termination (NOT) Form to TCEQ.e) Send copy of the CSN & NOT to SWP3 Manual, all MS4's receiving storm water discharge from this site & to all other Operators, including new Operators taking over site responsibilities. Permit ends at midnight on date of removal of CSN for Small Construction Sites and post mark date of NOT for Large Construction Sites.
	<p>Retainage of Records</p> <p>Records must be retained for a minimum period of at least 3 years after one of the following is achieved:</p> <ul style="list-style-type: none">1) Submittal of a Notice of Termination (NOT).2) The date final stabilization has been achieved on all portions of the site that is the responsibility of the permittee.3) Another permitted operator has assumed control according to overall areas of the site that have been finally stabilized.

B. Temporary and Permanent Stabilization Practices

The following stabilization measures should be initiated as soon as practicable on portions of the site where construction activities have temporarily and/or permanently ceased.

Description of Temporary Erosion& Sediment Control Practices

1	Silt fence to protect disturbed ground at project limits.
2	Rock entrance to provide anti-dirt tracking into streets.
3	Inlet protectors for existing storm drains.
4	Slow-down silt-fence cross-checks in drainage channels to minimize erosion effects.
5	Rock filter dams in drainage areas such as creek beds.
6	Designated areas for equipment, vehicle and materials storage.
7	Silt fence protection for on-site and offsite dirt stockpiling or offsite borrow areas.
8	Street sweeping and cleaning of storm drain inlet protectors
9	Daily pickup of floatable trash and debris.

Description of Temporary Stabilization Measures

1	<p>Initiate stabilization measures (grass, erosion mat, rock) in disturbed areas within 1 day where construction activity will cease for more than 14 days (ie. final graded areas).</p> <p>Note: Exceptions are defined in TXR150000 Be advised of the following requirements:</p> <ul style="list-style-type: none"> • In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls. • The operator must document in the SWP3 the reason why stabilization measures are not feasible, and demonstrate that the perimeter controls will retain sediment on site to the extent practicable.
2	The operator must continue to inspect all BMPs at the frequency established in the SWP3.

Description of Permanent Stabilization Measures

1	<p>Disturbed areas will be covered with:</p> <ul style="list-style-type: none"> • Grass vegetation and landscape areas. • Rock at outfall drainage paths to provide energy dissipation and minimize erosion • Paved surfaces such as parking areas, firelanes, sidewalk areas and building pad.
2	Final stabilization must be achieved prior to termination of permit coverage by Owner Operator.

Description of Permanent Storm Water Conveyance

The following controls are considered measures to be installed during construction that will provide permanent storm water conveyance after construction activity is completed:

Item	Description
1	Lot Sheet flow drainage into the proposed detention pond with discharge to the South into an unnamed stream. Outfall South into South Fork San Gabriel River. (water segment #1250)

Section 4: BMP Description and Structural Controls

BMP: Best Management Practices

This section describes Best Management Practices (BMP) for minimizing pollution in storm-water run-off. Operator is advised to review and put in to practice those that apply to this project.

BMPs may include:

-) Techniques or practices such as maintaining grass buffer areas; planning phased areas of earth disturbance; daily trash pick-up around the site; street cleanup.
-) Structural controls such as silt fence; rock filter dams; storm drain inlet protection; rock entrances.

General Requirement: Review this list prior to initial earth disturbing activities.

1	Provide BMPs and pollution controls to protect the following water discharges from the site: <ul style="list-style-type: none">) Storm water discharges associated with Construction Activity) Storm water discharges associated with Construction Support Activities) Eligible non-storm water discharges as listed in TXR150000Part II Section A.3
2	Area (s) to be protected: Apply BMPs to all areas within the project limit and all offsite areas used for borrow, stockpiling, equipment/material/vehicle staging and all construction support activities located within 1 mile of this site.
3	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.
4	Control measures must be properly selected, installed, and maintained according to the manufacturers or designers specifications
5	Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

Compliance with Federal, State or Local Regulations

1	Operator must comply with applicable federal, state and/or local waste disposal sanitary sewer or septic system regulations.
2	Any requirements or additional BMP's that are required and are beyond the TCEQ regulations addressed in this manual must be adhered to.

Structural Controls and Installation Guidelines

1	Installation guidelines for structural controls shall be as defined in Section 8 of this SWP3 as written by NCTCOG (North Central Texas Council of Governments).
2	Design details defined in project civil drawings such as those titled 'Erosion Control Details' may take precedence as determined by the Operator responsible for controls installation.
3	Compliance with local municipal, county, state or federal ordinances and regulations may take precedence as determined by the Operator responsible for controls installation.

BMP: Best Management Practices

BMP Menu List

1	Common Practices
2	Daily Housekeeping
3	Erosion and Sediment Controls
4	Soil Stabilization
5	Solid Waste Disposal
6	Lime Stabilization
7	Hazardous Waste
8	Dust Control BMP
9	Off-Site Vehicle Tracking
10	Sanitary/Septic
11	Water Source
12	Equipment Fueling/Maintenance Areas
13	Hazardous Material Storage Areas
14	Construction and Waste Materials to be Stored On-Site
15	Stockpile Management
16	De-Watering Activities
17	Training of Workers and Sub-Contractors
18	Concrete Batch Plant
19	Concrete Wash-out
20	Sedimentation Basins Greater Than 10 Acres Drained
21	Sedimentation Basins Less Than 10 Acres Drained
22	Contaminated Soil Management Plan
23	Spill Response Plan

1. BMP: Common Practices

A	<p>Prior to initial earth disturbing activities, perform due diligence for the following concerning on-site and off-site support areas:</p> <ul style="list-style-type: none">) Survey site for existence of Historical Places; avoid negative impact.) Survey site for existence of Endangered Species; avoid negative impact.) Avoid negative impact on Waters of the United States.) Recommend photo documentation of pre-construction condition of all areas past project limits such as outfalls, creeks runoff, MS4 conveyances, etc.
B	<p>Preserving and Establishing Vegetation:</p> <ul style="list-style-type: none">) Preserve existing vegetation as much as possible by minimizing disturbed areas during construction activities. If possible, phase or sequence disturbed areas to minimize total acreage disturbed at one time and to minimize exposure time.) Utilize a vegetation buffer strip around the perimeter or as a minimum on the down stream side of project limits. This will slow storm water runoff and filter sediment and pollutants.) Apply temporary stabilization immediately after final grading (eg. seeding).
C	<p>Temporary controls can include: Slope texturing, velocity dissipation devices, flow diversion, sediment traps, basins or ponds</p>
D	<p>Designate areas for the following: Mark-off areas with temporary fencing.</p> <ul style="list-style-type: none">) Vehicle and equipment parking) Material storage) Equipment maintenance; Fuel storage; Re-fueling operations) Trash receptacle areas) Toilet areas) Concrete wash-out areas.
E	<p>Provide trash receptacles and toilet facilities for employees and sub-contractors.</p>
F	<p>Physically mark off limits of disturbance on the site with tape, signs or other methods, so that workers can see areas to be protected</p>
G	<p>Have construction materials on-hand to complete the work without delay.</p>
H	<p>Have clean-up materials on-hand in case of spill of hazardous materials.</p>
I	<p>If feasible, construct sediment traps, basins or ponds at the onset of the project. See requirements in Section II.F.2.c of General Permit.</p>
J	<p>Install dirt berms to direct storm water around disturbed areas and into runoff areas where it can more easily be controlled (ie. sediment trap, basin, pond, grass area, rock are, etc.)</p>
K	<p>Require that all on-site fuel storage be provided with secondary containment and a spill control area.</p>
L	<p>All concrete wash-out to be at designated location that is protected from runoff. See requirements in Section IV and V of General Permit.</p>
M	<p>Advise any operator of on-site concrete batch plants that they must comply with Section IV of the TXR150000 General Permit. Advise in writing; utilize the form in Section 2 of this SWP3 Manual.</p>
N	<p>All polluted storm-water discharge must be treated through sediment controls before offsite discharge (silt fence, rock filter, sedimentation traps or ponds, grass buffers, etc.).</p>
O	<p>See list of eligible non-storm water discharges in Section 3.B of this SWP3 Manual that can be directly released from the site. Treatment is required prior to release if the discharge contains any pollution materials or chemicals.</p>

P	All dewatering activities that contain pollution materials must provide for filtering treatment and or containment prior to discharge release: <input checked="" type="checkbox"/> Pumping activities that may contain pollution materials such as sediment or chemicals). <input checked="" type="checkbox"/> Utilize pump discharge filter bladders, rock/gravel filtering, grass filtering, etc.
Q	Washout activities must include containment and or filtering prior to release to drainage system: <input checked="" type="checkbox"/> Includes but is not limited to wash out of concrete, mortar, gunnite, paint, solvents, curing compounds, lime, fertilizers, paints, lacquers, etc. <input checked="" type="checkbox"/> Direct washout to storm drains or offsite water drainage is strictly prohibited. <input checked="" type="checkbox"/> Concrete wash-out must comply strictly with Section V of the TXR150000 General Permit.
R	Disposal of waste material directly to storm drains or offsite water drainage areas is strictly prohibited.
S	All waste oils, grease, petroleum products must be properly contained and disposed to licensed recyclers or waste disposal operators. Direct disposal to waste containers, storm drains, offsite drainage areas or underground disposal is strictly prohibited.
T	Provide for on-site and off-site support area dust control. Review BMP in Section 8 of this SWP3 Manual for Dust Control. (BMP may include watering if water source available, establishing vegetation, applying soil bonding agents, restricting vehicle/equipment traffic to soil dust areas.
U	Instructing and Training of Workers and Sub-contractors <input checked="" type="checkbox"/> Provide training on SWP3, trash disposal, contaminated soil and spill response. <input checked="" type="checkbox"/> Advise workers to pick-up & dispose floatable trash each day in their work areas. <input checked="" type="checkbox"/> Advise workers to seal all open chemical containers when not being used. <input checked="" type="checkbox"/> Review this list of Common BMPs during training sessions. <input checked="" type="checkbox"/> Document training sessions and attendees. See SWP3 Manual Section 7 Table 9.

2. BMP: Daily Housekeeping

A	Provide waste management. Remove ground trash to containers
B	Clean streets
C	Remove fugitive silt deposits escaping project limits
D	Prepare for spills. Isolate spills, clean, record. Have clean-up materials on-hand.
E	Designate concrete wash-out, equipment maintenance, fueling and material storage areas.

3. BMP: Erosion and Sediment Controls

A	<p>Initial Controls</p> <p>Prior to initial earth disturbance, provide for the installation of perimeter controls such as: silt fence, sediment filter logs, grass buffers, rock filters, rock construction entrances and exits, existing storm drain inlet protection on-site and off-site, protection for all outfall areas, etc.</p> <p>Note: Include all off-site support areas.</p>
B	<p>Sequenced Controls</p> <p>Additional structural erosion and sediment controls for subsequent phases of construction should be installed in accordance with the sequence schedule defined in the SWP3 Section 3.D.</p>
C	<p>Installation Specifications</p> <p>Refer to the BMP descriptions provided by North Central Texas Council of Governments (NCT COG specifications) that are included in this SWP3 Manual Section 8.</p> <p>Details and installation specifications of BMP and erosion/sediment control devices provided by the approved civil plans and specifications for this project or local municipal, county, state or federal requirements may differ and take precedence over the NCT COG specifications. Final design selection by the operator shall be determined after consultation with the appropriate regulators enforcing the construction code for this project.</p>
D	<p>Primary control devices for this site may include:</p> <ul style="list-style-type: none">) Perimeter silt-fence) Inlet protection for storm drains) Sediment filter logs) Hay bales) Rock filter dams) Stone overflows) Rock construction entrance) Sediment traps, basins, ponds.) Concrete wash-out basins) Outfall protection with rock.) Swales) Diversion dikes) Erosion mat) Seeding for vegetation) Final landscaping such as sod, shrub beds, rock
E	<p>Storm Drains</p> <p>Provide inlet protection for storm drainage system:</p> <ul style="list-style-type: none">) At all times, new and existing storm drain inlets shall be protected by appropriate structural controls from silt, floatable debris and polluted materials from entering the drains.) New storm drains under construction and open ended pipe conveyance should be protected at all times during all phases of their construction.) Installation of storm drain inlet protection located on public roads should be carefully evaluated to avoid situation where water flooding may occur.
F	<p>Storm Drainage Paths</p> <p>Drainage paths such as swales, bar ditches and outfalls should be protected with controls to provide energy dissipation and filtering.</p> <ul style="list-style-type: none">) Controls may include silt fence, rock filter, rip-rap, grass buffer, sediment traps/ponds).) Locate at project discharge limits.) Remove fugitive silt or pollution materials as soon as possible and prior to next rain event.

4. BMP: Soil Stabilization

A	At all times, disturbed ground onsite and offsite shall be protected from silt runoff with structural sediment controls such as silt fence; sediment traps/basins; rock filter devices.
B	<p>Final graded areas should be:</p> <ul style="list-style-type: none">) Seeded for temporary vegetation or) Permanently stabilized with permanent vegetation coverage, landscaping, rock, sod, mulch, erosion mat or paving.
C	<p>Important Note: Per the TXR150000 General Permit, all disturbed areas where construction activity will cease for longer than 14 days should have stabilization measures initiated such as seeding or mulch within 14 days of the ceasing of construction activities in those areas.</p>
D	<p>Interim Stabilization: Provide for following BMP controls where feasible.</p> <ul style="list-style-type: none">) Provide dust control with watering trucks if water is available) Provide temporary sedimentation pits, basins, ponds if feasible.) Maintain grass buffers where possible) Cut sub-grade below existing curb-line to provide settling of sediment.) Direct water-flow to areas that provide settling or silt filtration prior to exiting site.
E	<p>Permanent Stabilization: Provide for following BMP controls where feasible.</p> <ul style="list-style-type: none">) In accordance with project design, provide paving, sod, mulch, landscaping beds and plantings, erosion mat, sidewalks, building structures, permanent vegetation, rock coverage such as rip-rap, drainage paved plumes, energy dissipation devices.) Temporary controls should remain in-place until 70% vegetation coverage is achieved with perennial grass or restored to original native vegetation.) Provide paved areas drainage to storm water conveyance systems (such as underground storm water collection system or bar ditch) for discharge to the MS4.

5. BMP: Solid Waste Disposal

A	No solid material, including building materials, is permitted to be discharged to surface waters or buried on site. All solid waste materials, including disposable materials incidental to the construction activity, must be collected in containers or closed dumpsters.
B	The collection containers must be emptied periodically and the collected material disposed to a landfill permitted by the State and/or appropriate local municipality to accept the waste.

6. BMP: Lime Stabilization

A	Limit lime stabilization operations to that which can be mixed and compacted by the end of each work day. Geo-textile fabric is not effective in filtering lime since the grain size is smaller than the opening in the fabric. Filter or contain all runoff (ie. rock/gravel).
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7. BMP: Hazardous Waste

A	Minimize the use of hazardous materials and generation of hazardous wastes.
B	All hazardous waste materials must be disposed in the manner specified by federal, state, or local regulations or by the manufacturer.
C	Use containment berms in fueling & maintenance areas to contain spills.
D	A foreman or supervisor should be designated to oversee, enforce and instruct construction workers on proper hazardous waste procedures.

8. BMP: Dust Control BMP

A	During construction, water trucks should be used, as needed, by each contractor or subcontractor to reduce dust. After construction, stabilize the site to reduce dust.
B	Demolition activities should provide watering to control airborne material (eg. dust, particulates).
C	Provide water filtering to assure no contaminates discharge into the existing storm drain system.

9. BMP: Off-Site Vehicle Tracking

A	Construction traffic should enter and exit the site at Construction Entrances that have stabilized rock and a sub-grade geo-textile liner or equivalent device.
B	The purpose of the rock entrance is to minimize the amount of soil and mud that is tracked onto existing streets. If sediment escapes the construction site, offsite accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts.
C	Trucks carrying erodable materials (i.e. soil, concrete dust, and sand) off-site and onto any public road must be tarped.

10. BMP: Sanitary/Septic

A	Comply with all state and local sanitary sewer, portable toilet or septic system regulations. Each contractor or subcontractor throughout construction activities shall provide sanitary facilities at the site. Provide regular service of all sanitary facilities.
B	Locate toilets 20' from pavement, storm drains or water outfall areas to avoid spillage entering these areas. Locate on permeable surfaces such as grass or dirt to allow absorption in case of spill; avoid impermeable surfaces such as concrete, asphalt. Consider the use of perimeter containment device.

11. BMP: Water Source

A	Water used to establish and maintain grass, to control dust, and for other construction purposes must originate from a public water supply or private well approved by the State or local health department.
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12. BMP: Equipment Fueling and Equipment Maintenance Areas

A	Equipment fueling, maintenance and cleaning should only be done in protected areas (i.e. provide secondary containment vessel, bermed area with liner).
B	Leaking equipment and maintenance fluids must be collected and not allowed to discharge onto soil where they may be washed away during a rain event.
C	If any fuels or hazardous substances are spilled onto the ground they should be immediately cleaned up and properly disposed of. This includes removal of impacted soils if necessary.
D	Samples must be taken to profile the waste and confirm that all contamination has been removed.
E	Equipment wash down (except for wheel washes) within an area surrounded by a containment area.
F	Do not use detergents.
G	Protect area from storm water or direct storm water flow from these 'maintenance areas' to a sump pit or other pollutant trapping device.

13. BMP: Hazardous Material Storage Areas

A	Maintain a list of all chemicals, paints, solvents, fertilizers and other toxic or hazardous materials to be stored on-site. See Section 7 Table 4 of SWP3 Manual. MSDS sheets must be stored on site.
B	Site superintendent to indicate storage location(s) on the SWPPP site drawing.
C	All containers are to be clearly labeled. They should be stored in their original containers (if original container is not re-sealable, store the products in clearly labeled, waterproof containers).
D	Except during application, containers should be kept on trucks or in bermed areas within covered storage facilities.
E	Runoff containing such materials must be collected, removed from the site and disposed of in accordance with the federal, state and local regulations.
F	As may be required by federal, state or local regulations, the Contractor should have a Hazardous Materials Management Plan and/or Hazardous Materials Spill and Prevention Program in place. Those would be separate plans not included in this SWP3.
G	A foreman or supervisor should be designated to oversee, enforce and instruct workers and sub-contractors on proper hazardous materials storage/handling procedures.
H	List materials on form located in Section 7 Table 4 of SWP3 Manual for on-site and off-site areas

14. BMP: Construction and Waste Materials to be Stored On-Site

A	List all materials on form located in Section 7 of the SWP3 Manual; as the project progresses amend the SWP3 to include any new materials that were not originally listed.
B	Materials will include topsoil, fills, spoils, crushed aggregate, concrete washout, lumber, building material waste, concrete, detergents, fuels, lubricants, wood, stucco, drywall, drywall compound, glue, paint, solvents, curing compounds.

15. BMP: Stockpile Management

A	Excess soils should not remain as soil piles any longer than necessary.
B	Existing stockpiles are not to be contaminated in any way with construction debris or fuel spills from construction equipment working in or around any stockpile.
C	Provide downstream protection of stockpiles from storm water runoff.
D	Seed to establish vegetation if piles will remain idle for more than 14 days.
E	Site project superintendent needs to record the following in the SWP3 Site Map and Record Logs: <ul style="list-style-type: none">) Show the on-site and off-site stockpile and borrow areas and haul routes.) Record haul routes and locations of offsite stockpile and borrow areas) Record cut/fill operations of the project.) Provide BMP controls for offsite areas (ie. silt fence, vegetation, anti-tracking entrances, street cleaning, inlet protection for nearby storm drains.

16. BMP: De-Watering Activities

A	All contaminated water from de-watering activities should be treated and utilize a filtering method to prevent transport of sediment or any polluted materials off-site.
B	Filtering may include rock filter, bag filter, sediment traps/basins/ponds, grass buffer, rock lined drainage areas, etc.
C	Consideration should be given to location of pump, waterline discharge and drainage path to avoid additional erosion and sediment loss from the site.
D	Some disposal may require transport offsite by truck to prevent polluting water resources.
E	Do not discharge directly into storm drains, outfalls or creeks/ponds/lakes/rivers.

17. BMP: Training of Workers and Sub-Contractors

A	<p>Employees and sub-contractors should receive documented training on:</p> <ul style="list-style-type: none">) SWP3 requirements.) Spill response procedures.) Storage and handling of hazardous materials.) Trash pickup and disposal procedures.
B	Advise all employees and sub-contractors to utilize rock entrance/exits to minimize offsite tracking.
C	Advise all employees and sub-contractors to pickup trash daily in their work areas.

18. BMP: Storm Water Runoff from Concrete Batch Plants (See TXR150000 Part IV)

A	Discharges of storm water runoff from concrete batch plants at regulated construction sites may be authorized under the provisions of this general permit provided that the following requirements are met for concrete batch plant(s) authorized under this permit.
B	If discharges of storm water runoff from concrete batch plants are not covered under this general permit, then discharges must be authorized under an alternative general permit or individual permit.
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
D	<p>Allowing Concrete Batch Plant Operators to operate under this General Permit</p> <p>If the Operators for this SWP3 allow concrete batch plant operations to be allowed under their permit, the Concrete Batch Plant Operator must maintain strict compliance with all conditions defined in the TPDES TXR150000 General Permit Part IV.</p>
E	<p>Additional Compliance Requirements</p> <p>Additional compliance requirements for Operators of Concrete Batch Plants include:</p> <ul style="list-style-type: none">) Benchmark Sampling) Description of Potential Pollutant Sources) Inventory of Exposed Materials) Spills and Leaks) Sampling Data) Good Housekeeping) Spill Prevention and Response Procedures) Inspections) Employee Training) Record Keeping and Internal Reporting Procedures) Management of Runoff) Comprehensive Compliance Evaluation
F	<p>Wastewater Discharges</p> <p>Wastewater discharges associated with concrete production including wastewater disposal by land application are <i>not authorized</i> 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.</p> <p>Discharges of concrete truck washout at construction sites may be authorized if conducted in accordance with the requirements of Part V of the TPDES TXR150000 General Permit.</p>
G	<p>Require Concrete Batch Plant Operators to Obtain Individual or Alternate Permit</p> <p>If discharges of storm water runoff from concrete batch plants are not covered under this Operator's general permit, then discharges must be authorized under an alternative general permit or individual permit.</p>

19. BMP: Concrete Truck Wash-Out Requirements (See TXR150000 Part V)

A	The general permit authorizes the wash out of concrete trucks provided the following requirements are met.. Authorization is limited to the land disposal of wash out water from concrete trucks that are associated with off-site production facilities. Wash out water associated with on-site concrete production facilities must be authorized under a separate TCEQ general permit or individual permit.
B	Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
C	<p>Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters.</p> <p>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.</p>
D	Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck washout as the result of rain.
E	The discharge of wash out water shall not cause or contribute to groundwater contamination.
F	Concrete wash out areas shall be included on the SWP3 Site Map.

20. BMP: Sedimentation Basins (See TXR15000 Part II Section F.2.c.i-ii)**Sites w/ Drainage Areas of Ten (10) or More Acres**

A	The TXR150000 General Permit requires the use of Sedimentation Basins, where feasible, for a common drainage location serving an area with 10+ acres disturbed at one time.
B	Sediment 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.
C	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 undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin.
D	The basin(s) should be installed as early as possible in the initial construction activities so that sediment management begins as soon as possible.
E	<p>SWP3 Documentation Required</p> <p>Sizing determination and location must be documented in the SWP3 Record. Capacity calculations shall be included in the SWP3 showing sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. Operator may want to define this calculation with the assistance of the civil engineer for the project.</p>
F	<p>Option 1:</p> <p>In lieu of design calculations defined in Item 1 above, 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.</p> <ul style="list-style-type: none">) For each acre, that's equivalent to a 30'L x 30' W x 4' D Basin.) For 10 acres, that's equivalent to a 300'L x 30'W x 4" D Basin. <p>The following must be documented in the SWP3 Record: (See Section 1 & SWP3 Record Logs)</p> <ul style="list-style-type: none">) Capacity calculations.) The location of the Basin (s) shall be noted on the SWP3 Site Map.) The installation date (s) noted in the SWP3 Record Logs.
G	<p>Option 2:</p> <p>If a sedimentation basin is not feasible, provide equivalent control measures.</p> <ul style="list-style-type: none">) In determining the feasibility of a sediment basin, 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.) Equivalent control measures: Perimeter Controls; At a minimum, silt fences, vegetative buffers, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for side slope boundaries deemed appropriate as dictated by site conditions.) The Operator must be able to demonstrate to a local, state or federal inspector why the sedimentation basin was not constructed for reasons other than convenience. <p>The following must be documented in the SWP3 Record: (See Section 1 & SWP3 Record Logs):</p> <ul style="list-style-type: none">) Document the reason that the sediment basins are not feasible, and define the equivalent control measures, which may include a series of smaller sediment basins.) The location of the equivalent control measures shall be noted on the SWP3 Site Map.) The installation date (s) noted in the SWP3 Record Logs

21. BMP: Sedimentation Basins (See TXR15000 Part II Section F.2.c.i-ii)**Sites w/ Drainage Areas of Less Than Ten (10) Acres**

A	Sediment traps and sediment basins may be used to control solids in storm water runoff for drainage locations serving less than ten (10) acres.
B	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
C	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.

22. BMP: Contaminated Soil Management Plan

Note: It is not within the scope of this Swppp to address the site's existing soil condition. This section is a general guide only and not a formal 'site specific soil management plan'. The Operator should develop a 'site specific soil management plan' if they suspect the existence of polluted, hazardous or contaminated soils or encounter such during construction activities.

Upon the discovery of any suspected contaminated soil the Construction Manger should have a soil analysis performed by a qualified testing facility and make arrangements for the proper disposal and/or treatment of contaminated soils.

All contaminated soils that will be stockpiled on site must be protected from precipitation and resultant erosion. Soil should be placed inside hay bale dikes and covered with black plastic (or equivalent containment).

Any excess soils should not remain as soil piles any longer than necessary. Should there be a need to store excess soils on the project site, the location of any stockpiles should be noted in the Storm Water Pollution Prevention Plan (SWPPP).

Any stockpiles or fill areas not in use for a period of 21 days are to be stabilized by some means, such as covering, surrounding by silt fencing or by the use of temporary seed.

Soil transported on roadways should be transported in trucks that are in good condition and have covers for the bed.

Record cut/fill operations of the project. If the project does not balance, include borrow source and/or disposal location of any soils. Record haul routes. Include a site map that shows the stockpile, borrow areas, haul routes and project site.

Extra care will be taken to ensure that BMP are utilized at all times for stockpile management. Existing stockpiles are not to be contaminated in any way with construction debris or fuel spills from construction equipment working in or around any stockpile.

23. BMP: Spill Response Plan

In the event of a spill or loss of product that results in an impact or potential impact to soil, surface water, groundwater or sanitary sewer system, Operator's representative should refer immediate to a spill response plan. This section is a guide and not a formal plan. It is recommended that the Operator develop a formal procedure.

Any discharges during a 24 hour period that equals or exceeds the federal and state reportable quantities (refer to 40 CFR 110, 117,302) should be reported by calling the following agencies as soon as discovery is made:

-) Texas Commission on Environmental Quality (TCEQ) 800-832-8224
-) National Response Center 800-424-8802

It is recommended that verbal notification be made immediately to the proper authorities along with written reports identifying direction and rate of flow, total quantity of material discharged, description of corrective action taken and plans for preventing recurrence. Coordinate activities involving sampling and disposal of impacted media with the proper authorities.

The SWPPP must be revised within calendar 14 days of knowledge of the release defining the following information:

-) Describe the spill incident and date of spill.
-) Define location of spill.
-) Define cause of spill.
-) Define action taken to clean spill.
-) Define measures needed to prevent future occurrence of spill release.

The following is a guide of some reportable quantities:

Diesel fuel, engine oil, hydraulic and brake fluid released to ground	30 gallons
Concrete mix released to ground	Ten 40-lb bags
Paint, solvents, thinners, anti-freeze, battery acid, engine degreasers, gasoline release to ground	100 lbs (13 gall)
Refrigerant released to air	1 lb
Engine oil, fuel, hydraulic and brake fluid released to water	Visible sheen

Describe the method for refueling of equipment on-site

Indicate the method that will be used for refueling of onsite equipment:

_____ A designated area will be used for refueling; onsite storage tank.

_____ A mobile tanker truck will travel to each piece of equipment onsite

23. BMP: Spill Response Plan---continued---

Prevention

The contractor will employ the following policies and procedures during construction activities to prevent the occurrence of spills at the job site:

-) Properly train on-site employees of spill awareness and prevention
-) Keep all liquids off site until needed.
-) Transfer liquids between containers only over paved areas and away from any storm drains, creeks, channels or other surface water bodies.

Preparedness

Provide necessary spill response equipment and supplies for use in the event of a spill.

Response Action

1. (CALL 911 FIRST IF IMMEDIATE DANGER TO LIFE OR HEALTH)
2. The Site Superintendent or Emergency Coordinator will lead all response actions.
3. Ensure that the necessary actions are taken to clean up the spill.
4. Define the problem by quickly analyzing and assessing the situation.
5. Determine where the spill will go and what problems might result.
6. CALL the appropriate people for help if additional assistance is needed.
7. Site control - keep people away and upwind.
8. Stop the source if you can do it safely.
9. Eliminate sources of ignition.
10. Attempt to contain the spilled material if you can do it safely.
11. Place drip pan or bucket under leaking valve.
12. Use absorbent material on small spill (kitty litter, pads, sand).
13. Block sanitary sewer drain
14. Block or dike any nearby drains or pathways to surface waters.
15. If a material spill occurs on pavement or other impervious surface, absorb spilled material with rags or other inert material.
16. Place rags and absorbent material on plastic sheeting or in a clean drum.
17. Place any impacted soil on an adequately sized sheet of plastic or in a clean drum.
18. Cover impacted soil or absorbent material stored on plastic with plastic.
19. Cover and seal drums that contain impacted soil or absorbent materials.
20. Work with the proper authorities to determine the appropriate sampling and disposal protocols for handling impacted soils or absorbent materials.
21. After a spill response, review prevention, preparedness and response activities to determine if the spill could have been avoided.
22. Maintain documentation of disposal records.

Section 5

Copy of the TPDES TXR150000 General Permit



General Permit to Discharge Under the Texas Pollutant Discharge Elimination System

Stormwater Discharges Associated with Construction Activities TXR150000

Effective March 5, 2023

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

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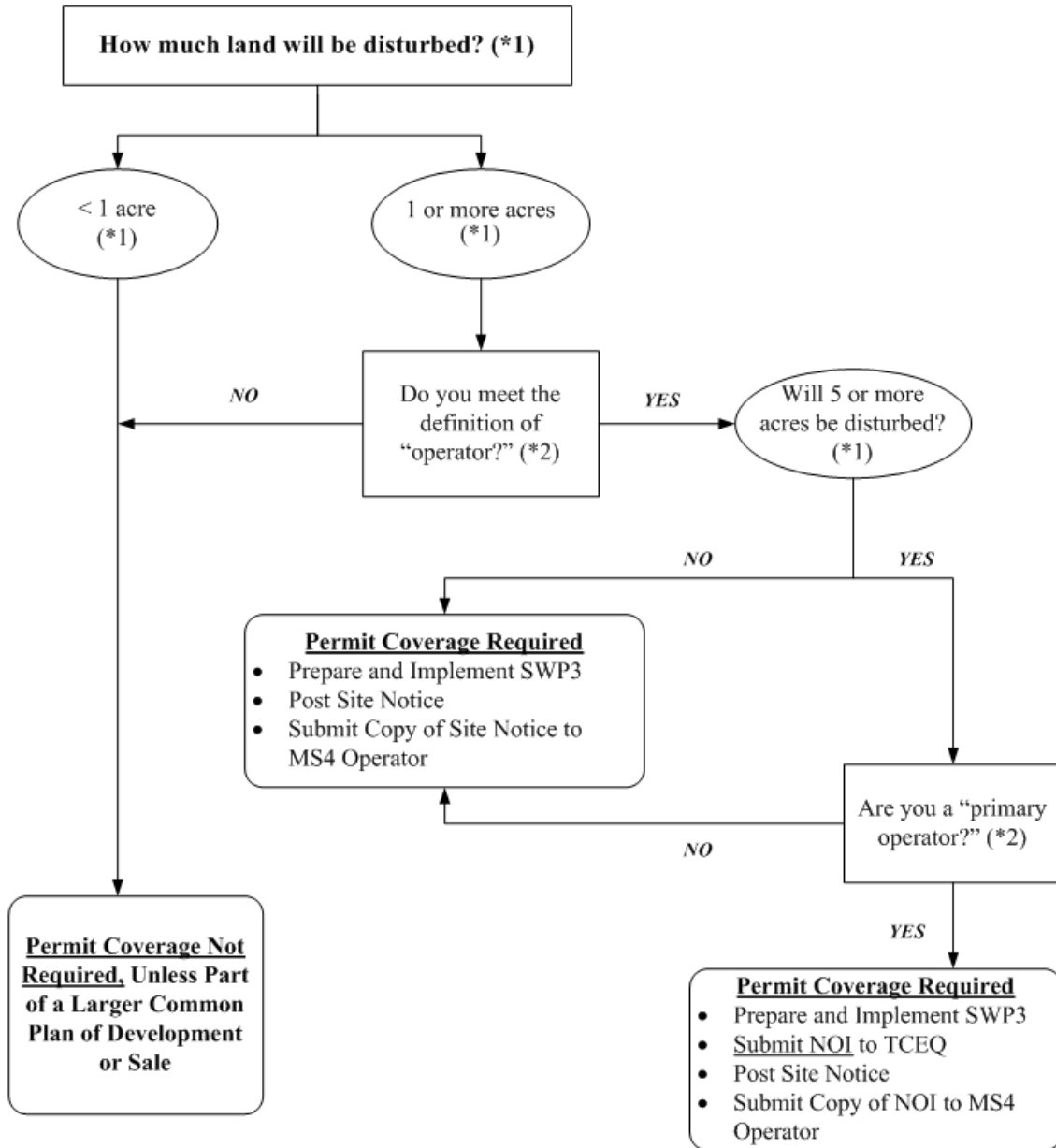
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Part I. Flow Chart and Definitions

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.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

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease (*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

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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

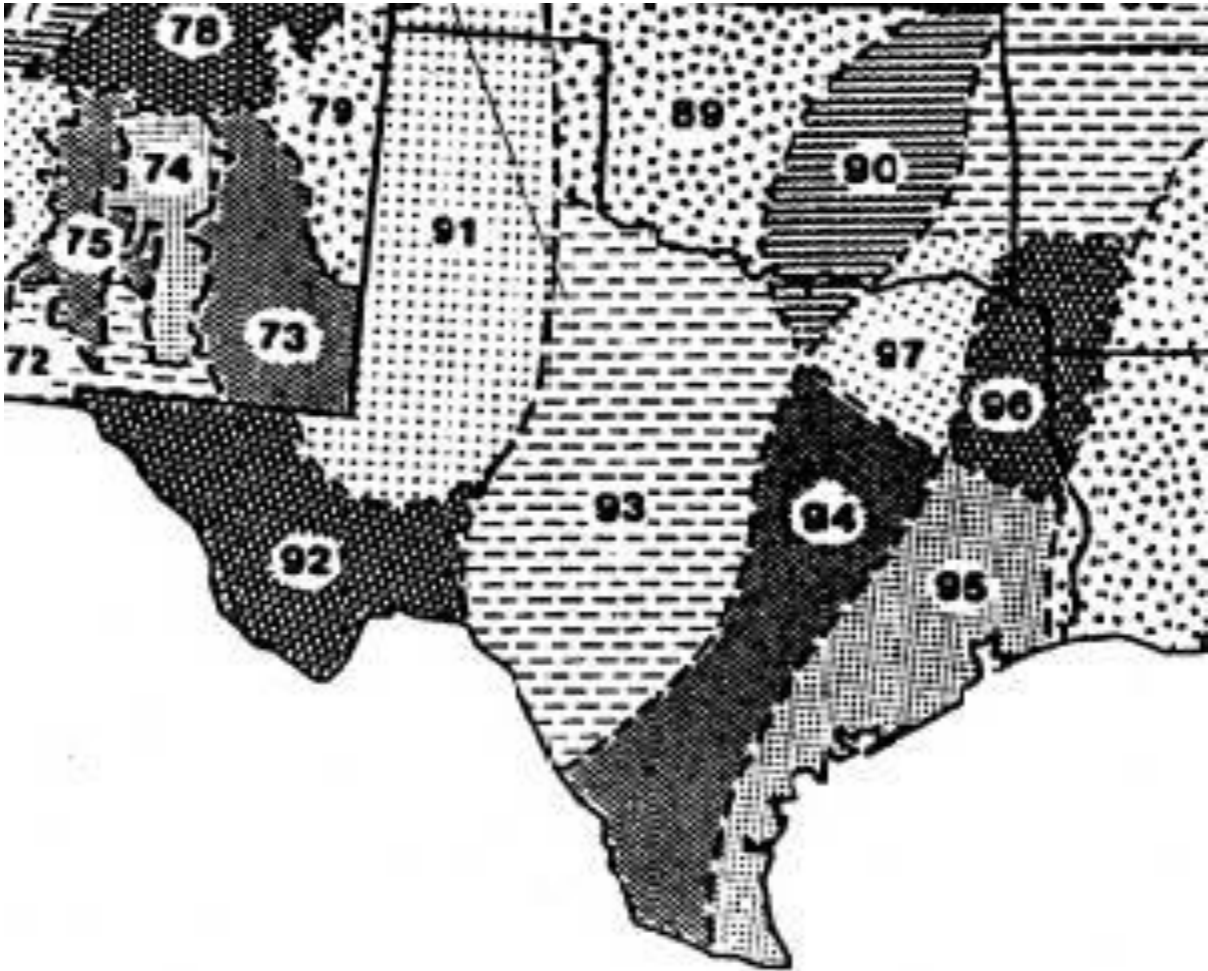


Figure B. EI Distribution Zones

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

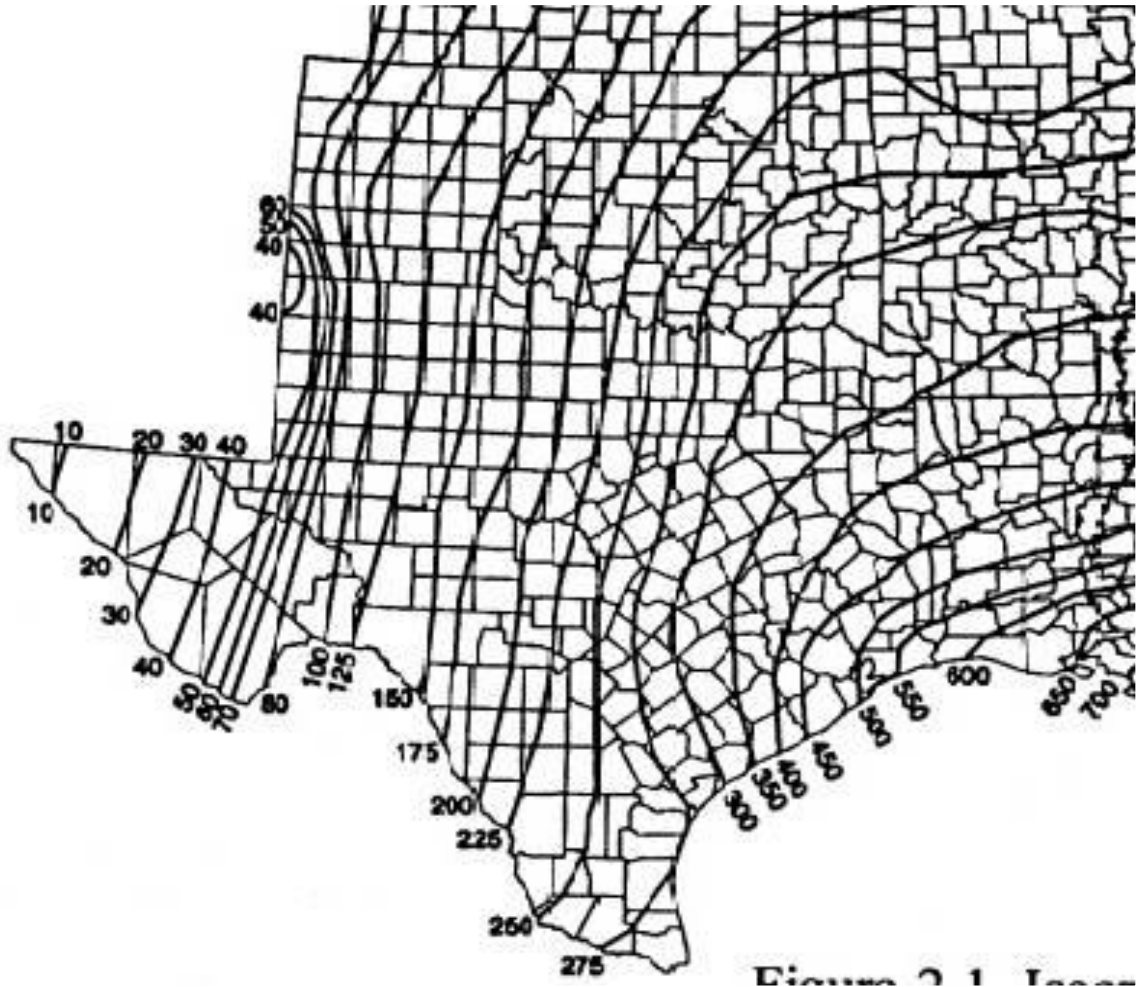


Figure C. Isoerodent Map of Texas. Units are hundreds $\text{ft} \cdot \text{tonf} \cdot \text{in} \cdot (\text{ac} \cdot \text{h} \cdot \text{yr})^{-1}$

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.

**SUBCHAPTER A: EDWARDS AQUIFER IN MEDINA, BEXAR, COMAL, KINNEY, UVALDE,
HAYS, TRAVIS, AND WILLIAMSON COUNTIES**

§§213.1 - 213.14

Effective April 24, 2008

§213.1. Purpose.

The purpose of this chapter is to regulate activities having the potential for polluting the Edwards Aquifer and hydrologically connected surface streams in order to protect existing and potential uses of groundwater and maintain Texas Surface Water Quality Standards. The activities addressed are those that pose a threat to water quality.

(1) Consistent with Texas Water Code, §26.401, the goal of this chapter is that the existing quality of groundwater not be degraded, consistent with the protection of public health and welfare, the propagation and protection of terrestrial and aquatic life, the protection of the environment, the operation of existing industries, and the maintenance and enhancement of the long-term economic health of the state.

(2) Nothing in this chapter is intended to restrict the powers of the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. In addition to the rules of the commission, an applicant may also be required to comply with local ordinances and regulations providing for the protection of water quality.

(3) The executive director shall review and act on an application subject to this chapter. The applicant or a person affected may file with the chief clerk a motion to overturn, under §50.139(a), (b), and (d) - (g) of this title (relating to Motion to Overturn Executive Director's Decision), of the executive director's final action on an Edwards Aquifer protection plan, modification to a plan, or exception.

Adopted August 10, 2005

Effective September 1, 2005

§213.2. Applicability and Person or Entity Required to Apply.

These rules specifically apply to the Edwards Aquifer and are not intended to be applied to any other aquifers in the state of Texas. Unless otherwise provided under this chapter, the owner of an existing or proposed site, such as a residential or commercial development, sewage collection system, or aboveground or underground storage tank facility for static hydrocarbons or hazardous substances, who proposes new or additional regulated activities under this chapter, must file and receive executive director approval of all appropriate applications prior to commencement of construction of new or additional regulated activities.

Adopted December 4, 1996

Effective December 27, 1996

§213.3. Definitions.

The following words and terms, when used in this chapter, have the following meanings.

(1) **Abandoned well** - A well that has not been used for six consecutive months. A well is considered to be in use in the following cases:

(A) a non-deteriorated well that contains the casing, pump, and pump column in good condition; or

(B) a non-deteriorated well that has been properly capped.

(2) **Aboveground storage tank facility** - The site, tract, or other area where one or more aboveground storage tank systems are located, including all adjoining contiguous land and associated improvements.

(3) **Aboveground storage tank system** - A non-vehicular device (including any associated piping) that is made of nonearthen materials; located on or above the ground surface, or on or above the surface of the floor of a structure below ground, such as a mineworking, basement, or vault; and designed to contain an accumulation of static hydrocarbons or hazardous substances.

(4) **Appropriate regional office** - For regulated activities covered by this chapter and located in Hays, Travis, and Williamson Counties, the appropriate regional office is Region 11, located in Austin, Texas. For regulated activities covered by this chapter and located in Kinney, Uvalde, Medina, Bexar, and Comal Counties, the appropriate regional office is Region 13, located in San Antonio, Texas.

(5) **Best management practices (BMPs)** - A schedule of activities, prohibitions, practices, maintenance procedures, and other management practices to prevent or reduce the pollution of water in the state. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs are those measures that are reasonable and necessary to protect groundwater and surface water quality, as provided in technical guidance prepared by the executive director or other BMPs that are technically justified based upon studies and other information that are generally relied upon by professionals in the environmental protection field and are supported by existing or proposed performance monitoring studies, including, but not limited to, the United States Environmental Protection Agency, American Society of Civil Engineers, and Water Environment Research Foundation guidance.

(6) **Capped well** - A well that is closed or capped with a covering capable of preventing surface pollutants from entering the well. The cap must be able to sustain a weight of at least 400 pounds. The cap must not be easily removed by hand.

(7) **Commencement of construction** - The initial disturbance of soils associated with clearing, grading, or excavating activities or other construction or regulated activities.

(8) **Edwards Aquifer** - That portion of an arcuate belt of porous, waterbearing, predominantly carbonate rocks known as the Edwards (Balcones Fault Zone) Aquifer 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 Group, 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.

(9) **Edwards Aquifer protection plan** - A general term that includes a water pollution abatement plan, organized sewage collection system plan, underground storage tank facility plan, aboveground storage tank facility plan, or a modification or exception granted by the executive director.

(10) **Edwards Aquifer protection plan holder** - The person who is responsible for compliance with an approved water pollution abatement plan, organized sewage collection system plan, underground storage tank facility plan, aboveground storage tank facility plan, or a modification or exception granted by the executive director.

(11) **Concentrated animal feeding operation** - As defined in §321.32 of this title (relating to Definitions).

(12) **Geologic or manmade features** - Features including, but not limited to, closed depressions, sinkholes, caves, faults, fractures, bedding plane surfaces, interconnected vugs, reef deposits, wells, borings, and excavations.

(13) **Geologic assessment** - A report that is prepared by a geologist describing site-specific geology.

(14) **Geologist** - A Texas licensed professional geoscientist who has training and experience in groundwater hydrology and related fields that enable that individual to make sound professional judgments regarding the identification of sensitive features located in the recharge zone or transition zone.

(15) **Groundwater conservation district** - Any groundwater district created by the legislature or the commission subject to Texas Water Code, Chapter 36, to conserve, preserve, and protect the waters of a groundwater water reservoir.

(16) **Hazardous substance** - Any substance designated as such by the administrator of the United States Environmental Protection Agency under the Comprehensive Environmental Response, Compensation, and Liability Act; regulated in accordance with Federal Water Pollution Control Act, Chapter 311; or any solid waste, or other substance that is designated to be hazardous by the commission, in accordance with Texas Water Code, §26.263 or Texas Health and Safety Code, §361.003.

(17) **Impervious cover** - Impermeable surfaces, such as pavement or rooftops, that prevent the infiltration of water into the soil. Rainwater collection systems for domestic water supplies are not considered impervious cover.

(18) **Industrial wastewater discharge** - Any category of wastewater except:

(A) those that are primarily domestic in composition; or

(B) those emanating from feedlot/concentrated animal feeding operations.

(19) **Injection well** - An injection well as defined under Chapter 331 of this title (relating to Underground Injection Control).

(20) **Land application system** - A wastewater disposal system designed not to discharge wastewater into a surface drainage way.

(21) **Licensed professional geoscientist** - A geoscientist who maintains a current license through the Texas Board of Professional Geoscientists in accordance with its requirements for professional practice.

(22) **Organized sewage collection system** - Any public or private sewage system for the collection and conveyance of sewage to a treatment and disposal system that is regulated in accordance with rules of the commission and provisions of Texas Water Code, Chapter 26. A system may include lift stations, force mains, gravity lines, and any other appurtenance necessary for conveying wastewater from a generating facility to a treatment plant.

(23) **Permanent best management practices** - Best management practices used to prevent and control pollution from regulated activities after construction is complete.

(24) **Pollution** - The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any 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 of the public enjoyment of the waters for any lawful or reasonable purpose.

(25) **Private sewage facilities** - On-site sewage facilities as defined under Chapter 285 of this title (relating to On-Site Sewage Facilities).

(26) **Private service lateral** - A wastewater line extending from the building drain to an existing private or public sewage collection system or other place of disposal that provides service to one single-family residence or building, with the operation and maintenance as the sole responsibility of the tenant or owner of the building. A wastewater line extending from the convergence of private service laterals from more than one single-family residence or building is considered a sewage collection system.

(27) **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 agency's central office and in the appropriate regional office.

(28) **Regulated activity** -

(A) Any construction-related or post-construction activity on the recharge zone of the Edwards Aquifer having the potential for polluting the Edwards Aquifer and hydrologically connected surface streams. These activities include, but are not limited to:

(i) construction of buildings, utility stations, utility lines, roads, highways, or railroads;

(ii) clearing, excavation, or any other activities that alter or disturb the topographic, geologic, or existing recharge characteristics of a site;

(iii) any installation of aboveground or underground storage tank facilities on the recharge or transition zone of the Edwards Aquifer; or

(iv) any other activities that may pose a potential for contaminating the Edwards Aquifer and hydrologically connected surface streams.

(B) Regulated activity does not include:

(i) clearing of vegetation without soil disturbance;

(ii) agricultural activities, except feedlots/concentrated animal feeding operations that are regulated under Chapter 321 of this title (relating to Control of Certain Activities by Rule);

(iii) activities associated with the exploration, development, and production of oil, gas, or geothermal resources under the jurisdiction of the Railroad Commission of Texas;

(iv) routine maintenance of existing structures that does not involve additional site disturbance, such as, but not limited to:

(I) the resurfacing of existing paved roads, parking lots, sidewalks, or other development-related impervious surfaces; and

(II) the building of fences, or other similar activities in which:

(-a-) there is little or no potential for contaminating groundwater; or

(-b-) there is little or no change to the topographic, geologic, or existing sensitive features; or

(v) construction of single-family residences on lots that are larger than five acres, where no more than one single-family residence is located on each lot.

(29) **Sensitive feature** - A permeable geologic or manmade feature located on the recharge zone or transition zone where:

(A) a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer exists; and

(B) rapid infiltration to the subsurface may occur.

(30) **Sewage holding tank** - A tank or other containment structure used to receive and store sewage until its ultimate disposal in an approved treatment facility.

(31) **Site** - The entire area included within the legal boundaries of the property described in the application. Regulated activities on a site that is located partially on the recharge zone and transition zone, where the natural drainage in the transition zone flows back to the recharge zone, will be treated as if the entire site is located on the recharge zone.

(32) **Static hydrocarbon** - A hydrocarbon that is liquid at atmospheric pressure and 20 degrees centigrade.

(33) **Stub out** - A wye, tee, or other manufactured appurtenance placed in a sewage collection system providing a location for a future extension of the collection system.

(34) **Temporary best management practices** - Best management practices used to prevent and control pollution from regulated activities during construction.

(35) **Tertiary containment** - A containment method by which an additional wall or barrier is installed outside of the secondary storage vessel (e.g., tank or piping) or other secondary barrier in a manner designed to prevent a release from migrating beyond the tertiary wall or barrier before the release can be detected. Tertiary containment systems include, but are not limited to, impervious liners and vaults surrounding a secondary tank and/or piping system, or equivalent triple wall tank or piping system as approved by the executive director.

(36) **Transition zone** - That area where geologic formations crop out in proximity to and south and southeast of the recharge zone and where faults, fractures, and other geologic features present a possible avenue for recharge of surface water to the Edwards Aquifer, including portions of the Del Rio Clay, Buda Limestone, Eagle Ford Group, Austin Chalk, Pecan Gap Chalk, and Anacacho Limestone. The transition zone is identified as that area designated as such on official maps located in the agency's central office and in the appropriate regional office.

(37) **Underground storage tank facility** - The site, tract, or other defined area where one or more underground storage tank systems are located, including all contiguous land and associated improvements.

(38) **Underground storage tank system** - Any one or combination of underground tanks and any connecting underground pipes used to contain an accumulation of regulated substances, the

volume of which, including the volume of the connecting underground pipes, is 10% or more beneath the surface of the ground.

(39) **Well** - A bored, drilled, or driven shaft, or an artificial opening in the ground made by digging, jetting, or some other method, where the depth of the well is greater than its largest surface dimension. A well is not a surface pit, surface excavation, or natural depression.

Adopted August 10, 2005

Effective September 1, 2005

§213.4. Application Processing and Approval.

(a) Approval by the executive director.

(1) No person may commence the construction of any regulated activity until an Edwards Aquifer protection plan or modifications to the plan as required by §213.5 of this title (relating to Required Edwards Aquifer Protection Plans, Notification, and Exemptions) or exception under §213.9 of this title (relating to Exceptions) has been filed with the appropriate regional office, and the application has been reviewed and approved by the executive director.

(2) The appropriate regional office shall provide copies of applications to affected incorporated cities, groundwater conservation districts, and counties in which the proposed regulated activity will be located. These copies will be distributed within five days of the application being determined to be administratively complete. Any person may file comments within 30 days of the date the application is mailed to local governmental entities. The executive director shall review all comments that are timely filed.

(3) A complete application for approval, as described in this section, must be submitted with the appropriate fee as specified in §213.12 of this title (relating to Application Fees).

(4) Projects in progress when recharge and transition zone maps are revised.

(A) For areas designated as recharge zone or transition zone on official maps prior to the effective date of this paragraph, and for which this designation did not change, all Edwards Aquifer protection plans submitted to the executive director, on or after the effective date of this paragraph, will be reviewed under all the provisions of the subchapter in effect on the date the plan is submitted.

(B) For areas that were newly designated as recharge zone or transition zone on official maps on the effective date of this paragraph, regulated activities will be considered to have commenced construction and will be regulated under the provisions of this chapter that were in effect at the time the plan was approved by the executive director if, on the effective date, all federal, state, and local approvals or permits required to begin physical construction have been obtained, and if either on-site construction directly related to the development has begun or construction commences within six months of the effective date of this paragraph.

(C) Regulated activities in areas designated as transition zone on official maps prior to the effective date of this paragraph and designated as recharge zone on the effective date of this paragraph will be regulated as transition zone activities if, on the effective date, all federal, state, and local approvals or permits required to begin physical construction have been obtained, and if either on-site construction directly related to the development has begun or construction commences within six months of the effective date of this paragraph.

(D) The effective date of this paragraph is September 1, 2005.

(5) Assumption of program by local government.

(A) A local governmental entity may assume the rights, duties, and responsibilities to review and either approve or deny Edwards Aquifer protection plan applications within its boundaries and monitor and enforce compliance with plans if the local government obtains certification from the executive director.

(B) In order to obtain certification, the local government must demonstrate that:

(i) it has a water quality protection program equal to or more stringent than the rules contained in this chapter, including, but not limited to, a program that:

(I) regulates activities covered under this chapter; and

(II) has performance standards equal to or more protective of water quality;

(ii) it has adopted ordinances or has other enforceable means sufficient to enforce the program throughout the local governmental entity's jurisdiction; and

(iii) it has adequate resources to implement and enforce the program.

(C) Upon approval of a request for certification under this section, the executive director shall enter into an agreement with the local governmental entity to provide for the terms and conditions of program assumption, including executive director oversight. Nothing in a certification or agreement shall affect the commission's ability to enforce its water quality protection rules or applicable state law.

(D) An agreement under subparagraph (C) of this paragraph shall not provide for the payment of fees required by this chapter to the local entity, and shall not provide for partial assumption of the program unless expressly authorized by the commission. Fees shall be paid to the commission for continued proper oversight and enforcement.

(E) Certification shall be for a term not to exceed five years, subject to renewal.

(F) Upon written notice, certification may be revoked or suspended by the executive director if the local entity does not meet the terms and conditions of the agreement provided

under subparagraph (D) of this paragraph, or fails to meet the criteria for certification provided under subparagraph (B) of this paragraph.

(G) A decision by the executive director under this section is not subject to appeal to the commission.

(b) Contents of application.

(1) Forms provided by the executive director. Applications for approval filed under this chapter must be made on forms provided by or approved by the executive director. Each application for approval must, at a minimum, include the following:

(A) the name of the development, subdivision, or facility for which the application is submitted;

(B) a narrative description of the location of the project or facility for which the application is submitted, presenting sufficient detail and clarity so that the project site and its boundaries can be located during a field inspection;

(C) the name, address, and telephone number of the owner or any other person signing the application; and

(D) the information needed to determine the appropriate fee under §213.14 of this title (relating to Fee Schedule) for the following plan types:

(i) for water pollution abatement plans and modifications to plans, the total acreage of the site where regulated activities will occur;

(ii) for organized sewage collection system plans and modifications to plans, the total linear footage of all collection system lines; or

(iii) for static hydrocarbon and hazardous substance storage in underground or permanent aboveground storage tank facility plans, the total number of tanks or piping systems.

(2) Additional information. Each application must also include the following information, as applicable:

(A) for water pollution abatement plans, the information required under §213.5(b) of this title;

(B) for organized sewage collection system plans, the information required under §213.5(c) of this title;

(C) for static hydrocarbon and hazardous substance storage in underground storage tank systems, the information required under §213.5(d) of this title;

(D) for static hydrocarbon and hazardous substance storage in aboveground storage tank systems, the information required under §213.5(e) of this title; and

(E) any other pertinent information related to the application that the executive director may require.

(c) Application submittal.

(1) One original and one copy of the application must be submitted for the executive director's review and additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the proposed regulated activities will be located. The copies must be submitted to the appropriate regional office.

(2) Only owners, their authorized agent(s), or those persons having the right to possess and control the property that is the subject of the Edwards Aquifer protection plan may submit the plan for review and approval by the executive director.

(d) Signatories to applications.

(1) Required signature. All applications must be signed as follows.

(A) For a corporation, a principal executive officer (president, vice-president, or a duly authorized representative) must sign the application. A representative must submit written proof of the authorization.

(B) For a partnership, a general partner must sign the application.

(C) For a political entity such as a municipality, state, federal, or other public agency, either a principal executive officer or a duly authorized representative must sign the application. A representative must submit written proof of the authorization.

(D) For an individual or sole proprietorship, the individual or sole proprietor must sign the application.

(2) Proof of authorization to sign. The executive director requires written proof of authorization for any person signing an application.

(e) Executive director review. The executive director must complete the review of an application within 90 days after determining that it is administratively complete. The executive director must declare that the application is administratively complete or deficient within 30 days of receipt by the appropriate regional office. Grounds for a deficient application include, but are not limited to, failure to pay all applicable application fees.

(f) Additional provisions. As a condition of approval, the executive director may impose additional provisions deemed necessary to protect the Edwards Aquifer from pollution. The executive

director may conditionally approve an Edwards Aquifer protection plan or impose special conditions on the approval of a plan.

(g) Deed recordation.

(1) The applicant must record in the deed records of the county in which the property is located that the property is subject to an approved Edwards Aquifer protection plan within 30 days of receiving written approval of:

- (A) a water pollution abatement plan;
- (B) an aboveground storage tank plan;
- (C) an underground storage tank plan;
- (D) modifications to any of these plans for a proposed regulated activity; or
- (E) an exception.

(2) A description of the property boundaries that is covered by the Edwards Aquifer protection plan shall be recorded in the county deed records.

(3) Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit, to the appropriate regional office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record.

(4) The construction of a public street or highway is exempt from all deed recordation requirements.

(h) Term of approval. The executive director's approval of an Edwards Aquifer protection plan will expire two years after the date of initial issuance, unless prior to the expiration date, substantial construction related to the approved plan has commenced. For purposes of this subsection, substantial construction means more than 10% of total construction has commenced. If a written request for an extension is filed under the provisions of this subsection, the approved plan will continue in effect until the executive director makes a determination on the request for an extension.

(1) A written request for an extension must be received not earlier than 60 days prior to the expiration date of an approved Edwards Aquifer protection plan or a previously approved extension. Requests for extensions are subject to fees outlined in §213.13 of this title (relating to Fees Related to Requests For Extensions).

(2) An executive director's approved extension will expire six months after the original expiration date of the approved Edwards Aquifer protection plan or a previously approved extension unless prior to the expiration date, commencement of construction, repair, or replacement related to the approved plan has occurred.

(3) An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the appropriate regional office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

(4) Any requests for extensions received by the executive director after the expiration date of an approved Edwards Aquifer protection plan or a previously approved extension will not be accepted. A new application for the purposes of this chapter must be submitted to the appropriate regional office with the appropriate fees for the review and approval by the executive director.

(5) An extension will not be granted if the proposed regulated activity or approved plan for the regulated activity(ies) under this chapter has changed from the regulated activity(ies) approved by the executive director.

(i) Legal transfer of property. Upon legal transfer of property, sewage collection systems, force mains, lift stations, underground storage tank system, or aboveground storage tank system, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

(j) Modification of previously approved plans. The holder of any approved Edwards Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

(1) any physical or operational modification of any water pollution abatement structure(s), including, but not limited to, ponds, dams, berms, sewage treatment plants, and diversionary structures;

(2) any change in the nature or character of the regulated activity from that which was originally approved or a change that would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

(3) any development of land previously identified as undeveloped in the original water pollution abatement plan;

(4) any physical modification of the approved organized sewage collection system;

(5) any physical modification of the approved underground storage tank system; or

(6) any physical modification of the approved aboveground storage tank system.

(k) Compliance. The holder of the approved or conditionally approved Edwards Aquifer protection plan is responsible for compliance with this chapter and any special conditions of the approved

plan through all phases of plan implementation. Failure to comply with any condition of the executive director's approval is a violation of this chapter and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction.

Adopted August 10, 2005

Effective September 1, 2005

§213.5. Required Edwards Aquifer Protection Plans, Notification, and Exemptions.

(a) Required plans. A plan must be submitted for the following, as appropriate:

(1) a water pollution abatement plan under subsection (b) of this section to conduct regulated activities on the recharge zone not covered by subsections (c), (d), or (e) of this section;

(2) an organized sewage collection system plan under subsection (c) of this section for rehabilitation or construction related to existing or new organized sewage collection systems on the recharge zone;

(3) an underground storage tank facility plan for static hydrocarbon and hazardous substance storage under subsection (d) of this section for the construction or rehabilitation of an underground storage tank system; including tanks, piping, and related systems located on the recharge zone or transition zone; and

(4) an aboveground storage tank facility plan for static hydrocarbon and hazardous substance storage under subsection (e) of this section for the construction or rehabilitation of an aboveground storage tank system; including tanks, piping, and related systems, for the storage of hydrocarbon or hazardous substance located on the recharge zone or transition zone.

(b) Water pollution abatement plan. A water pollution abatement plan must contain the following information.

(1) Application. The information required under §213.4 of this title (relating to Application Processing and Approval) is part of the plan and must be filed with the executive director at the appropriate regional office.

(2) Site location.

(A) Location data and maps must include a legible road map with directions, including mileage, which would enable the executive director to locate the site for inspection.

(B) A general location map must include:

(i) the site location on a copy (or spliced composite of copies, if necessary) of an official recharge zone map(s) with quadrangle name(s) and recharge and transition zone boundaries clearly labeled; and

(ii) a drainage plan, shown on the recharge zone map, indicating all paths of drainage from the site.

(C) A site plan with a minimum scale of one inch to 400 feet must show:

(i) the 100-year floodplain boundaries (if applicable);

(ii) the layout of the development showing existing and finished contours as appropriate, but not greater than ten-foot contour intervals;

(iii) the location of all known wells (including, but not limited to, water wells, oil wells, and unplugged and abandoned wells);

(iv) the location of any sensitive feature on the site of the proposed regulated activity as identified in the geologic assessment under paragraph (3) of this subsection;

(v) the drainage patterns and approximate slopes anticipated after major grading activities;

(vi) areas of soil disturbance and areas which will not be disturbed;

(vii) locations of major structural and nonstructural controls identified in the technical report;

(viii) locations where stabilization practices are expected to occur;

(ix) surface waters (including wetlands); and

(x) locations where stormwater discharges to a surface water or a sensitive feature.

(3) Geologic assessment. For all regulated activities, the applicant must submit a geologic assessment report prepared by a geologist describing the site-specific geology. The report must identify all potential pathways for contaminant movement to the Edwards Aquifer. Single-family residential subdivisions constructed on less than ten acres are exempt from this requirement. The geologic assessment report must be signed, sealed, and dated by the geologist preparing the report.

(A) The geologic assessment must include a geologic map, at site-plan scale, illustrating:

(i) the outcrop of surface geologic units; and

(ii) all geologic and manmade features, specifically identifying:

(I) caves;

- (II) sinkholes;
- (III) faults;
- (IV) permeable fractures;
- (V) solution zones;
- (VI) surface streams; and
- (VII) other sensitive features.

(B) The geologic assessment must contain a stratigraphic column showing, at a minimum, formations, members, and thicknesses.

(C) The geologic assessment must contain a description and evaluation of all geologic and manmade features, on forms provided by, or approved by, the executive director. The assessment must determine which of these features are sensitive features. The assessment must include:

(i) the identification of each geologic or manmade feature, with a cross-reference to the site-plan map coordinates; and

(ii) the type of geologic or manmade feature including, but not limited to:

- (I) sinkholes;
- (II) caves;
- (III) faults;
- (IV) wells;
- (V) surface streams; or
- (VI) potentially permeable fractures and solution zones.

(D) The geologic assessment must contain a narrative assessment of site-specific geology. The assessment must detail the potential for fluid movement to the Edwards Aquifer and include a discussion of the stratigraphy, structure, and karstic characteristics of the site.

(E) The geologic assessment must contain a narrative description of soil units and a soil profile, including thickness and hydrologic characteristics.

(4) Technical report.

(A) The technical report must address the following issues.

(i) The report must describe the nature of the regulated activity (such as residential, commercial, industrial, or utility), including:

(I) the size of the site in acres;

(II) the projected population for the site;

(III) the amount and type of impervious cover expected after construction is complete, such as paved surface or roofing;

(IV) the amount of surface expected to be occupied by parking lots; and

(V) other factors that could affect surface water and groundwater quality.

(ii) The report must describe the volume and character of wastewater expected to be produced. Wastewater generated at a site should be characterized as either domestic or industrial, or if commingled, by approximate percentages of each type.

(iii) The report must describe the volume and character of stormwater runoff expected to occur. Estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover, as described in clause (i) of this subparagraph. An estimate of the runoff coefficient of the site for both the pre-construction and post-construction conditions should be included in the report.

(iv) The report must describe any activities or processes which may be a potential source of contamination.

(v) The report must describe the intended sequence of major activities which disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation).

(vi) The report must contain estimates of the total area of the site that is expected to be disturbed by excavation, grading, or other activities.

(vii) The report must contain the name of the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project.

(B) The technical report must describe the temporary best management practices (BMPs) and measures that will be used during and after construction. The technical report must clearly describe for each major activity identified in subparagraph (A)(v) of this paragraph appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

(i) BMPs and measures must prevent pollution of surface water, groundwater, or storm water that originates upgradient from the site and flows across the site as provided under this paragraph.

(ii) BMPs and measures must prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site as provided under this paragraph.

(iii) BMPs and measures must prevent pollutants from entering surface streams, sensitive features, or the aquifer as provided under this paragraph.

(iv) To the maximum extent practicable, BMPs and measures must maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

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

(II) A request to temporarily seal must include a justification as to why no reasonable and practicable alternative exists. The request will be evaluated by the executive director on a case-by-case basis.

(v) Temporary BMPs and measures must meet the requirements contained in subparagraph (D)(i) of this paragraph.

(vi) The report must include a plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit.

(vii) Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure must be prepared by or under the direct supervision of a Texas licensed professional engineer. All construction plans and design information must be signed, sealed, and dated by the Texas licensed professional engineer.

(viii) Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by, or prepared by, the executive director.

(ix) The construction-phase BMPs for erosion and sediment controls should be designed to retain sediment on site to the extent practicable.

(x) All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates a control has

been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

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

(xii) Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%.

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

(C) The technical report must describe the permanent BMPs and measures that will be used during and after construction is completed.

(i) BMPs and measures must prevent pollution of surface water, groundwater, or storm water that originates upgradient from the site and flows across the site.

(ii) BMPs and measures must prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated storm water runoff from the site.

(iii) BMPs and measures must prevent pollutants from entering surface streams, sensitive features, or the aquifer.

(iv) To the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

(I) The permanent sealing of, or diversion of, flow from a naturally occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure should be avoided.

(II) A request to seal a naturally occurring sensitive feature must include a justification as to why no reasonable and practicable alternative exists. The request will be evaluated by the executive director on a case-by-case basis.

(v) Permanent BMPs and measures must meet the requirements contained in subparagraph (D)(ii) of this paragraph.

(vi) Construction plans and design calculations for the proposed permanent BMPs and measures must be prepared by, or under the direct supervision of, a Texas licensed professional engineer. All construction plans and design information must be signed, sealed, and dated by the Texas licensed professional engineer.

(vii) The technical report must include a plan for the inspection of the permanent BMPs and measures and for their timely inspection, maintenance, repair, and, if necessary, retrofit. The plan must be prepared and certified by the engineer designing the permanent BMPs and measures. The plan must be signed by the owner or responsible party.

(viii) Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by, or prepared by, the executive director.

(I) When pilot-scale field testing of an innovative technology (including water quality monitoring) is required, only one pilot site will be approved.

(II) No additional approvals will be granted until the pilot study is complete and the applicant demonstrates adequate protection of the Edwards Aquifer.

(III) If the innovative technology demonstrates adequate protection of the Edwards Aquifer, additional units may be approved for use as permanent pollution abatement measures on the Edwards Aquifer recharge zone.

(IV) If the innovative technology demonstrates inadequate protection of the Edwards Aquifer, a retrofit of the pollution abatement measure may be required to achieve compliance with requirements under subparagraph (D) of this paragraph and no additional units will be approved for use on the Edwards Aquifer recharge zone.

(D) Requirements for BMPs and measures.

(i) Temporary BMPs.

(I) The technical report must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Stabilization practices may include, but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures.

(-a-) The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.

(-b-) Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures

do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

(II) The technical report must include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Structural practices may include, but are not limited to: silt fences, earth dikes, drainage swales, sediment traps, checks dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and sediment basins. Placement of structural practices in floodplains should be avoided to the degree attainable.

(-a-) For common drainage locations that serve an area with ten or more acres disturbed at one time, a sediment basin that provides storage for a calculated volume of runoff from a two-year, 24-hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location it is not necessary to include flows from off-site areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin.

(-b-) In determining whether installing a sediment basin is attainable, the applicant may consider factors such as site soils, slope, and available area on site. For drainage locations which serve ten or more disturbed acres at one time and where a sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. Where neither the sediment basin nor equivalent controls are attainable due to site limitations, 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. The executive director encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.

(-c-) For drainage locations serving less than ten acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a two-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided. The executive director encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.

(ii) Permanent BMPs and measures.

(I) BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction. These practices and measures must be designed, constructed, operated, and maintained to insure that 80% of the incremental

increase in the annual mass loading of total suspended solids from the site caused by the regulated activity is removed. These quantities must be calculated in accordance with technical guidance prepared or accepted by the executive director.

(II) Owners of permanent BMPs and measures must insure that the 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.

(III) 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 §213.4(g) of this title, may no longer apply and the property owner must notify the appropriate regional office of these changes.

(IV) 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 §213.4(g) of this title, may no longer apply and the property owner must notify the appropriate regional office of these changes.

(E) The technical report must describe 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. The measures should address the following:

- (i) increased stream flashing;
- (ii) the creation of stronger flows and in-stream velocities; or
- (iii) other in-stream effects caused by the regulated activity which increase erosion that results in water quality degradation.

(F) The technical report must describe the method of wastewater disposal from the site.

(i) If wastewater is to be disposed of by conveyance to a sewage treatment plant for treatment and disposal, the existing or proposed treatment facility must be identified.

(ii) If wastewater is to be disposed of by an on-site sewage facility, the application must include a written statement from the appropriate authorized agent, stating that the site is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified under Chapter 285 of this title (relating to On-Site Sewage Facilities), or identifying those areas that are not suitable.

(G) The technical report must describe the measures that will be used to contain any spill of hydrocarbons or hazardous substances such as on a roadway or from a pipeline or from temporary aboveground storage of 250 gallons or more.

(i) Temporary storage facilities are those used on site for less than one year.

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

(5) Responsibility for maintenance of permanent BMPs and measures after construction is complete.

(A) The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (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.

(B) 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.

(C) This paragraph applies to:

(i) multiple single-family residential developments, multi-family residential; and

(ii) non-residential developments such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

(c) Organized sewage collection systems.

(1) No person may commence rehabilitation or construction related to an existing or new organized sewage collection system on the recharge zone, until final design plans, specifications, and an engineering report, as specified in Chapter 317 of this title (relating to Design Criteria for Sewerage Systems) and appropriate special requirements of this section, have been filed with and approved by the executive director.

(2) General design of sewage collection systems. Design of new sewage collection systems on the recharge zone must comply with Chapter 317 of this title.

(3) Special requirements for sewage collection systems. In addition to the requirements in paragraph (2) of this subsection, sewage collection systems on the recharge zone must meet the following special requirements.

(A) Manhole rehabilitation or construction. All manholes rehabilitated or constructed after March 21, 1990, must be watertight, with watertight rings and covers and must be constructed and tested to meet the requirements of §317.2(c)(5)(H) of this title (relating to Sewage Collection System).

(B) Piping for gravity and pressurized collection systems. Compliance with the following is required, unless local regulations dictate more stringent standards:

(i) for gravity collection systems, all PVC pipe must have a Standard Dimension Ratio (SDR) of 35 or less and meet the requirements of §317.2(a) - (c)(4) of this title; and

(ii) for all pressurized sewer systems, all PVC pipe must have a minimum working pressure rating of 150 pounds per square inch and meet the requirements of §317.2(d)(2) - (4) and §317.3(d)(5) - (7) of this title (relating to Sewage Collection System and Lift Stations).

(C) Lift station design. Lift stations must be designed and constructed to ensure that bypassing of any sewage does not occur. All lift stations must be designed to meet the requirements of §317.2(d) and §317.3 of this title. A lift station application must include final construction plans and a design report prepared by or under the direct supervision of a Texas licensed professional engineer. All design information must be signed, sealed, and dated by a Texas licensed professional engineer.

(D) Certification of new sewage collection system lines by a Texas licensed professional engineer. Owners of sewage collection systems must insure that all new gravity sewer system lines having a diameter greater than or equal to six inches and all new force mains are tested for leakage following construction. Such lines must be certified by a Texas licensed professional engineer to meet the appropriate requirements of §317.2 of this title. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Following the completion of the new sewer lines and manholes, they must be tested every five years thereafter in accordance with subparagraph (E) of this paragraph.

(E) Testing of existing sewer lines. Owners of sewage collection systems must insure that all existing sewer lines having a diameter greater than or equal to six inches, including private service laterals, manholes, and connections, are tested to determine types and locations of structural damage and defects such as offsets, open joints, or cracked or crushed lines that would allow exfiltration to occur. Existing manholes and lift station wet wells must be tested using methods for new structures which are approved by the executive director.

(i) Testing of all sewage collection systems must be conducted every five years after being put into use. Any sewage collection system in place as of March 21, 1990 must

have commenced and completed the first round of five-year testing. Every five years, existing sewage collection systems must be tested to determine types and locations of structural damage and defects such as offsets, open joints, or cracked or crushed lines that would allow exfiltration to occur. These test results must be certified by a Texas licensed professional engineer. The test results must be retained by the plan holder for five years and made available to the executive director upon request. The use of one of the following methods will satisfy the requirements for the five-year testing of existing sewer lines.

(I) In-place deflection testing must meet the requirements of §317.2(a)(4)(C) of this title. No pipe shall exceed a deflection rate of 5.0%.

(II) Internal line inspections, using a color television camera to verify that the lines are free of structural damage such as offsets, open joints, or cracked or crushed lines, that would allow exfiltration to occur, are acceptable. The use of black and white television equipment may be used following demonstration to the executive director that an acceptable inspection can be performed as provided in subclause (IV) of this clause.

(III) In-line smoke testing is acceptable only for the testing of private service laterals.

(IV) Testing methods other than those listed in this subsection must be approved by the executive director prior to initiating the sewer line testing.

(ii) Except as otherwise provided in an enforcement order of the commission, as soon as possible, but at least within one year of detecting defects, repairs to the sewage collection system must be completed by the system's owner. However, all leakage must be immediately contained to prevent any discharge to water in the state or pollution of the Edwards Aquifer whether necessary repairs have been completed or not. Leakage is a violation of Texas Water Code, §26.121 and these rules are not intended to excuse such unlawful discharge of waste into or adjacent to water in the state. All repairs must be certified by a Texas licensed professional engineer. Repairs must be tested within 45 days of completion using the methods described in clause (i) of this subparagraph. Results must be submitted to the appropriate regional office within 30 days of testing.

(F) Blasting for sewer line excavation. Blasting for sewer line excavation must be done in accordance with appropriate criteria established by the National Fire Protection Association. Should such blasting result in damage to an existing or newly completed sewer line or any of its appurtenances, the owner of the sewer system and appurtenances must repair and retest the damaged sewer line and its appurtenances immediately. The use of sand for pipe embedment or backfill in blasted rock is prohibited.

(G) Sewer line stub outs. New collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the proposed extensions. All stub outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle in accordance with accepted plumbing techniques.

(i) Main line stub outs. Manholes must be placed at the end of all sewer lines that will be extended at a future date, as specified in §317.2(c)(5) of this title. If the main line is to be extended within one year, a variance to allow the use of a stub out until the line is extended will be considered on a case-by-case basis. At the time of original construction, new stub outs must be constructed sufficiently to extend beyond the end of the street pavement. Stub outs that were not anticipated at the time of original construction must enter the manhole using a bored or drilled hole. Chiseling or hammering to enter a manhole is prohibited.

(ii) Private service lateral stub outs. Such stub outs must be manufactured using wyes or tees that are compatible in size and material with both the sewer line and the extension. Private service lateral stub outs that were not anticipated at the time of original construction must be connected using a manufactured saddle in accordance with accepted plumbing techniques.

(H) Locating sewer lines within a five-year floodplain. Sewer lines may not be located within the five-year floodplain of a drainageway, unless an exemption is granted by the executive director. If the applicant demonstrates to the executive director that such location is unavoidable, and the area is subject to inundation and stream velocities which could cause erosion and scouring of backfill, the trench must be capped with concrete to prevent scouring of backfill, or the sewer lines must be encased in concrete. All concrete must have a minimum thickness of six inches.

(I) Inspection of private service lateral connections. After installing and prior to covering and connecting a private service lateral to an organized sewage collection system, a Texas licensed professional engineer, Texas registered sanitarian, or appropriate city inspector must inspect the private service lateral and the connection to the collection system and certify that construction conforms with the applicable provisions of this subsection and local plumbing codes. Private service laterals may only be connected to approved sewage collection systems.

(J) Embedment materials. Embedment materials must meet the specification for bedding contained in §317.2(a)(5) of this title.

(K) Sewer lines bridging caverns or other sensitive features. Sewer lines that bridge caverns or sensitive features must be constructed in a manner that will maintain the structural integrity of the line. When such geologic features are encountered during construction, the location and extent of those features must be assessed by a geologist and must be reported to the appropriate regional office in writing within two working days of discovery. Notification and inspection must comply with the requirements under subsection (f) of this section.

(L) Erosion and sedimentation control. A temporary erosion and sedimentation control plan must be included with all construction plans. All temporary erosion and sedimentation controls must be installed prior to construction, must be maintained during construction, and must be removed when sufficient vegetation is established to control the erosion and sedimentation and the construction area is stabilized.

(M) Alternative sewage collection systems. The executive director may approve an alternative procedure which is technically justified; signed, sealed, and dated by a Texas licensed

professional engineer indicating equivalent environmental protection; and which complies with the requirements of §317.2(d) of this title.

(N) Required corrective action. Notwithstanding compliance with the requirements of subparagraphs (A) - (M) of this paragraph, sewage collection systems must operate in a manner that will not cause pollution of the Edwards Aquifer. Any failure must be corrected in a manner satisfactory to the executive director.

(4) Contents of organized sewage collection system plan.

(A) Application. For organized sewage collection systems, the information required under §213.4 of this title must be filed with the executive director at the appropriate regional office.

(B) Narrative description of proposed organized sewage collection system. A narrative report must include, at a minimum, a geographic description and anticipated type of development within the sewage collection system service area.

(C) Geologic assessment. A geologic assessment, as described in subsection (b)(3) of this section, must be performed by a geologist along the path of the proposed sewer line(s), plus 50 feet on each side of the proposed sewer line(s). The geologic assessment report must be signed, sealed, and dated by the geologist preparing the report.

(D) Technical report. For an organized sewage collection system, a technical report must be submitted on forms provided by, or approved by, the executive director. The technical report must contain the information requested in the following subsections of this section: (b)(4)(A)(ii) and (iv), (B), (D)(i), (F)(i), and (G). A technical report for a water pollution abatement plan submitted under subsection (b) of this section satisfies this requirement, provided it properly addresses the proposed sewage collection system.

(E) Plans and specifications. Plans and specifications addressing all the requirements in paragraphs (2) and (3) of this subsection, must include at a minimum:

(i) a map showing the location of the organized sewage collection system layout in relation to recharge zone boundaries;

(ii) a map showing the location of the organized sewage collection system layout overlaid by topographic contour lines, using a contour interval of not greater than ten feet, and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way;

(iii) construction documents prepared by, or under the supervision of, a Texas licensed professional engineer, which have also been signed, sealed, and dated by that Texas licensed professional engineer, at a minimum, must include:

(I) plan and profile views of the collection system;

(II) construction details of collection system components;

(III) specifications for all collection system components; and

(IV) proposed pollution abatement measures for sensitive features identified along the path of the proposed sewer line.

(d) Static hydrocarbon and hazardous substance storage in underground storage tanks system.

(1) Standards for underground storage tank systems. New or replacement systems for the underground storage of static hydrocarbons or hazardous substances must be of double-walled or an equivalent method approved by the executive director. Methods for detecting leaks in the inside wall of a double-walled system must be included in the facility's design and construction. The leak detection system must provide continuous monitoring of the system and must be capable of immediately alerting the system's owner of possible leakages.

(A) Installation. All underground hydrocarbon and hazardous substance storage tank systems must be installed by a person possessing a valid certificate of registration in accordance with the requirements of Chapter 334, Subchapter I of this title (relating to Underground Storage Tank On-Site Supervisor Licensing and Contractor Registration).

(B) Siting. Any new underground hydrocarbon and hazardous substance storage tank system that does not incorporate a method for tertiary containment must be located a minimum horizontal distance of 150 feet from any domestic, industrial, or irrigation well, or other sensitive feature as determined under the geologic assessment at the time of construction or replacement under paragraph (2)(C) of this subsection or the tankhold inspection under subsection (f)(2)(B) of this section. This method of tertiary containment also applies to the placement of a tank system within 150 feet of a public water supply well without a sanitary control easement of 150 feet as defined in §290.41(c)(1)(F) of this title (relating to Water Sources).

(2) Contents of an underground storage tank facility plan. An underground storage tank facility plan must, at a minimum, contain the following information.

(A) Application. The information required under §213.4 of this title must be filed with the executive director at the appropriate regional office.

(B) Site location map. A site location map as specified in subsection (b)(2) of this section including a legible road map, a general location map, and a site plan, must be submitted as part of the plan.

(C) Geologic assessment. For all facilities located on either the recharge zone or transition zone, a geologic assessment prepared by a geologist, as described in subsection (b)(3) of this section, must be submitted for the site. The geologic assessment report must be signed, sealed, and dated by the geologist preparing the report.

(D) Technical report. For all facilities, located on either the recharge zone or transition zone, a technical report must be submitted on forms provided by, or approved by, the executive director. The technical report must contain the information requested in subsection (b)(4)(B) and (C) and (5) of this section. A technical report for a water pollution abatement plan submitted under subsection (b) of this section satisfies this requirement, provided it properly addresses the proposed underground storage tank facility.

(e) Static hydrocarbon and hazardous substance storage in an aboveground storage tank facility.

(1) Design standards. Systems used for the temporary and permanent aboveground storage of static hydrocarbon and hazardous substance must be constructed within controlled drainage areas that are sized to capture one and one-half (1-1/2) times the storage capacity of the system. The controlled drainage area must be constructed of, and in a material impervious to, the substance(s) being stored, and must direct spills to a convenient point for collections and recovery. Any spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

(2) Contents of an aboveground storage tank facility plan. A permanent aboveground storage tank facility plan must contain, at a minimum, the following information.

(A) Application. For an aboveground storage tank facility, the information required under §213.4 of this title must be filed with the executive director at the appropriate regional office.

(B) Site location map. A site location map as specified in subsection (b)(2) of this section, including a legible road map, a general location map, and a site plan, must be submitted as part of the plan for a permanent facility.

(C) Geologic assessment. For all facilities located on either the recharge zone or transition zone, a geologic assessment prepared by a geologist, as described in subsection (b)(3) of this section, must be submitted for the area containing the aboveground storage tank system. The geologic assessment report must be signed, sealed, and dated by the geologist preparing the report.

(D) Technical report. For all facilities located on either the recharge zone or transition zone, a technical report must be submitted on forms provided by, or approved by, the executive director. The technical report must contain the information requested in subsection (b)(4)(B) and (C) and (5) of this section. A technical report for a water pollution abatement plan submitted under subsection (b) of this section satisfies this requirement, provided it properly addresses the proposed aboveground storage tank facility.

(3) A description of measures that will be used to contain any spill of hydrocarbons or hazardous substances from temporary storage of 250 gallons or more must be included with the plan unless described under subsection (b)(4)(G) of this section. Any new temporary aboveground hydrocarbon and hazardous substance storage tank system must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

(4) Exemptions from this section.

(A) Equipment used to transmit electricity that utilizes oil for insulation or cooling purposes, including transformers and oil circuit breakers, are exempt from this subsection. Construction of supporting structures is a regulated activity for which a water pollution abatement plan under subsection (a)(1) of this section is required.

(B) Permanent storage facilities with a cumulative storage capacity of less than 500 gallons are exempt from this section.

(f) Notification and inspection.

(1) The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation. Notification must be given to the appropriate regional office no later than 48 hours prior to commencement of the regulated activity.

(A) Written notification must include:

- (i) the date on which the regulated activity will commence;
- (ii) the name of the approved plan for the regulated activity; and
- (iii) the name of the prime contractor and the name and telephone number of the contact person.

(B) The executive director will use the notification to determine if the applicant is eligible for an extension of an approved plan. Construction will not be considered to have commenced until written notification is received by the appropriate regional office.

(2) If any sensitive feature is discovered during construction, replacement, or rehabilitation, all regulated activities near the sensitive feature must be suspended immediately.

(A) The holder of an approved Edwards Aquifer protection plan must immediately notify the appropriate regional office of any sensitive features encountered during construction. This notice must be given before continuing construction.

(B) Regulated activities near the sensitive feature may not proceed until the executive director has reviewed a geologic assessment report prepared by a geologist that consists of information required under subsection (b)(3)(C) and (D) of this section for the sensitive feature and has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality. The geologic assessment report must be signed, sealed, and dated by the geologist preparing the report.

(C) The holder of an approved sewage collection system plan, must meet the following.

(i) Upon completion of any lift station excavation, a geologist must certify that the excavation has been inspected for the presence of sensitive features. The certification must be signed, sealed, and dated by the geologist preparing the certification. Certification that the excavation has been inspected must be submitted to the appropriate regional office.

(I) Further activities may not proceed until the executive director has reviewed and approved the methods proposed to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality from the lift station.

(II) Construction may continue if the geologist certifies that no sensitive feature or features were present.

(ii) The applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The plan must be certified by a Texas licensed professional engineer. These plans must be submitted to the appropriate regional office for review and approval.

(D) For an approved underground storage tank facility plan, a geologist must certify that a completed tankhold excavation has been inspected for the presence of sensitive features. The certification must be signed, sealed, and dated by the geologist preparing the certification.

(i) Certification that the tankhold excavation has been inspected must be submitted to the appropriate regional office.

(ii) If a sensitive feature is discovered, the applicant must propose methods to protect the feature and the Edwards Aquifer from potentially adverse impacts to water quality from the underground storage tank system. Installation activities may not proceed until the executive director has reviewed and approved the proposed methods. The protection methods must be consistent with subsection (d)(1)(B) of this section.

(iii) Construction may continue if the geologist certifies that no sensitive feature or features were present.

(3) The executive director must review methods or plans proposed to protect sensitive features and the Edwards Aquifer from potentially adverse impacts to water quality. This review will be completed within one week of receiving a method or plan. Regulated activities near the sensitive feature may not continue until the executive director has approved the proposed methods or plans.

(g) On-site sewerage systems. On-site sewerage systems located on the recharge zone are subject to §285.40 of this title (relating to OSSFs on the Recharge Zone of the Edwards Aquifer) and other applicable provisions contained in Chapter 285 of this title. Systems must be designed, installed, maintained, repaired, and replaced in accordance with Chapter 285 of this title.

(h) Exemption.

(1) Regulated activities exempt from the Edwards Aquifer protection plan application requirements under this section are:

(A) the installation of natural gas lines;

(B) the installation of telephone lines;

(C) the installation of electric lines;

(D) the installation of water lines;

(E) the installation of other utility lines which are not designed to carry and will not carry the following:

(i) pollutants;

(ii) storm water runoff;

(iii) sewage effluent; or

(iv) treated effluent from a wastewater treatment facility.

(2) An individual land owner who seeks to construct his/her own single-family residence or associated residential structures on the site is exempt from the Edwards Aquifer protection plan application requirements under this section, provided that he/she does not exceed 20% impervious cover on the site.

(3) Temporary erosion and sedimentation controls are required to be installed and maintained for exempted activities on the recharge zone.

(4) All temporary erosion and sedimentation controls:

(A) must meet the requirements contained in subsection (b)(4)(D)(i) of this section;

(B) must be installed prior to construction;

(C) must be maintained during construction; and

(D) may be removed only when vegetation is established and the construction area is stabilized.

(5) The executive director may monitor storm water discharges from these projects to evaluate the adequacy of the temporary erosion and sedimentation control measures. Additional protection will be required if the executive director determines that these controls are inadequate to protect water quality.

Adopted July 23, 2003

Effective September 1, 2003

§213.6. Wastewater Treatment and Disposal Systems.

(a) General.

(1) New industrial and municipal wastewater discharges into or adjacent to water in the state that would create additional pollutant loading are prohibited on the recharge zone.

(2) Increases in existing discharges into or adjacent to water in the state that would increase or add new pollutant loading are prohibited on the recharge zone.

(3) Existing permits may be renewed for the same discharge volumes and with the same conditions and authorizations specified in the permit. Permits will not be renewed if the facility becomes non-compliant, as defined in Chapter 70 of this title (relating to Enforcement).

(4) New land application wastewater treatment plants located on the recharge zone must be designed, constructed, and operated such that there are no bypasses of the treatment facilities or any discharges of untreated or partially treated wastewater.

(5) Design of wastewater treatment plants must be in accordance with Chapter 317 of this title (relating to Design Criteria for Sewerage Systems).

(b) Land application systems.

(1) Except for licensed private sewage facilities, land application systems that rely on percolation for wastewater disposal are prohibited on the recharge zone.

(2) Wastewater disposal systems for disposal of wastewater on the recharge zone utilizing land application methods, such as evaporation or irrigation, will be considered on a case-by-case basis. At a minimum, those systems must attain secondary treatment as defined in Chapter 309 of this title (relating to Effluent Limitations).

(3) Existing permits may be renewed for the same discharge volumes and with the same conditions and authorizations specified in the permit unless the facility becomes non-compliant, as defined in Chapter 70 of this title (relating to Enforcement).

(c) Discharge upstream from the recharge zone.

(1) All new or increased discharges of treated wastewater into or adjacent to water in the state, other than industrial wastewater discharges, within zero to five (0 to 5) miles upstream from the recharge zone, at a minimum, shall achieve the following level of effluent treatment:

(A) five milligrams per liter of carbonaceous biochemical oxygen demand, based on a 30-day average;

(B) five milligrams per liter of total suspended solids, based on a 30-day average;

(C) two milligrams per liter of ammonia nitrogen, based on a 30-day average;
and

(D) one milligram per liter of phosphorus, based on a 30-day average.

(2) All new or increased discharges into or adjacent to water in the state, other than industrial wastewater discharges, more than five miles but within ten miles upstream from the recharge zone and any other discharges that the agency determines may affect the Edwards Aquifer, at a minimum, must achieve the level of effluent treatment for 2N based on a 30-day average as set out in Table 1 of Chapter 309 of this title. More stringent treatment or more frequent monitoring may be required on a case-by-case basis.

(3) All discharges, other than industrial wastewater discharges, more than five (5) miles upstream from the recharge zone which enter the main stem or a tributary of Segment 1428 of the Colorado River, or Segment 1427, main stem Onion Creek, or a tributary of Onion Creek must comply with §311.43 of this title (relating to Effluent Requirements for All Tributaries of Segment 1428 of the Colorado River and Segment 1427, Onion Creek, and Its Tributaries, of the Colorado River Basin), and to §311.44 of this title (relating to Disinfection). More stringent treatment or more frequent monitoring may be required on a case-by-case basis.

(4) Any existing permitted industrial wastewater discharges within zero to ten (0 to 10) miles upstream of the recharge zone must, at all times, discharge effluent in accordance with permitted limits. Any application for new industrial wastewater discharge permits for facilities zero to ten (0 to 10) miles upstream of the recharge zone will be considered on a case-by-case basis, in accordance with appropriate discharge limits applicable to that industrial activity and with consideration of its proximity to the recharge zone.

Adopted September 23, 1998

Effective June 1, 1999

§213.7. Plugging of Abandoned Wells and Borings.

(a) All identified abandoned water wells, including injection, dewatering, and monitoring wells must be plugged pursuant to requirements of the Texas Department of Licensing and Regulation under 16 TAC Chapter 76 (relating to Licensing and Regulation of Water Well Drillers and Water Well Pump Installers) and all other locally applicable rules, as appropriate.

(b) Abandoned injection wells must be closed under the requirements of Chapter 331 of this title (relating to Underground Injection Control).

(c) All borings with depths greater than or equal to 20 feet must be plugged with a non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings less than 20 feet must be backfilled

with cuttings from the boring or gravel. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

Adopted September 23, 1998

Effective June 1, 1999

§213.8. Prohibited Activities.

(a) Recharge zone. The following activities are prohibited on the recharge zone:

(1) waste disposal wells regulated under Chapter 331 of this title (relating to Underground Injection Control);

(2) new feedlot/concentrated animal feeding operations regulated under Chapter 321 of this title (relating to Control of Certain Activities by Rule);

(3) land disposal of Class I wastes, as defined in §335.1 of this title (relating to Definitions);

(4) the use of a sewage holding tank as part of an organized sewage collection systems (lift stations approved by the executive director are not prohibited);

(5) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities); and

(6) new municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

(b) Transition zone. The following activities are prohibited on the transition zone:

(1) waste disposal wells regulated under Chapter 331 of this title;

(2) land disposal of Class I wastes, as defined in §335.1 of this title; and

(3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title.

(c) Additional prohibitions. For applications submitted on or after September 1, 2001, injection wells that transect or terminate in the Edwards Aquifer, as defined in §331.19 of this title (relating to Injection Into or Through the Edwards Aquifer), are prohibited except as provided by §331.19 of this title.

Adopted October 10, 2002

Effective November 3, 2002

§213.9. Exceptions.

(a) Granting of exceptions. Exceptions to any substantive provision of this chapter related to the protection of water quality may be granted by the executive director if the requestor can demonstrate equivalent water quality protection for the Edwards Aquifer. No exception will be granted for a prohibited activity. Prior approval under this section must be obtained from the executive director for the exception to be authorized.

(b) Procedure for requesting an exception. A person requesting an exception to the provisions of this chapter relating to the protection of water quality must file an original and three copies of a written request with the executive director at the appropriate regional office stating in detail:

- (1) the name, address, and telephone numbers of the requestor;
- (2) site and project name and location;
- (3) the nature of the exception requested;
- (4) the justification for granting the exception as described in subsection (a) of this section; and
- (5) any other pertinent information that the executive director requests.

(c) Fees related to requests for exceptions. A person submitting an application for an exception, as described in this section, must pay \$500 for each exception request. The fee is due and payable at the time the exception request is filed, and should be submitted as described in §213.12 of this title (relating to Application Fees). If the exception request fee is not submitted in the correct amount, the executive director is not required to consider the exception request until the correct fee is submitted.

Adopted April 2, 2008

Effective April 24, 2008

§213.10. Enforcement.

Liability for penalties may result and may subject a noncompliant person to enforcement proceedings initiated by the executive director if there is failure to comply with:

- (1) any provision of this chapter,
- (2) an approved or conditionally approved Edwards Aquifer protection plan, or
- (3) any applicable regulation or order of the commission issued pursuant to this chapter and in accordance with Chapter 26 and other relevant provisions of the Texas Water Code or Texas Health and Safety Code.

Adopted September 23, 1998

Effective June 1, 1999

§213.11. Groundwater Conservation Districts.

The commission recognizes the authorities, powers, and duties of special-purpose districts, created by the Texas Legislature or by the commission under Chapter 36 of the Texas Water Code, as groundwater conservation districts to conserve, prevent waste, and protect the quality of ground water. In order to foster cooperation with local governments, the commission encourages districts to assist it in the administration of this chapter by carrying out the following functions within the areal extent of their geographic jurisdiction which includes the recharge zone or transition zone:

- (1) cooperating with licensing authorities in carrying out the provisions of this chapter,
- (2) conducting such geologic investigations as are necessary to provide updated information to the executive director regarding the official maps of the recharge zone and transition zone,
- (3) monitoring the quality of water in the Edwards Aquifer, and
- (4) maintaining maps of regulated activities on the recharge or transition zone.

Adopted December 4, 1996

Effective December 27, 1996

§213.12. Application Fees.

The person submitting an application for approval or modification of any plan under this chapter must pay an application fee in the amount set forth in §213.14 of this title (relating to Fee Schedule). The fee is due and payable at the time the application is filed. The fee must be sent to the appropriate regional office or the cashier in the agency headquarters located in Austin, accompanied by an Edwards Aquifer Fee Application Form, provided by the executive director. Application fees must be paid by check or money order, payable to the "Texas Commission on Environmental Quality ." If the application fee is not submitted in the correct amount, the executive director is not required to consider the application until the correct fee is submitted.

Adopted August 10, 2005

Effective September 1, 2005

§213.13. Fees Related to Requests for Extensions.

The person submitting an application for an extension of an approval of any plan under this chapter must pay \$150 for each extension request. The fee is due and payable at the time the extension request is filed, and should be submitted as described in §213.12 of this title (relating to Application Fees). If the extension fee is not submitted in the correct amount, the executive director is not required to consider the extension request until the correct fee is submitted. The extension request must be submitted to the appropriate regional office and must include a copy of the Edwards Aquifer protection plan and approval letter that is the subject of the extension request.

Adopted April 2, 2008

Effective April 24, 2008

§213.14. Fee Schedule.

(a) **Water Pollution Abatement Plans.** For water pollution abatement plans and modifications to those plans, the application fee shall be based on the classification and total acreage of the site where regulated activities will occur as specified in Table 1 of this subsection.

Figure 30 TAC §213.14(a)

Table 1

CLASSIFICATION/NUMBER OF ACRES	FEE
One single-family residential dwelling on less than 5 acres	\$650
Multiple single-family residential dwellings and parks	
Less than 5 acres	\$1,500
5 acres to less than 10 acres	\$3,000
10 acres to less than 40 acres	\$4,000
40 acres to less than 100 acres	\$6,500
100 acres to less than 500 acres	\$8,000
500 acres or more	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	
Less than 1 acre	\$3,000
1 acre to less than 5 acres	\$4,000
5 acres to less than 10 acres	\$5,000
10 acres to less than 40 acres	\$6,500
40 acres to less than 100 acres	\$8,000
100 acres or more	\$10,000

(b) Organized sewage collection systems. For sewage collection system plans and modifications, the application fee shall be based on the total number of linear feet of all lines for which approval is sought. The fee shall be \$.50 per linear foot, with a minimum fee of \$650 and a maximum fee of \$6,500.

(c) Underground and aboveground storage tank facilities. For underground or permanent aboveground storage tank system facility plans and modifications, the application fee shall be based on the number of tanks or piping systems for which approval is sought. The fee shall be \$650 per tank or piping system, with a minimum fee of \$650 and a maximum fee of \$6,500.

Section 6: SWP3 Site Inspection and Maintenance

The following pages define:

1	Inspection Schedule
2	Inspection Format
3	Inspector Qualifications
4	Inspection Form
5	TXR150000 Inspection Requirements
6	Maintenance

TCEQ Signature Delegation – **See Section 1 of SWP3 Manual**

Inspection Schedule – **See Section 6 of SWP3 Manual**

2. Inspection Format

General: Site inspections will address the following
Is the CSN and NOI project contact information provided on site?
Is the SWP3 place of availability defined?
Have corrective actions been completed from last site inspection?
Is the SWP3 Site Map current and accurate?
Are new/additional structural controls needed?
Does the SWP3 need to be modified?
Are there signs of excess sediment and pollutants exiting the site?
Are hazardous materials being properly stored and enclosed?
Are there signs of leaks/spills in material handling areas?
Are there signs of loose/floatable trash/debris on the site?
Are trash containers being emptied when full?
Are concrete washout areas properly contained?
Inspect the following areas for excessive silt and structural effectiveness: <ul style="list-style-type: none"> • Perimeter silt fence and interior silt fence • Rock construction entrances • Inlet protectors for all storm drains • Rock filter dams • Grass buffer areas • On-site sedimentation basins • Drainage channels • Outfalls
Are there signs of tracking offsite (public roads) that need cleaning?
Are stockpiles being protected with silt fence and vegetation?
Are all offsite construction support areas properly protected?
Are disturbed areas where construction activity is finalized being stabilized?

1. INSPECTION SCHEDULE

Mark the inspection schedule that will be followed:

	SWPPP Site Inspections will be conducted every 2 weeks and within 24 hours of a half-inch or greater rain event.
	SWPPP Site Inspections will be conducted weekly (no rain-event inspections).
	SWPPP Site Inspections will be conducted weekly (plus rain-event inspections).



P.O. Box 867251 Plano, Texas

Ph 214-878-7392

3. SWP3 Inspector Qualifications:

Name	Sam Sclafani, Terradyne Group, Inspector
Phone	214-878-4650
A	Has working knowledge of TCEQ Permit Regulations
B	Familiar with SWPPP document & Erosion/Sediment Drawing for this project.
C	<p>Erosion control training seminars:</p> <ul style="list-style-type: none"> -City of Dallas August 24, 2006 -City of Plano September 21, 2006 -City of Plano September 26, 2006 -North Central Texas Council of Governments- SWPPP Course-10-3-06 -Terradyne Group Training February 19, 2007 -City of Dallas May 17, 2007 (TPDES General Construction Requirements) -City of Dallas June 21, 2007 (TDDDES Industrial Requirements) -City of Southlake March 19, 2009 (Erosion and Sediment Control) -City of McKinney April 29, 2010 (Storm Water Regulations) -City of Dallas January 26, 2011 (Stormwater 404 Permit) -City of Dallas March 23, 2011 (TPDES Construction Permit Requirements) -North Central Texas Council of Governments- SWPPP Course-01-27-15 -City of Ft Worth March 14, 2018 Construction Stormwater Permit -City of Dallas March 21, 2018 TPDES Construction Permit Requirements -City of Dallas June 20, 2018 TPDES Construction Permit Requirements -(CISEC) Certified Inspector of Sediment and Erosion Control 8/12- 8/13/2018 (9 PDHs) - City of Ft Worth September 10th, 2019 Construction Stormwater Permit
D	17 years field experience in erosion control installation & maintenance



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Ph 214-878-7392

SWP3 Inspector Qualifications:

Name	Scott Young, Terradyne Group, Inspector
Phone	469-438-4379
A	Has working knowledge of TCEQ Permit Regulations
B	Familiar with SWPPP document & Erosion/Sediment Drawing for this project.
C	<p><u>Erosion control training seminars:</u></p> <ul style="list-style-type: none"> --6 weeks of Terradyne Group Training 01/20/17 Terradyne Group Training -02/22/17 City Dallas TPDES Construction Requirements- 3 Hour Workshop -03/14/18 City of Ft Worth Construction Stormwater Permit Renewal -03/21/18 City of Dallas TPDES Construction Permit Requirements -08/16/18 North Central Texas Council of Governments- SWPPP Course - City of Ft Worth September 10th, 2019 Construction Stormwater Permit
D	5 Years field experience in erosion control installation & maintenance



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Ph 214-878-7392

SWP3 Inspector Qualifications:

Name	Hunter Talley, Terradyne Group Inspector
Phone	214-802-1321
A	Has working knowledge of the TPDES TXR150000 General Permit
B	Familiar with this projects construction site, the SWPPP document and the Civil Erosion/Sediment Drawing.
C	<p>Erosion control training seminars:</p> <ul style="list-style-type: none"> -Terradyne Group SWP3 Training May 15, 2008 -NCTCOG May 09, 2008 -8/12- 8/13/2018 (CISEC) Certified Inspector of Sediment and Erosion Control (9 PDHs)
D	15 years field experience in erosion control installation & maintenance



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Ph 214-878-7392

SWP3 Inspector Qualifications:

Name	Gary Talley, Terradyne Group, Inspector
Phone	214-878-7392
A	Has working knowledge of TCEQ Permit Regulations
B	Familiar with SWPPP document & Erosion/Sediment Drawing for this project.
C	<p><u>Erosion control training seminars:</u></p> <ul style="list-style-type: none"> -IECA November 22, 2002 -NCTCOG March 24, 2003 -Quoin March 17, 2004 -City of Plano June 18, 2004 -Centex October 27, 2004 -City of Plano September 21, 2006 -City of Plano September 26, 2006 -City of Dallas May 17, 2007 (TPDES General Construction Requirements) -City of Dallas June 21, 2007 (TDDES Industrial Requirements) -City of Southlake March 19, 2009 (Erosion and Sediment Control) -City of Waco April 29, 2010 (Storm Water Regulations) -City of Dallas January 26, 2011 (Stormwater 404 Permit) -City of Dallas March 23, 2011 (TPDES Construction Permit Requirements)
D	28 years field experience in erosion control installation & maintenance



P.O. Box 867251 Plano, Texas

Ph: 214-878-7392

SWP3 Inspector Qualifications:

Name	Quentin Hockaday
Phone	214-878-9068
A	Has working knowledge of the TPDES TXR150000 General Permit
B	Familiar with this projects construction site, the SWPPP document and the Civil Erosion/Sediment Drawing.
C	<p>Erosion control training:</p> <ul style="list-style-type: none"> -6 weeks of Terradyne Group Training -June 11, 2018 Terradyne Group Training -2020-2021 Stormwater Professionals Field Inspection Service -2018-2020 Storm-Tech Field Inspection Service -2017-2018 EcoServices Field Inspection Service
D	5 years field experience in erosion control installation & maintenance



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Ph: 214-878-7392

SWP3 Inspector Qualifications:

Name	Sean Neal
Phone	469-818-5854
A	Has working knowledge of the TPDES TXR150000 General Permit
B	Familiar with this project's construction site, the SWPPP document and the Civil Erosion/Sediment Drawing.
C	<p>Erosion control training seminars:</p> <ul style="list-style-type: none"> -6 weeks of Terradyne Group Training -06/26/19- TPDES Construction Permit Requirements -8/28/19- TPDES Construction Permit Requirements (City of Dallas) - 09/10/19- Construction Stormwater Permit (City of Fort Worth) -11/23/19- Toll Brothers University: Storm Water Field Personal Training
D	3 years field experience in erosion control installation & maintenance



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Ph 214-878-7392

SWP3 Inspector Qualifications:

Name	Darron Shannon, Terradyne Group Inspector
Phone	972-804-2290
A	Has working knowledge of the TPDES TXR150000 General Permit
B	Familiar with this projects construction site, the SWPPP document and the Civil Erosion/Sediment Drawing.
C	Erosion control training seminars: -6 weeks of Terradyne Group Training -1 Year of TxDot SWP3 Reporting & Compliance experience.
D	2 years field experience in erosion control installation & maintenance



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Ph 214-878-7392

SWP3 Inspector Qualifications:

Name	Kelly Collins, Terradyne Group Inspector
Phone	972-963-0205
A	Has working knowledge of the TPDES TXR150000 General Permit
B	Familiar with this projects construction site, the SWPPP document and the Civil Erosion/Sediment Drawing.
C	Erosion control training seminars: -6 weeks of Terradyne Group Training
D	1 year field experience in erosion control installation & maintenance

. SWP3 Inspector Qualifications:

Instructions: Complete for inspector of choice

Name	
Phone	

Inspector Qualifications	YES	NO
Inspector has reviewed and understands the TXR150000 Permit Regulations.		
Inspector is familiar with this construction site.		
Inspector is familiar with the SWP3for this site.		
Inspector has field experience in erosion control installation & maintenance.		
Has received the following Erosion Control Training: Date: _____ Name of Course: _____ Date: _____ Name of Course: _____ Date: _____ Name of Course: _____ Date: _____ Name of Course: _____		

3. SWP3 Inspector Qualifications:

Instructions: Complete for inspector of choice

Name	
Phone	

Inspector Qualifications	YES	NO
Inspector has reviewed and understands the TXR150000 Permit Regulations.		
Inspector is familiar with this construction site.		
Inspector is familiar with the SWP3 for this site.		
Inspector has field experience in erosion control installation & maintenance.		
Has received the following Erosion Control Training: Date: _____ Name of Course: _____ Date: _____ Name of Course: _____ Date: _____ Name of Course: _____ Date: _____ Name of Course: _____		

4. SWP3 SITE INSPECTION REPORT FORM


**INNOVATIVE
GROUP**

SWPPP Site Inspection Report

Site Name:		Inspector:	
Permit #:		Inspection Frequency:	
Date of Visit:		Last Rain Event	Last Precipitation 48h Forecast

Project Details

Project Name	
Location / Address	
MS4	
County	
Operator Name (Control over Daily Operations)	
Primary Site Contact (Decides Revisions & Corrective Actions)	
Primary Phone #	
Primary Email	
Type of Construction Activity	
Offsite Area Description	
Site Size (Acres)	
Sediment Basins or Ponds Present	<input type="checkbox"/> Yes <input type="checkbox"/> No
Adjacent Wetlands	<input type="checkbox"/> Yes <input type="checkbox"/> No

Inspection Details

Are the required SWPPP Permits posted on site?	<input type="checkbox"/> Yes <input type="checkbox"/> No
SWPPP Sign Location	
Is this a post rain event report?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the site accessible?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Current phase(s) of construction	<input type="checkbox"/> Excavation & Grading <input type="checkbox"/> Utilities <input type="checkbox"/> Paving <input type="checkbox"/> Building <input type="checkbox"/> Stabilization

Inspection Observations

A summary of the Inspector observations regarding BMPs & Corrective Action can be found in the following report sections:

1. "Action Items" below for the summary of all Corrective Action Required Observations.
2. "BMPs / Controls" section below for a record of inspector observations.

Does the Site Operators Qualify for Permit Termination?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the Inspector See Evidence of Corrective Action or other Erosion Control Improvements Performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Additional BMP Controls are Required?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Some BMP Controls are Inadequate as Designed and Need Improvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has Illicit Discharge of Sediment Past the Project Limits Occurred?	<input type="checkbox"/> Yes <input type="checkbox"/> No
BMP Controls Need Maintenance or Repairs?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Non-compliance incidences have been noted. All non-compliance issues should be resolved within 7 days or immediately if a rain event is imminent.	<input type="checkbox"/> Yes <input type="checkbox"/> No

Summary of Observed Corrective Action Required:	
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Action Items

#	Title	Inspector	Date	Priority	Location	Description	Status	Closer	Notes	Photos
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BMP / CONTROL OBSERVATIONS

Inspector's Observation Regarding: - Offsite Streets

	New BMP or Corrective Action Completed?
	Location
	Additional Comments

Inspector's Observation Regarding: - Construction Exit

	New BMP or Corrective Action Completed?
	Location
	Additional Comments

Inspector's Observation Regarding: - Silt Fence

	New BMP or Corrective Action Completed?
	Location
	Additional Comments

Inspector's Observation Regarding: - Erosion Mat

	New BMP or Corrective Action Completed?
	Location
	Additional Comments

Inspector's Observation Regarding: - Trash Containment

	New BMP or Corrective Action Completed?	
	Location	
	Additional Comments	

Inspector's Observation Regarding: - Portable Toilets

	New BMP or Corrective Action Completed?	
	Location	
	Additional Comments	

Certification Statement:

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

Electronic Signature

X

5. TXR150000 Inspections Requirements (See TPDES TXR150000 General Permit Part III.F.7)

Provide inspection of disturbed areas of the construction site that have not been finally stabilized, material storage areas that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system.

Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

Inspector Qualifications

Personnel conducting these inspections must be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWP3 for the site.

Inspection Schedule

Inspections must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

Alternative Schedule

As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, a schedule of inspections at least once every seven (7) calendar days may be chosen. If this alternative schedule is developed, then the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

Changing the Schedule

The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: The schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented in the SWP3.

Inspection Requirements for Linear Construction Projects

Representative inspections may be provided for projects that are long, narrow and linear such as utility line installation, pipeline construction, etc. Inspection personnel may have limited access to the construction areas. 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 construction areas. 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. Review TXR150000 Section III. 7.b. The above defined Alternative Schedule and Changing the Schedule defined above apply to linear projects as well.

Flooding Conditions

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

BMP Modifications or Adding New BMP's

This 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.

Inspection Reports

A report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit.

Report Signature

The report must be signed by the person and in the manner required by 30 TAC ' 305.128 (relating to Signatories to Reports). The SWP3 shall contain a signed statement by the Operator delegating authority to the following positions:

- Project construction manager or supervisor for revising and recording information in the SWP3 Logs and the SWP3 Site Map.
- Project construction supervisor; or a 3rd party inspector; for signing inspection reports.

Documenting Inspector Qualifications

The names and qualifications of personnel making the inspections for the permittee will be documented in the SWP3.

6. Maintenance (Review TXR150000 General Permit Part III.F.6)

Scheduling of Maintenance and Repairs

All protective measures must be maintained in effective operating condition.

1	<p>BMPs not operating effectively</p> <p>Upon determining that BMPs are not operating effectively, the permittee shall perform maintenance as necessary to maintain the continued effectiveness of storm water controls, and prior to the next rain event if feasible.</p> <p>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.</p> <p>Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.</p>
2	<p>Damaged Controls</p> <p>If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator must replace or modify the control as soon as practicable after making the discovery.</p>
3	<p>Sediment Removal</p> <p>Sediment must be removed from sediment traps and ponds no later than the time that design capacity has been reduced by 50%.</p> <p>For perimeter controls such as silt fences and rock berms, sediment deposits must be removed before it reaches 50% of the above-ground height.</p>
4	<p>Offsite Sediment Release</p> <p>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 must work with the owner or operator of the property to remove the sediment.</p>



Section 7: SWP3 Logs

Instructions:

*Complete logs throughout life of project.

*Keep this SWP3 record for 3 years after project completion.



Section 7: SWP3 Record Keeping Logs & SWP3 Site Map

Compliance requires that the SWP3 be implemented as outlined and that non-compliance incidences be corrected. This SWP3 can be modified as needed during the project to prevent the release of off-site pollutants. All activity concerning SWP3 implementation such as installation, correction, revisions should be recorded in the manual.

It is the Operator's SWP3 Site Designee's responsibility to provide for:

- Timely implementation of BMP practices.
- Initiate installation and repairs of erosion/sediment/pollution controls.
- Co-ordinate SWP3 Manual Record Keeping Documentation (between SWP3 Site Designee and any 3rd party SWP3 Site Inspectors).

Record Keeping Documentation consists of the following important elements:

- SWP3 Site Inspection Reports
- SWP3 Activity Logs
- SWP3 Site Drawing
- Records can be audited at any time by representatives from the MS4 (City), TCEQ or EPA.

SWP3 Site Inspection Reports:

Written site inspection reports must be performed that define if the site is in compliance or if 'incidences of non-compliance' exist which demand corrective action. Inspections can be performed by a qualified inspector such as a trained site supervisor or a trained 3rd party designee.

SWP3 Activity Logs:

Operator's SWP3 Site Designee should provide entries for the applicable records listed on the next page.

SWP3 Site Map:

Operator's SWP3 Site Designee (with assistance from any 3rd part SWP3 Site Inspector) should update the SWP3 Site Map to accurately reflect control devices presently on-site. Installation/removal dates should be noted as well as location of items such as fuel storage, chemical storage, concrete wash-out, etc.



SWP3 Activity Logs:

Operator's SWP3 Site Designee to provide entries for the following records:

Table	Note: Include all 'offsite' areas of disturbance
1	Identify Swp3 Site Designee
2	List of Allowable Non-Storm Water Discharges
3	Defining Offsite Support Areas
4	Identify Close Proximity To Surface Water Bodies
5	Identify Sedimentation Basins
6A	Concrete Truck Wash-out Activities
6B	Concrete Batch Plant Operations
7	Major Earth Disturbing Activities
8	Installation/Repair/Removal of Erosion/Sediment Control Devices
9	Street Cleaning, Trash Disposal, Toilet Servicing, Stored Fuel Containers
10	Chemical & Hazardous Materials Stored On-Site & Off-site
11	Record of Temporary / Permanent Ceasing of Construction Activities
12	Areas of Transferred Operator Responsibilities List
12B	Areas of Transferred Operator Responsibilities Letter
12C	Areas of Transferred Operator Responsibilities Maps
13	SWP3 Record of Revisions
14A	Sub-Contractor SWP3 Acknowledgement
14B	Sub-Contractor List
14C	Sub-Contractor Training
15	SWP3 Site Map
16	Identify Steep Slopes
17	Identify Topsoil Areas To Be Preserved
18	Identify BMP for Preventing Soil Compaction or Prepping Soil for Seeding
19	Final Site Stabilization
20	Observation and Evaluation of Dewatering Controls

SWPPP Record Keeping Log
Table 1: SWP3 Site Designee

Authoritative Operator representative for directing SWP3 activities and implementing the 'erosion and sediment control plan' will be:

Name: _____

Phone: _____

Email: _____

Note: Duties include:

- Instruct sub-contractor workers on SWP3 Compliance requirements.
- Instruct sub-contractor workers on proper solid waste handling procedures.
- Instruct sub-contractor workers on proper hazardous waste handling procedures.
- Instruct sub-contractor workers on proper spill reporting and cleanup procedures.
- Establish reporting procedures for problems identified by workers.

3rd party SWP3 Site Inspector (if applicable to this site):

Company Name: _____

Inspector Name: _____

Phone: _____

Email: _____

Inspector Qualification: See SWP3 Manual Section 6



SWPPP Record Keeping Log

Table 2: List of Allowable Non-Storm Water Discharges

List of Allowable Non-Storm Water Discharges

The following non-storm water discharges are also eligible for authorization under this general permit:

Note: SWP3 Site Designee to check items that will apply to this project site.

#	Description	Applies
1	Discharges from fire fighting activities (not to include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities)	
2	Uncontaminated fire hydrant flushings (excluding discharges of hyper-chlorinated water, unless the water is first de-chlorinated 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)	
3	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	
4	Uncontaminated water used to control dust	
5	Potable water sources including waterline flushings (excluding discharges of hyper-chlorinated water, unless the water is first de-chlorinated and discharges are not expected to adversely affect aquatic life)	
6	Uncontaminated air conditioning condensate	
7	Uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents	
8	Lawn watering and similar irrigation drainage, provided discharges comply with the permit	



SWPPP Record Keeping Log
Table 3: Offsite Support Areas

Discharges of Storm Water Associated with Construction Support Activities

Examples of construction support activities include, but are not limited to, concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas.

- Discharges of storm water runoff from construction support activities need BMP treatment and protection to minimize release of pollutants into offsite waterways.
- Implement BMP controls and site inspection to include appropriate controls and measures to reduce erosion and discharge of pollutants in storm water runoff from the construction support activities.

Instructions: Complete the following

1. Will this project have offsite support areas? Y/N	
2. Identify the location of offsite support area(s).	
3. Identify the type of offsite support activities.	

Note

1	Operator must include BMP and structural controls for all offsite areas.
2	Operator must include all offsite areas in the SWP3 Site Inspection Reporting.



SWPPP Record Keeping Log

Table 4: Identify Close Proximity to Surface Water Bodies

Identify if project or supporting activity sites are in close proximity to a surface water body and if natural buffer may be maintained or not.

If not feasible, document why not.

Area#	Location Of Water Body	State Y/N if Grass Buffer will be maintained & If not, why? Define BMP's in lieu of grass buffer



SWPPP Record Keeping Log

Table 5: Sedimentation Basins

Instructions: Complete the following

A	Sedimentation basins should be utilized, where feasible, for common drainage areas that serve an area with ten (10) of more acres disturbed at one time.
B	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.
C	When calculating volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and 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.
D	Capacity calculations shall be included in the SWP3.
E	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.

Instructions: Complete the following

1. Will sedimentation basins be provided for this site? Y / N	Y
2. Total number of basins to be provided.	1

Basin A

Basin B

1 Install Date		1 Install Date	
2 Temporary or permanent		2 Temporary or permanent	
3 Location		3 Location	
4 Acres drained		4 Acres drained	
5 Size LxWxH		5 Size LxWxH	
6 Volume Capacity-CY		6 Volume Capacity-CY	
7 Runoff volume; 2 year, 24 hour event		7 Runoff volume; 2 year, 24 hour event	

Basin size should be >3,600 cubic feet of storage per acre drained if Item 7 information not available.

State reason(s) why sediment basins are not feasible for this site.

	The Operator 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, etc.
1	
2	
3	

Define equivalent control measures that will be used in lieu of sediment basins

	May include a series of smaller sediment basins.
1	
2	
3	

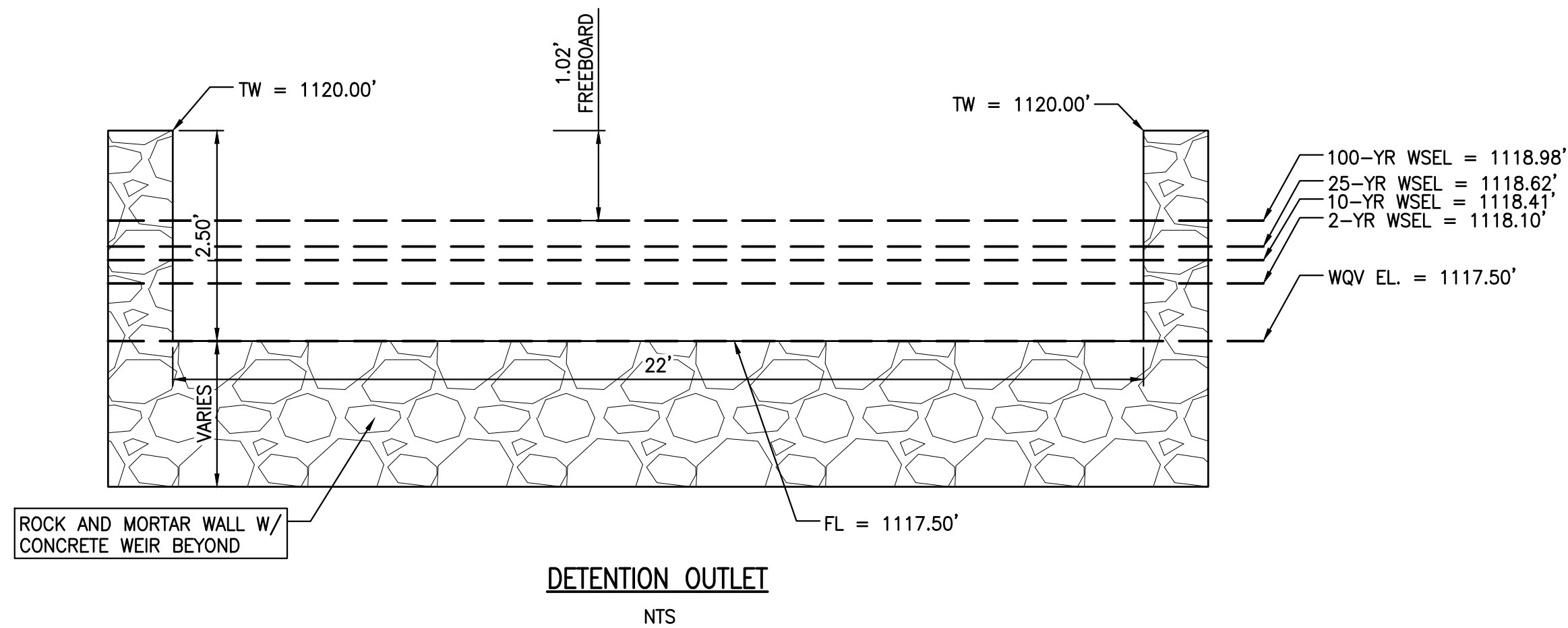


GENERAL NOTES

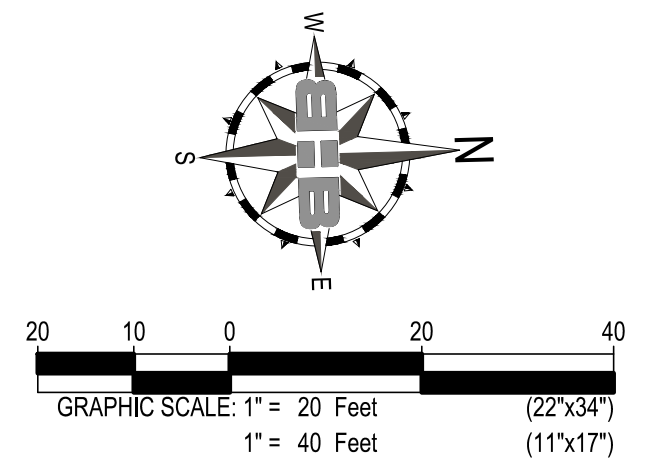
1. ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
3. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF WALL.
4. EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MUNICIPAL AND FRANCHISE UTILITY COMPANIES AND LOCATING ALL UTILITIES IN THE FIELD.
5. ALL LOT LINES BASED ON BEST AVAILABLE DATA. THE CONTRACTOR SHALL NOTIFY ENGINEER IN THE EVENT OF ANY DISCREPANCY THAT WOULD ALTER THE GRADING FLOW AS DESIGNED, OR ANY FEATURE THAT IMPACTS THE ABILITY TO CONSTRUCT THE DESIGN AS SHOWN ON THIS PLAN. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY WILLIAMSON COUNTY.
6. CONTRACTOR/OWNER SHALL COORDINATE WITH WILLIAMSON COUNTY TO OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.

CONSTRUCTION NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO WILLIAMSON COUNTY AND/OR THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WHICHEVER IS MORE RESTRICTIVE.
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE LOCATION.
3. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
4. CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.



NOTE: SEE DETENTION DETAILS FOR CONCRETE WEIR AND SMARTPOND VALVE DETAILS.



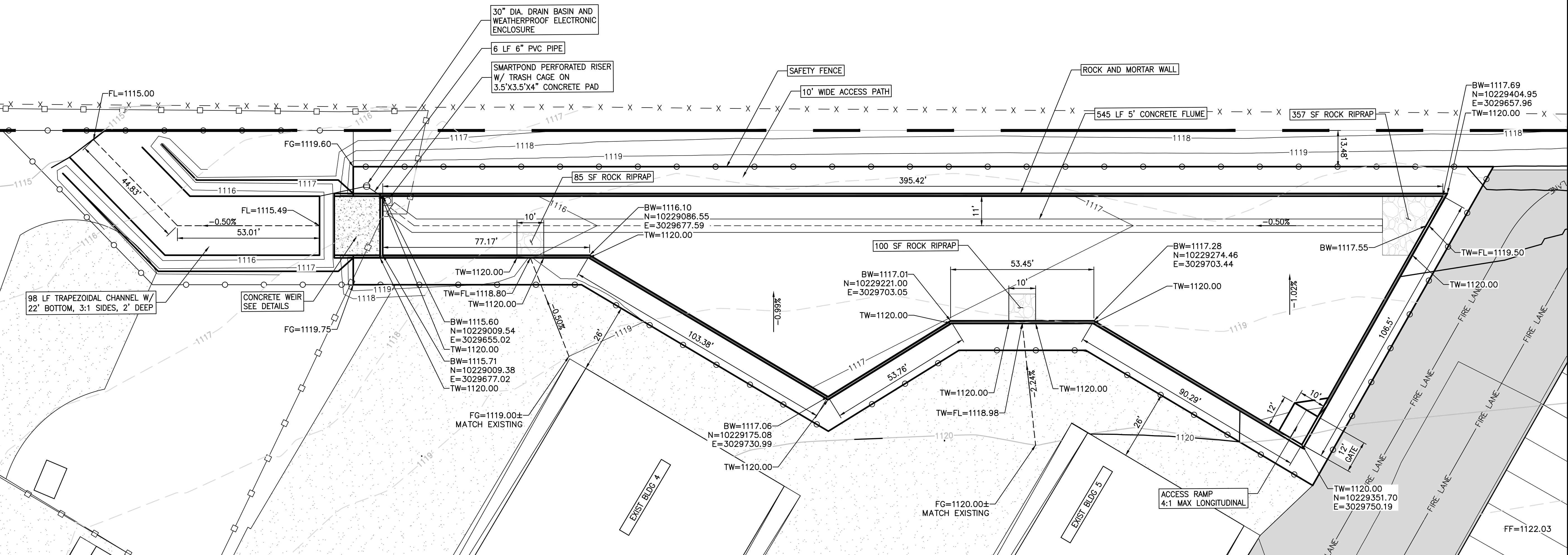
LEGEND

PROPERTY LINE	---
EXISTING MAJOR CONTOUR	---1100---
EXISTING MINOR CONTOUR	---1101---
EXISTING GRAVEL	[Pattern]
PROPOSED ASPHALT	[Pattern]
PROPOSED DETENTION POND	[Pattern]
PROPOSED ROCK RIPRAP	[Pattern]
PROPOSED CONCRETE WEIR	[Pattern]
PROPOSED FIRE LANE	— FIRE LANE —
PROPOSED SAFETY FENCE	—○—

B B
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 mail@bhinc.com • 817.338.1277 • bhinc.com
 TEPF Firm #44, #1001300, 1001302, #10194146

A-AFFORDABLE BOAT & RV STORAGE
 WILLIAMSON COUNTY, TX

3/20/2023 2:43PM E:\2022\000\000\2022_163_000 - Liberty Hill Storage\01 Design & Drafting\02 Civil\01 CSD\163 Detention Plan.dwg BATCH DETENTION POND PLAN



BATCH DETENTION POND PLAN

1	FIRE MARSHAL REVIEW COMMENTS 3/6/23	03/20/2023	DATE
NO.	DESCRIPTION		

STATE OF TEXAS
 CHAD A. WALLACE
 LICENSED PROFESSIONAL ENGINEER
 127255
 3/20/2023

PROJECT NUMBER: 2022.163.000
 DATE: 3/20/2023 DRAWN BY: CEK
 DESIGN BY: CW CHECKED BY: CW
 SHEET
C6.2

SWPPP Record Keeping Log

Table 6A: Concrete Wash-Out Activities

Instructions: Complete the following

Concrete Truck Wash Out:

Y/N

A	Will concrete trucks deliver on-site?	
B	Will there be an on-site concrete batch plant?	
C	Will there be an on-site asphalt batch plant?	
D	Will there be on-site concrete/mortar mixing and washout?	
E	Will Operator provide designated on-site Wash-Out Area(s)?	
F	Will wash-out occur off-site? Insert a location map in the SWP3 Record.	

Authorization is limited to the land disposal of wash out water from concrete trucks that are associated with off-site production facilities. Wash out water associated with on-site concrete production facilities must be authorized under a separate TCEQ general permit or individual permit. This does not include any waste-water from batch plant activities. Strict compliance with TPDES TXR150000 General Permit Part IV s required. If the Operator (s) defined in this SWP3 do not want to authorize batch plant activity under their permit then the batch plant operators should be advised to obtain authorization under an alternate permit and SWP3.

Policy/Practice: Implement the following policy

1	Do not wash-out directly into surface water in the state (ie. creeks, rivers, ponds, lakes)
2	Do not wash-out directly into offsite open drainage paths
3	Do not wash-out directly into open storm drains (curb drains, grates, Y inlets, etc.)
4	Minimize wash-out during rain events
5	Construct and designate a concrete/mortar/paint wash-out basin with containment features such as liner, silt fence, dirt berm to prevent flow of pollutant materials or provide a filter area for washout water such as grass filter buffer, gravel, rock, sediment traps/basins, etc. Refer to SWP3 Manual Section 4 Item 19.
6	Indicate location(s) of all designated wash-out areas on the SWP3 Site Map
7	Provide signage "Concrete Wash-Out" at approved locations.
8	Provide continual training of this policy with all employees and sub-contractors.
9	Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site. The project may choose to use a commercial wash out box or build an appropriate containment structure (either raised above ground or excavated pit) that uses a liner or protection from liquids seeping into the surrounding soil.
10	The discharge of wash out water shall not cause or contribute to groundwater contamination.



SWPPP Record Keeping Log
Table 6B: Concrete Batch Plant Operations

Instructions: Complete the following

Mark the appropriate box

On-site concrete batch plant operations will not be in operations on this site.	
On-site concrete batch plant operations will be in operations on this site.	

If a concrete batch plant will be in operation, mark the applicable box:

Operator will allow the activities of the “concrete batch plant” to be covered under the storm water permit for this site SWP3. Operator will advise in writing to the ‘concrete batch plant operator’ that strict compliance is required in their meeting all the requirements defined in the TPDES TXR150000 general permit Part IV.	
Operator will advise the ‘batch plant operator’ to obtain a separate storm water discharge permit and implement a separate SWP3 for their activities on the construction site.	

Summary of TCEQ TXR150000 Part IV: Storm Water Runoff from Concrete Batch Plants

Discharges of storm water runoff from concrete batch plants at regulated construction sites may be authorized under the provisions of this general permit provided that the following requirements are met for concrete batch plant(s) authorized under this permit. If discharges of storm water runoff from concrete batch plants are not covered under this general permit, then discharges must be authorized under an alternative general permit or individual permit.

This permit does not authorize the discharge or land disposal of any ‘wastewater’ from concrete batch plants at regulated construction sites.

Authorization for these ‘wastes’ must be obtained under an individual permit or an alternative general permit.



SWPPP Record Keeping Log
Table 7: Major Earth Disturbing Activities

Construction Phases	Start Date	Stop Date
Demolition		
Tree and shrub removal		
Clearing/ Grubbing		
Grading		
Excavation		
Off-site stockpile/borrow area		
Staging area for materials or equipment		
Grading Detention Pond or Sedimentation Traps, Basins		
Underground Utilities- Storm Water, Sewer, Water		
Paving / Street Construction		
Final Grading		
Franchise Utilities		
Site Cleanup		
Final Site Stabilization		



SWPPP Record Keeping Log

Table 8: Installation/Repair/ Removal of Erosion/Sediment Control Devices

Record date and description of the installation/repair/removal of on-site and off-site controls. Place corresponding notes on SWP3 Site Map.

Description	Install Date	Removal Date
Initial perimeter silt-fence		
Inlet protection on pre-existing storm drains		
Sediment traps, basins, ponds		
Construction entry pad		
Silt-fence cross-checks in drainage paths		
Rock filter dams		
Directional dirt berms		
Inlet protection on new storm drains		
Redress entry pads		
Erosion mat on slopes		
Erosion mat behind curb		
Silt fence behind curb		
Seed disturbed areas		

Typical Erosion/Sediment Control BMP & Devices

Silt-fence site perimeter, behind curb, ramps	Inlet protectors for storm drains
Silt fence checks across swales, bar ditches	Concrete washout (designated area)
Trash containment	Erosion mat behind curb or on slopes
Sedimentation traps, basins, detention ponds	Hay Bales
Rock Filter Dams or stone overflows	Seed or sod open disturbed ground
Construction entrance	Trash containment
Inlet protection for existing storm drains	Outfall protection
Maintain grass buffer areas	Seed disturbed areas

Typical Repair/ Maintenance/ Removal Items

Silt fence repair	Remove silt fence
Clean silt from fence, rock dams & streets	Remove storm drain inlet protection
Redressing construction entrance rock	Clean/repair storm drain inlet-protection



SWPPP Record Keeping Log

Table 9: Street Cleaning, Trash Disposal, Toilet Servicing, Stored Fuel Containers

Street Cleaning	Dates of Service

Trash Container disposal service	Dates of Service

Porta-Toilet Cleaning Service	Dates of Service

On-site Fuel Storage and Re-fueling	Dates of Service



The following list suggested sources for potential pollutants to assist in completing Table 10

Description of Potential Pollutant Sources				
List all of the materials, i.e. supplies, chemicals and wastes, to be stored for this project and where will be stored. How will the project keep these from being a storm water pollutant?				
V	Name of Material	General Quantity	Container Type	Stored under cover: Yes or No
<input type="checkbox"/>	Concrete Sealant			
<input type="checkbox"/>	Curing Compound			
<input type="checkbox"/>	Dry Concrete Mix/Cement			
<input type="checkbox"/>	Concrete Saw Cutting Slurry			
<input type="checkbox"/>	Admixes for Concrete			
<input type="checkbox"/>	Select Fill Material (soil)			
<input type="checkbox"/>	Gravel, Pea Gravel (washed)			
<input type="checkbox"/>	Base, unwashed gravel			
<input type="checkbox"/>	Concrete rubble/debris (dry)			
<input type="checkbox"/>	Sweeper Waste Liquids			
<input type="checkbox"/>	Concrete Washout/Rinse			
<input type="checkbox"/>	Grout Mix			
<input type="checkbox"/>	Lime			
<input type="checkbox"/>	Chemical Soil Stabilizers			
<input type="checkbox"/>	Adhesives, Caulks, Mastics			
<input type="checkbox"/>	Form Release Oil			
<input type="checkbox"/>	Epoxy Resin Part A&B			
<input type="checkbox"/>	Paint/Lacquer/Varnish			
<input type="checkbox"/>	Paint Remover/Thinner			
<input type="checkbox"/>	PVC Pipe			
<input type="checkbox"/>	PVC Cement or Primer			
<input type="checkbox"/>	Metal Pipe			
<input type="checkbox"/>	Rebar, I-beam, Studs (metal)			
<input type="checkbox"/>	Chill System Additives			
<input type="checkbox"/>	Glycol			
<input type="checkbox"/>	Insulation or Fiberglass			
<input type="checkbox"/>	Sheetrock and Paneling			
<input type="checkbox"/>	Joint Compound/Texture			
<input type="checkbox"/>	Tile, Glass or Mirror			
<input type="checkbox"/>	Block or Brick			
<input type="checkbox"/>	Herbicides, Pesticides			
<input type="checkbox"/>	Fertilizer			
<input type="checkbox"/>	Impacted Soils (spills, leaks)			
<input type="checkbox"/>	Fuel (tanks 55 gal or more)			
<input type="checkbox"/>	Fuel (in small cans)			
<input type="checkbox"/>	Engine Oil (new or used)			
<input type="checkbox"/>	Hydraulic Fluid			
Add Others Not Already Listed Here (Add to list as project progresses and new items identified)				



SWPPP Record Keeping Log

Table 11: Temporary/Permanent Ceasing of Construction Activities

Activity Area	Date Ceased	Temp or Perm	Date of Stabilization	Date Resumed

Identify Stabilization Practices:

- Identify stabilization practice(s) where construction activity is anticipated to cease for over 14 days.
- Initiate soil stabilization “immediately” (defined as within 24 hours).
- Describe the types of stabilization to be utilized.

Area#	Location	Define stabilization method or reason stabilization cannot occur. ie. seed and seed rates, erosion mat, hydro-mulch).



Table 12B: Record of Transferred Responsibilities Notification Letter

ADD: OPERATOR LETTERHEAD

RE: Revision to SWPPP and notification of 'Transfer of Operator Responsibilities'.

This letter serves as written revision & notification that SWP3 Operational Responsibilities are transferred to the new Operator defined below for the listed areas of the permitted site (as identified by Lot or Address).

Current Operator

Name	
Address	
Contact	
Phone / Email	
TCEQ Permit Number	

New Operator

Name	
Address	
Contact	
Phone / Email	
TCEQ Permit Number	

The new Operator is required to provide the following for the 'transferred areas':

#	Responsibility	Applies
	This a Large Site designation (>5 ac or Common Plan > 5 ac)	
1	Large sites submit NOI application and payment to the TCEQ office to obtain permit#	
2	Complete the required TCEQ CSN (Construction Site Notice)	
3	Send copy of CSN Form and NOI (if applies) to all MS4's receiving storm water runoff	
4	Post a copy of the CSN at a location viewable by the general public	
5	Develop, certify and implement a SWP3 compliant with any applicable local sedimentation and erosion control plans and compliant with the conditions and requirements of the TCEQ general permit TXR150000.	
6	Delegate authority to position or person who can sign SWP3 Records & Inspections	
7	Provide BMP's and install all necessary erosion/sediment/pollution controls	
8	Provide written scheduled inspection reports	
9	Provide corrective action within 7 days of inspection and identification of non-compliance issues.	
10	Provide additional BMP and controls where current controls are proven to be inadequate in controlling offsite pollution discharges.	
11	Document necessary SWP3 revisions throughout the project activity	
12	Provide: a) record keeping logs and b) site map drawing revisions	
13	Remove all temporary BMP and controls after final site stabilization achieved	
14	Transfer or terminate permit responsibilities when site is stabilized	



Table 12C: Record of Transferred Responsibilities Notification Map

Transferred Area MAP(s)

Insert Maps of all transferred areas



SWPPP Record Keeping Log

Table 14A: Sub-Contractor SWP3 Acknowledgement

It is advisable to have all sub-contractors working on the construction site to certify their understanding of the following:

Item	Responsibility
1	A TPDES permit has been authorized for this site regarding storm water discharges and all construction activities must comply with requirements defined in the TXR150000 General Permit.
2	Storm water discharges and specific non-storm water discharges (defined in the SWP3) are to have pollutants removed or reduced prior to any off-site discharge.
3	As a sub-contractor, I will properly dispose of all trash and floatable debris in my work area at the end of each work day.
4	As a sub-contractor, I will isolate, contain, clean and report all spills of hazardous materials. I will immediately notify the site superintendent.
5	As a sub-contractor, I will to the best of my ability, avoid the impairment, destruction and removal of erosion and sediment control devices or other BMPs such as silt fence, inlet protectors, erosion mat, grass buffer zones. Upon discovery of impairment to these devices, I will immediately notify the site superintendent so corrective action can be implemented to restore the effectiveness of the BMP device.
6	I will enter and exit the construction site through a rock entrance, if one exist, and avoid tracking sediment onto the street during and after rain events.
7	"I certify under penalty of law that I understand the terms and conditions of the Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification".

Each subcontractor engaged in activities under this SWPPP that disturb surface soil must be identified and must sign the following certification statement.

This certification is hereby signed in reference to construction at the above-referenced project.

Sub-Contractor	
Address	
Phone	
Trade Provided	
Signature	
Printed Name	
Date	



SWPPP Record Keeping Log
Table 14B: Sub-Contractor List

Each subcontractor engaged in activities under this SWPPP that disturb surface soil must be identified.

Please briefly describe the specific duties that each subcontractor will be performing.

Company Name	Address	Phone#/Fax#	Specific Duties



SWPPP Record Keeping Log

Table 14C: SWP3 Training Sessions/Spill Response Training Sessions

SWP3 Training Sessions

Date	Attendees

Spill Response Training Sessions

Date	Attendees



SWPPP Record Keeping Log
Table 15: SWP3 Site Map

<p>Important Note: The civil drawings titled:</p> <p><u>Drawing(s): _____</u> which show the work areas for developing the requirements of the <u>SWP3 Site Map</u>.</p> <p>will be used by the site supervisor to create the SWP3 Site Map for the project construction activities.</p>
<p>The Operator is required to indicate the location of the following items and revise the SWP3 Site Map as necessary to reflect revisions, deletions and additions to the site:</p> <ul style="list-style-type: none"> • Structural controls for erosion/sediment control (ie silt fence, erosion mat, sediment logs, rock filters, hay bales, grass areas, sediment pits, entrances, etc.) • Trash bins • Material storage areas • Concrete wash-out area • Fuel storage locations • Stockpile areas • Borrow areas • Equipment staging areas • Exits • Stabilized areas of the site • Directional of storm water • Outfalls • Adjacent bodies of water that may receive discharge

Drawing#	Drawing Title
	<u>Drawing(s): _____</u> which show the work areas for developing the requirements of the <u>SWP3 Site Map</u>



GENERAL NOTES

1. ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
3. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF WALL.
4. EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MUNICIPAL AND FRANCHISE UTILITY COMPANIES AND LOCATING ALL UTILITIES IN THE FIELD.
5. ALL LOT LINES BASED ON BEST AVAILABLE DATA. THE CONTRACTOR SHALL NOTIFY ENGINEER IN THE EVENT OF ANY DISCREPANCY THAT WOULD ALTER THE GRADING FLOW AS DESIGNED, OR ANY FEATURE THAT IMPACTS THE ABILITY TO CONSTRUCT THE DESIGN AS SHOWN ON THIS PLAN. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY WILLIAMSON COUNTY.
6. CONTRACTOR/OWNER SHALL COORDINATE WITH WILLIAMSON COUNTY TO OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.

CONSTRUCTION NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO WILLIAMSON COUNTY AND/OR THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WHICHEVER IS MORE RESTRICTIVE.
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE LOCATION.
3. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
4. CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.

EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES MUST BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER.
3. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFFSITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ONSITE.
4. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
5. SEDIMENT THAT IS ERODED FROM THE SITE AND DEPOSITED INTO ADJACENT PROPERTIES OR PUBLIC RIGHT-OF-WAY SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN AN APPROPRIATE MANNER.
6. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE SEEDED WITH AN APPROPRIATE ANNUAL GRASS TO PROVIDE PERMANENT VEGETATIVE STABILIZATION.

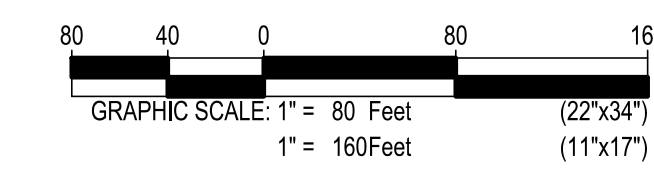
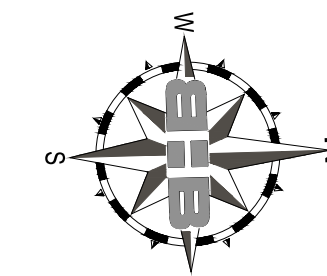
EROSION CONTROL LEGEND

DESCRIPTION	SYMBOL	LOCATION
SILT FENCE		AS SHOWN, SEE PLAN

EROSION CONTROL CONSTRUCTION RESPONSIBILITIES

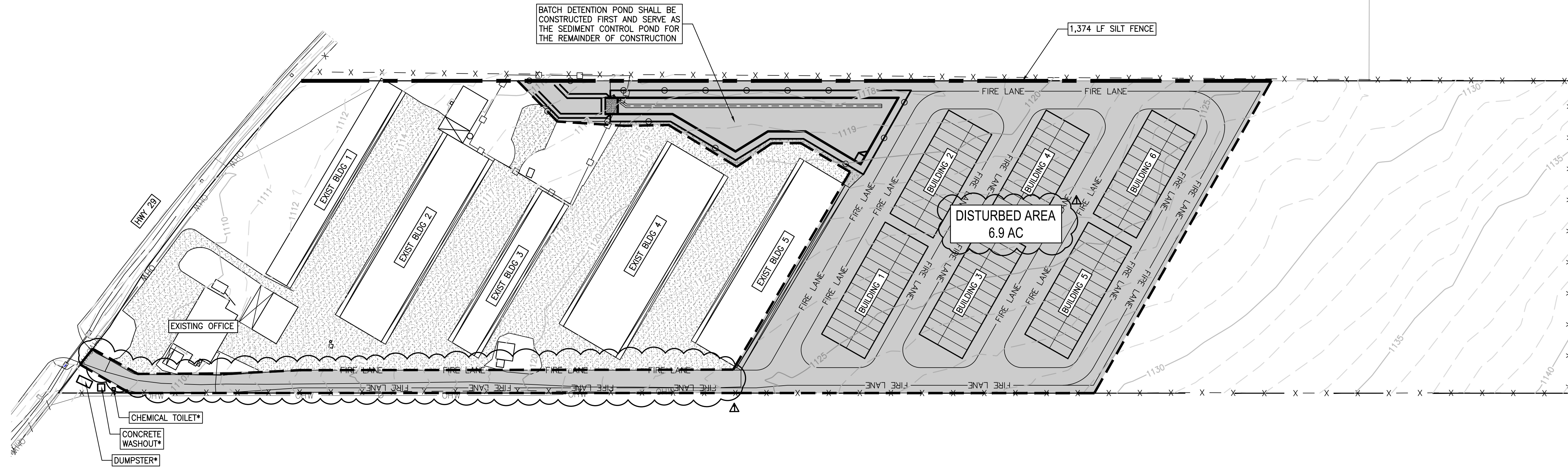
EROSION CONTROL MEASURE	INSTALLATION RESPONSIBILITY	MAINTENANCE RESPONSIBILITY
SILT FENCE	EARTHWORK CONTRACTOR	ALL CONTRACTORS

* NOTE: CONTRACTOR TO DETERMINE LOCATIONS OF DUMPSTER, CONCRETE WASHOUT, AND CHEMICAL TOILET IN THE FIELD. CONTRACTOR TO DETERMINE SIZE OF CONCRETE WASHOUT.



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR -1100-
- EXISTING MINOR CONTOUR -1101-
- EXISTING GRAVEL
- PROPOSED DETENTION POND
- DISTURBED AREA/LOC
- SILT FENCE



3/20/2023 2:42PM E:\2022\000.000\2022.163.000 - Liberty Hill Storage01 Design & Drafting\02 Civil\01 C3D\163 Erosion Control.dwg TEMPORARY EROSION CONTROL PLAN

BHB
BAIRD, HAMPTON & BROWN
 engineering and surveying
 6300 Riddle Place, Suite 700 Fort Worth, TX 76116
 email@bhbc.com • 817.338.1277 • bhbc.com
 TEPF Firm #44, #1001300, 1001302, #10194146

**A-AFFORDABLE BOAT &
 RV STORAGE**
 WILLIAMSON COUNTY, TX

TEMPORARY EROSION CONTROL PLAN

NO.	DESCRIPTION	DATE
1	FIRE MARSHAL REVIEW COMMENTS 3/6/23	03/20/2023

3/20/2023

PROJECT NUMBER: 2022.163.000
 DATE: 3/20/2023 DRAWN BY: CEK
 DESIGN BY: CW CHECKED BY: CW

SHEET
C4.0

GENERAL NOTES

- ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
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- CONTRACTOR/OWNER SHALL COORDINATE WITH WILLIAMSON COUNTY TO OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.

CONSTRUCTION NOTES

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- CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.

EROSION CONTROL NOTES

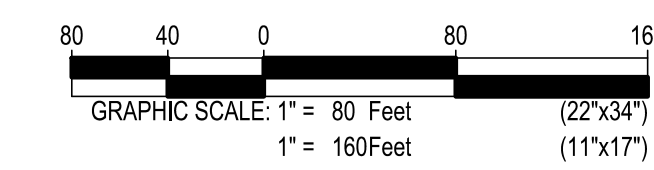
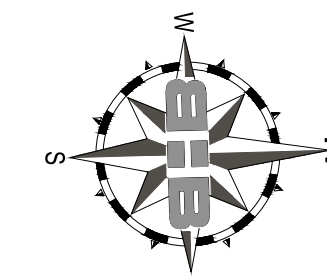
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EROSION CONTROL LEGEND

DESCRIPTION	SYMBOL	LOCATION
PERMANENT ROCK RIPRAP		AS SHOWN, SEE PLAN
PERMANENT SEEDING		AS SHOWN, SEE PLAN

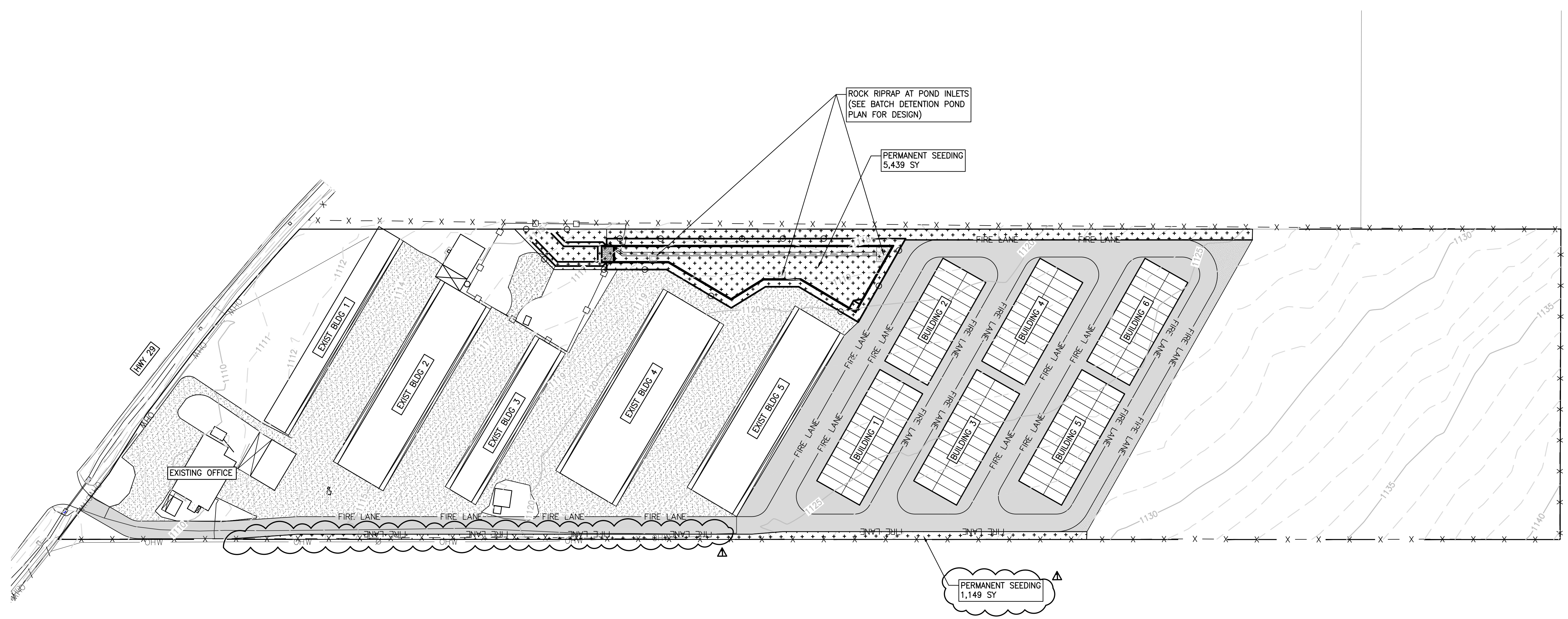
EROSION CONTROL CONSTRUCTION RESPONSIBILITIES

EROSION CONTROL MEASURE	INSTALLATION RESPONSIBILITY	MAINTENANCE RESPONSIBILITY
PERMANENT ROCK RIPRAP	EARTHWORK CONTRACTOR	ALL CONTRACTORS
PERMANENT SEEDING	EARTHWORK CONTRACTOR	ALL CONTRACTORS



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR -1100-
- EXISTING MINOR CONTOUR -1101-
- EXISTING GRAVEL
- PROPOSED ASPHALT
- PROPOSED DETENTION POND
- SEEDING
- ROCK RIPRAP



3/20/2023 2:42PM E:\2022\000\000\0022\163\000 - Liberty Hill Storage01 Design & Drafting\02 Civil\01 CSD\163 Erosion Control.dwg PERMANENT EROSION CONTROL PLAN

BHB
BAIRD, HAMPTON & BROWN
 engineering and surveying
 6300 Riddle Place, Suite 700 Fort Worth, TX 76116
 email@bhbc.com • 817.338.1277 • bhbc.com
 TEPF Firm #44, #1001300, 1001302, #10194146

A-AFFORDABLE BOAT & RV STORAGE
 WILLIAMSON COUNTY, TX

PERMANENT EROSION CONTROL PLAN

NO.	DESCRIPTION	DATE
1	FIRE MARSHAL REVIEW COMMENTS 3/6/23	03/20/2023

3/20/2023

PROJECT NUMBER: 2022.163.000
 DATE: 3/20/2023 DRAWN BY: CEK
 DESIGN BY: CW CHECKED BY: CW

SHEET
C4.1

SWPPP Record Keeping Log
Table 16: Identify Steep Slopes

Identify if steep slopes, 15% gradient or greater (6.7 to 1) are present and what steps are taken to minimize the disturbance of and if considered a distinct “portion” for start of stabilization purposes

Area#	Location	Approx Grade%	BMP Recommended

SWPPP Record Keeping Log
Table 17: Identify Topsoil Areas to Be Preserved

Identify if preservation of native topsoil is feasible or not. If not, document why not.

Area#	Location Topsoil	State Y/N if Topsoil will be maintained & If not, why?



SWPPP Record Keeping Log
Table 19: Final Site Stabilization

Date	Description
	Detention Pond
	Storm Water Sewer System (Inlets and outfalls complete)
	Street Paving
	Parking Lot Paving
	Sod
	Erosion Mat
	Rip-rap areas (outfalls, drainage areas)
	Landscaping- Trees, Shrubs, Mulch Beds, etc.
	Seeded disturbed areas for grass germination
	70% grass coverage noted for all disturbed areas
	Energy dissipaters: rip-rap, gabion structures or rock dam devices.



Form TGDW030523: Observation and Evaluation of Dewatering Controls

Pursuant to Part IV.C. of the General Construction Permit

Note: 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.

1	Report must be completed within 24 hours of observation and evaluation.
2	Personnel provided by the permittee must observe and evaluate dewatering controls at a minimum of once per day on the days where <u>dewatering discharges from the construction site occur.</u>
3	Personnel conducting these evaluations must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site.
4	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.
5	Personnel conducting these evaluations are not required to have signatory authority for reports under 30 TAC § 305.128 (relating to Signatories to Reports).





Report Data:

1	Date of observations & evaluation	
2	Observer's Name	
3	Observer's Title	
4	Discharge Time Start	
5	Discharge Time End	
6	Continued after business hours Y/N	
7	Estimated discharge rate (gallons/day)	
8	Indications of polluted discharge Y/N	
9	Type of signs: foam, odor, oil sheen, floating solids, suspended sediment	
10	Location of discharged pollutants	

11	Location of BMPs needing maintenance	
12	Location of BMPs that failed to operate as designed or proved inadequate	
13	Location where additional BMPs are needed	
14	Actions taken as a result of evaluations	
15	Dates of action taken	
16	Identify any incidents of non-compliance	

Observer's Signature: _____; Date: _____

Possible De-Watering Controls to help minimize pollutants in discharge.

1	<p>Water pump discharge hose filter bag: for silt ladened water.</p> 
2	<p>Containment pit to allow evaporation. Suggest liner to prevent groundwater contamination.</p> 
3	<p>Containment berm area to allow evaporation. Suggest liner to prevent groundwater contamination.</p> 
4	<p>Grass filter discharge area</p> 

Note: Discharge water with pollutants other than silt may need to be contained, removed and treated.

Section 8: Appendix

Appendix 1	Historic Places
Appendix 2	Endangered Species Information
Appendix 3	BMP & Structural Controls Specifications
Appendix 4	Engineer's Civil Sheets: Erosion Control Plan Sheet C4.0,C4.1 Erosion Control Detail Sheet C4.2

Appendix 1	Historical Places
-------------------	--------------------------

Impact on Historical Places

It is the Operator's responsibility to assure that construction activities and the discharge storm water from this site will not adversely affect registered Historic Places.


See Section 8 Appendix List: Historic Places.


Pre-construction site inspections should be conducted and personnel should report immediately any historic places found and contact the preservation agencies to determine appropriate action.

Operator must comply with the National Historic Preservation Act and

- a) assure storm water discharge does not adversely affect a listed property or a property eligible for listing with the National Historic Register
- b) or b) obtain and comply with a written agreement between the Operator and the State Historic Preservation Officer that outlines all measures to be undertaken by the applicant to mitigate or prevent adverse affects to the historic property.

TEXAS - Williamson County

	
Amos, Martin C., House (added 1986 - - #86000989) 1408 Olive , Georgetown	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Belford Lumber Co.	Architectural Style:
No Style Listed	Area of Significance:
Architecture	Period of Significance:
1900-1924	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	

	
Arnold--Torbet House (added 1986 - - #86000990) 908 Pine , Georgetown	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
UnknownY	Architectural Style:
No Style Listed	Area of Significance:
Architecture	Period of Significance:
1875-1899	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:

Domestic	Current Sub-function:
Single Dwelling	
 Atkinson House (added 1986 -- #86000992) 911 Walnut , Georgetown	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Belford Lumber Co.	Architectural Style:
Bungalow/Craftsman	Area of Significance:
Architecture	Period of Significance:
1900-1924	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	
 Bartlett Commercial Historic District (added 1980 -- #80004076) E. Clark St. , Bartlett	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Unknown	Architectural Style:
Early Commercial, Beaux Arts	Area of Significance:
Architecture	Period of Significance:
1900-1924	Owner:
Local,Private	Historic Function:
Commerce/Trade	Historic Sub-function:
Business, Specialty Store	

	Current Function:
Commerce/Trade, Social, Vacant/Not In Use	
	Current Sub-function:
Business, Civic, Professional, Specialty Store	
	
Belford Historic District (added 1986 - - #86000991) Also known as See Also:Tinnen House Roughly bounded by University Ave., Main, E. Eighteenth, and Austin , Georgetown	
	Historic Significance:
Architecture/Engineering	
	Architect, builder, or engineer:
Et al., Belford, Charles S.	
	Architectural Style:
Bungalow/Craftsman, Late 19th And Early 20th Century American Movements, Late Victorian	
	Area of Significance:
Architecture	
	Period of Significance:
1925-1949, 1900-1924, 1875-1899	
	Owner:
Local, Private	
	Historic Function:
Domestic	
	Historic Sub-function:
Single Dwelling	
	Current Function:
Domestic	
	Current Sub-function:
Single Dwelling	
	
Bowlen House (added 1986 - - #86000180) 1405 Forest , Georgetown	
	Historic Significance:
Architecture/Engineering	
	Architect, builder, or engineer:
Unknown	
	Architectural Style:
Other	
	Area of Significance:
Architecture	
	Period of Significance:
1875-1899	
	Owner:
Private	
	Historic Function:
Domestic	

Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


 Bryson Stage Coach Stop (added 1978 - - #78003000)
 Also known as Bryson Place
 NW of Liberty Hill on TX 29 , Liberty Hill

Event, Architecture/Engineering	Historic Significance:
Bryson, John T.	Architect, builder, or engineer:
Other	Architectural Style:
Exploration/Settlement, Architecture	Area of Significance:
1850-1874	Period of Significance:
Private	Owner:
Agriculture/Subsistence, Domestic, Transportation	Historic Function:
Animal Facility, Road-Related, Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:



 Burcham House (added 1986 - - #86000993)
 1310 College , Georgetown

Architecture/Engineering	Historic Significance:
Griffith Lumber Co., Page, C.H.	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1900-1924	Period of Significance:
Private	Owner:

Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


Casey House (added 1986 - - #86000184)
705 E. Third , Georgetown

Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Other, Late Victorian	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


Caswell House (added 1986 - - #86000994)
207 E. Ninth , Georgetown

Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Other	Architectural Style:
Architecture	Area of Significance:
1900-1924	Period of Significance:
	Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Chesser--Morgan House (added 1986 - - #86000185)
1202 E. Fifteenth , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

Other, Late Victorian

Area of Significance:

Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Cooper, Jesse and Sara, House (added 1996 - - #96000073)
Also known as Site No. 840
1.8 mi. E of Georgetown Hwy. 29 , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

Other

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Daughtrey, E. M., House (added 1986 - - #86000984)
1316 E. University , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Dimmitt, John J., House (added 1996 - - #96000076)
Also known as Site No. 166
W. University (TX 29) 0.5 mi. W of jct. with Austin Hwy. , Georgetown

Historic Significance:

Person

Historic Person:

Dimmitt, John J.

Significant Year:

1870

Area of Significance:

Other, Commerce, Social History

Period of Significance:

1875-1899, 1850-1874

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Easley, S. A., House (added 1986 -- #86000983)
1310 Olive , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



First Methodist Church (added 1986 -- #86001368)
410 E. University , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Hyer, Dr. Robert S.

Architectural Style:

Gothic Revival
Area of Significance:
Architecture
Period of Significance:
1875-1899
Owner:
Private
Historic Function:
Religion
Historic Sub-function:
Religious Structure
Current Function:
Religion
Current Sub-function:
Religious Structure


Fowler, D. D., House (added 1986 -- #86000985)
1531 Ash , Georgetown

Historic Significance:
Architecture/Engineering
Architect, builder, or engineer:
Belford Lumber Co.
Architectural Style:
Other, Late Victorian
Area of Significance:
Architecture
Period of Significance:
1900-1924, 1875-1899
Owner:
Private
Historic Function:
Domestic
Historic Sub-function:
Single Dwelling
Current Function:
Domestic
Current Sub-function:
Single Dwelling


Georgetown Light and Water Works (added 1996 -- #96000074)
Also known as Site No. 125
403 W. 9th , Georgetown

Historic Significance:
Architecture/Engineering
Area of Significance:

Architecture	Period of Significance:
1900-1924	Owner:
Local	Historic Function:
Government,Industry/Processing/Extraction	Historic Sub-function:
Public Works, Water Works	Current Function:
Government	Current Sub-function:
Correctional Facility	


 Grace Episcopal Church (added 1999 - - #86000986)
 1314 E. University , Georgetown

	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Unknown	Architectural Style:
Gothic Revival	Area of Significance:
Architecture	Period of Significance:
1875-1899	Owner:
Private	Historic Function:
Religion	Historic Sub-function:
Religious Structure	Current Function:
Religion	Current Sub-function:
Religious Structure	


 Harper--Chesser House (added 1986 - - #86000969)
 1309 College , Georgetown

	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Unknown	Architectural Style:
No Style Listed	

Architecture	Area of Significance:
1875-1899, 1850-1874	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:
	
Harrell, Moses, House (added 1986 - - #86000169) 1001 Church , Georgetown	
	Historic Significance:
Architecture/Engineering, Person	Architect, builder, or engineer:
Whittle & Harrell	Architectural Style:
No Style Listed	Historic Person:
Harrell, Moses	Significant Year:
1885	Area of Significance:
Architecture, Commerce	Period of Significance:
1875-1899	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	
	
Harris, E. M., House (added 1986 - - #86000168) 404 E. Seventh , Georgetown	
	Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Hawnen, A. W., House (added 1986 -- #86000967)
1409 Olive , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Irvine Lumber Co., Irvine, George

Architectural Style:

Other, Late Victorian

Area of Significance:

Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Hewitt, M. S., House (added 1996 -- #96000071)

Also known as Site No. 672
1019 S. College , Georgetown

Architecture/Engineering	Historic Significance:
Other	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Unknown	Current Function:


House at 214 W. University (added 1986 - - #86000987)
214 W. University , Georgetown

Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


House at 801 West (added 1986 - - #86000172)
801 West , Georgetown

Historic Significance:

Architecture/Engineering Architect, builder, or engineer:
Unknown Architectural Style:
Other Area of Significance:
Architecture Period of Significance:
1900-1924 Owner:
Private Historic Function:
Domestic Historic Sub-function:
Single Dwelling Current Function:
Domestic Current Sub-function:
Single Dwelling



House at 907 Pine (added 1986 - - #86000171)
907 Pine , Georgetown

Historic Significance:

Architecture/Engineering Architect, builder, or engineer:
Unknown Architectural Style:
Other Area of Significance:
Architecture Period of Significance:
1875-1899 Owner:
Private Historic Function:
Domestic Historic Sub-function:
Single Dwelling Current Function:
Domestic Current Sub-function:
Single Dwelling



Hyer, Dr. Robert, House (added 1986 - - #86000175)
904 Ash , Georgetown


Historic Significance:

Architecture/Engineering, Person	Historic Significance:
Unknown	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Hyer, Dr. Robert S.	Historic Person:
1880	Significant Year:
Education, Architecture	Area of Significance:
1900-1924, 1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:
	
Imhoff House (added 1986 - - #86000176) 208 Austin , Georgetown	
Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
	Current Function:

Domestic	Current Sub-function:
Single Dwelling	
 Inn at Brushy Creek (added 1970 - - #70000777) Also known as Cole House Taylor Exit off U.S. 79, off I-35 , Old Round Rock	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Unknown	Architectural Style:
No Style Listed	Area of Significance:
Architecture	Period of Significance:
1850-1874	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Hotel	Current Function:
Commerce/Trade, Domestic	Current Sub-function:
Restaurant, Single Dwelling	
 Irvine, George, House (added 1986 - - #86000973) 409 E. University , Georgetown	
	Historic Significance:
Person, Architecture/Engineering	Architect, builder, or engineer:
Irvine,George	Architectural Style:
No Style Listed	Historic Person:
Irvine,George	Significant Year:
1886	Area of Significance:
Architecture, Commerce	Period of Significance:
1875-1899	Owner:

Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	
 Johnson, J. J., Farm (added 1986 -- #86000178) Rabbitt Hill Rd. , Georgetown	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Johnson,J.J.	Architectural Style:
Other	Area of Significance:
Architecture	Period of Significance:
1850-1874	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	
 Kenney's Fort Site (41WM465) (added 1987 -- #87000565) Also known as 41WM465 Address Restricted , Round Rock	
	Historic Significance:
Event, Information Potential	Area of Significance:
Exploration/Settlement, Politics/Government, Historic - Non-Aboriginal, Transportation	Cultural Affiliation:
Rural,american	Period of Significance:
1850-1874, 1825-1849	Owner:

Private
Historic Function:
Defense
Historic Sub-function:
Fortification
Current Function:
Agriculture/Subsistence


Lane-Riley House (added 1986 - - #86000975)
1302 College , Georgetown

Historic Significance:
Architecture/Engineering
Architect, builder, or engineer:
Unknown
Architectural Style:
No Style Listed
Area of Significance:
Architecture
Period of Significance:
1875-1899
Owner:
Private
Historic Function:
Domestic
Historic Sub-function:
Single Dwelling
Current Function:

Vacant/Not In Use

Leake, Will and Mary, House (added 1986 - - #86000976)
313 E. Seventh , Georgetown

Historic Significance:
Architecture/Engineering
Architect, builder, or engineer:
Belford Lumber Co.
Architectural Style:
No Style Listed
Area of Significance:
Architecture
Period of Significance:
1900-1924
Owner:
Private
Historic Function:
Domestic

Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:
	
Leavell, John, House (added 1986 - - #86000979) 803 College , Georgetown	
Person, Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Queen Anne	Architectural Style:
Leavell, John	Historic Person:
1890	Significant Year:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic, Vacant/Not In Use	Current Function:
Single Dwelling	Current Sub-function:
	
Lockett, M. B. and Annie, House (added 1986 - - #86000981) 811 E. University , Georgetown	
Person, Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Other	Architectural Style:
Lockett, M.B.	Historic Person:
	Significant Year:

1888

Architecture, Commerce

1875-1899

Private

Domestic

Single Dwelling

Domestic

Single Dwelling



Love, Frank and Mellie, House (added 1986 - - #86000977)
1415 Ash , Georgetown

Area of Significance:

Period of Significance:

Owner:

Historic Function:

Historic Sub-function:

Current Function:

Current Sub-function:

Historic Significance:

Person, Architecture/Engineering

Waller, M.L.

No Style Listed

Love, Frank

1916

Politics/Government, Architecture

1925-1949, 1900-1924

Private

Domestic

Single Dwelling

Domestic

Single Dwelling



Makemson, W. K. and Kate, House (added 1986 - - #86000190)

Architect, builder, or engineer:

Architectural Style:

Historic Person:

Significant Year:

Area of Significance:

Period of Significance:

Owner:

Historic Function:

Historic Sub-function:

Current Function:

Current Sub-function:

1002 Ash , Georgetown	
Event, Architecture/Engineering	Historic Significance:
Griffith Lumber Co.	Architect, builder, or engineer:
Queen Anne	Architectural Style:
Politics/Government, Architecture	Area of Significance:
1900-1924	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:
	
McFadin House (added 1980 -- #80004160) N of Taylor , Taylor	
Person, Architecture/Engineering	Historic Significance:
Hughes, Mr.	Architect, builder, or engineer:
Greek Revival	Architectural Style:
McFadin, David H.	Historic Person:
1851, 1896	Significant Year:
Exploration/Settlement, Architecture	Area of Significance:
1875-1899, 1850-1874	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
	Current Function:

Domestic

Current Sub-function:

Single Dwelling



McKnight--Ebb House (added 1986 -- #86000191)
502 W. Eighteenth , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1875-1899, 1850-1874

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



McMurray House (added 1986 -- #86000192)
611 Church , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Clamp,C.A.D.

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1875-1899, 1850-1874

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling
Domestic
Single Dwelling


Merrell, Capt. Nelson, House (added 1970 - - #70000778)
NE of Round Rock on U.S. 79 , Round Rock

Architecture/Engineering

Smith,A.

No Style Listed

Architecture

1850-1874

Private

Domestic

Single Dwelling

Domestic

Single Dwelling


Miller--Ellyson House (added 1986 - - #86000193)
303 E. Ninth , Georgetown

Architecture/Engineering

Belford Lumber Co.

No Style Listed

Architecture

1900-1924, 1875-1899

Private

Domestic

Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


 Old Georgetown High School (added 1986 - - #86000195)
 507 E. University , Georgetown

Architecture/Engineering	Historic Significance:
Wattinger Bros. & Taylor Const., Page,C.H.,& Bros.	Architect, builder, or engineer:
Other, Mission/Spanish Revival	Architectural Style:
Architecture	Area of Significance:
1925-1949	Period of Significance:
Local	Owner:

Education	Historic Function:
School	Historic Sub-function:
Education	Current Function:
School	Current Sub-function:


 Paige--DeCrow--Weir House (added 1986 - - #86000194)
 I-35 and SR 2243 , Georgetown

Architecture/Engineering	Historic Significance:
Belford,C.S.	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1900-1924	Period of Significance:
Private	Owner:
	Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Patrick, Woodson and Margaret, House (added 1986 - - #86000197)
211 E. Fifth , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

Other

Area of Significance:

Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Vacant/Not In Use



Pegues House (added 1986 - - #86000196)
904 E. University , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:


Private


Historic Function:

Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	
 Preslar--Hewitt Building (added 2003 - - #03000331) 321-323 N. Main , Taylor	
	Historic Significance:
Architecture/Engineering, Event	Architectural Style:
Other	Area of Significance:
Architecture, Commerce	Period of Significance:
1950-1974, 1925-1949, 1900-1924	Owner:
Private	Historic Function:
Commerce/Trade	Historic Sub-function:
Specialty Store	Current Function:
Commerce/Trade, Domestic	Current Sub-function:
Single Dwelling, Specialty Store	
 Price, R. H. and Martha, House (added 1986 - - #86000982) 209 E. Tenth , Georgetown	
	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Unknown	Architectural Style:
Other	Area of Significance:
Architecture	Period of Significance:
1875-1899	Owner:
Private	Historic Function:
Domestic	


Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:

TEXAS - Williamson County


 Railroad Produce Depot (added 1979 - - #79003024) 401 W. 6th St. , Georgetown	
Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:
Private	Owner:
Agriculture/Subsistence	Historic Function:
Storage	Historic Sub-function:
Commerce/Trade	Current Function:
Warehouse	Current Sub-function:

 Reedy, J. H., House (added 1986 - - #86000949) 908 E. University , Georgetown	
Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Late Victorian	Architectural Style:
	Area of Significance:

Architecture	Period of Significance:
1900-1924	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	



Round Rock Commercial Historic District (added 1983 - - #83003170)
100 and 200 blks E. Main St. , Round Rock

Event, Architecture/Engineering	Historic Significance:
Italianate	Architectural Style:
Architecture, Commerce	Area of Significance:
1925-1949, 1900-1924, 1875-1899, 1850-1874	Period of Significance:
Private	Owner:
Commerce/Trade,Government,Industry/Processing/Extraction,Social	Historic Function:
Manufacturing Facility, Meeting Hall, Post Office	Historic Sub-function:
Commerce/Trade, Government, Recreation And Culture	Current Function:
Museum, Post Office	Current Sub-function:


Round Rock Post Office and William M. Owen House (added 1983 - - #83003171)
Chisholm Trail and Emanuel St. , Round Rock

Event, Architecture/Engineering	Historic Significance:
No Style Listed	Architectural Style:
Architecture, Commerce	Area of Significance:
1850-1874	Period of Significance:

Private	Owner:
Commerce/Trade,Domestic,Government	Historic Function:
Post Office, Single Dwelling	Historic Sub-function:
Commerce/Trade	Current Function:
Business, Professional	Current Sub-function:


Rouser House (added 1986 -- #86000198)
602 Myrtle , Georgetown

Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Other, Late Victorian	Architectural Style:
Architecture	Area of Significance:
1875-1899	Period of Significance:

Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


Saint John's Methodist Church (added 1986 -- #86000950)
301 E. University , Georgetown

Event, Architecture/Engineering	Historic Significance:
Page,C.H.	Architect, builder, or engineer:
Gothic Revival	Architectural Style:
European, Architecture	Area of Significance:
	Period of Significance:

1925-1949, 1900-1924

Owner:

Private

Historic Function:

Religion

Historic Sub-function:

Religious Structure

Current Function:

Religion

Current Sub-function:

Religious Structure



Sansom--Schmalenbeck House (added 1986 -- #86000199)
813 Church , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

Other

Area of Significance:

Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Saxon Motor Car Store (added 1986 -- #86001366)
316 E. Sixth St. , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:


No Style Listed

Area of Significance:

Architecture	Period of Significance:
1900-1924	Owner:
Private	Historic Function:
Commerce/Trade	Historic Sub-function:
Specialty Store	Current Function:
Vacant/Not In Use	


 Sillure, A. W., House (added 1986 - - #86000951)
 1414 Ash , Georgetown

	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Belford Lumber Co.	Architectural Style:
No Style Listed	Area of Significance:
Architecture	Period of Significance:
1900-1924	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	


 Southwestern University Administration Building and Mood Hall (added 1975 - - #75002013)
 University Ave., Southwestern University campus , Georgetown

	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Hyer,Robert S.	Architectural Style:
Other, Romanesque	Area of Significance:
Architecture	

1900-1924	Period of Significance:
State, Private	Owner:
Education	Historic Function:
College, Educational Related Housing	Historic Sub-function:
Commerce/Trade, Education	Current Function:
College, Organizational	Current Sub-function:


 Stone, Robert and Lula, House (added 1986 - - #86000200)
 1102 Ash , Georgetown

Architecture/Engineering	Historic Significance:
Belford Lumber Co.	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1900-1924	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:


 Taylor Downtown Historic District (added 2005 - - #05001193)
 Roughly bounded by 5th, Washburn, 1st & Vance Sts. , Taylor

Event, Architecture/Engineering	Historic Significance:
Wetmore, James, Struve, Henry	Architect, builder, or engineer:
Late 19th And 20th Century Revivals, Modern Movement	Architectural Style:
	Area of Significance:

Commerce, Architecture, Community Planning And Development

Period of Significance:

1950-1974, 1925-1949, 1900-1924, 1875-1899

Owner:

Private,Local

Historic Function:

Agriculture/Subsistence,Commerce/Trade,Government,Industry/Processing/Extraction

Historic Sub-function:

City Hall, Department Store, Financial Institution, Manufacturing Facility, Post Office, Processing, Specialty Store

Current Function:

Commerce/Trade, Government, Vacant/Not In Use

Current Sub-function:

City Hall, Financial Institution, Professional, Specialty Store



Taylor National Bank (added 1980 - - #80004159)
200 Main St. , Taylor

Historic Significance:

Event, Architecture/Engineering

Architect, builder, or engineer:

Watson,A. O.

Architectural Style:

Romanesque, Renaissance

Area of Significance:

Economics, Architecture

Period of Significance:

1875-1899

Owner:

Private

Historic Function:

Commerce/Trade

Historic Sub-function:

Financial Institution

Current Function:

Vacant/Not In Use



Taylor--Cooper House (added 1986 - - #86000203)
105 E. Fifth , Georgetown

Historic Significance:

Architecture/Engineering, Person

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

No Style Listed

Historic Person:

Taylor, Emzy, et al.

1910, 1870, 1902

Architecture, Commerce

1900-1924, 1875-1899, 1850-1874

Private

Domestic

Single Dwelling

Domestic

Single Dwelling

Significant Year:

Area of Significance:

Period of Significance:

Owner:

Historic Function:

Historic Sub-function:

Current Function:

Current Sub-function:



Tinnen House (added 1970 - - #70000776)
1220 Austin St. , Georgetown

Architecture/Engineering

Dilley, Clarence

Italianate

Architecture

1875-1899

Private

Domestic

Single Dwelling

Domestic

Single Dwelling

Historic Significance:

Architect, builder, or engineer:

Architectural Style:

Area of Significance:

Period of Significance:

Owner:

Historic Function:

Historic Sub-function:

Current Function:

Current Sub-function:



University Avenue-Elm Street Historic District (added 1979 - - #79003025)
E. University and Elm Sts. , Georgetown


Architecture/Engineering

Historic Significance:

	Architect, builder, or engineer:
Hyer, Robert	
	Architectural Style:
Other, Colonial Revival, Queen Anne	
	Area of Significance:
Architecture	
	Period of Significance:
1900-1924, 1875-1899	
	Owner:
Private	
	Historic Function:
Domestic	
	Historic Sub-function:
Single Dwelling	
	Current Function:
Domestic	
	Current Sub-function:
Single Dwelling	


Vaden, W. C. and Kate, House (added 1986 -- #86000952)
711 E. University, Georgetown

	Historic Significance:
Architecture/Engineering	
	Architect, builder, or engineer:
Belford Lumber Co.	
	Architectural Style:
No Style Listed	
	Area of Significance:
Architecture	
	Period of Significance:
1900-1924	
	Owner:
Private	
	Historic Function:
Domestic	
	Historic Sub-function:
Single Dwelling	
	Current Function:
Domestic	
	Current Sub-function:
Single Dwelling	


Wesley Chapel A.M.E Church (added 1986 -- #86000204)
508 W. Fourth, Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Unknown

Architectural Style:

Gothic Revival

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:

Private

Historic Function:

Religion

Historic Sub-function:

Religious Structure

Current Function:

Religion

Current Sub-function:

Religious Structure



Wilcox, D. K. and Inez, House (added 1986 - - #86000954)
1307 Olive , Georgetown

Historic Significance:

Architecture/Engineering

Architect, builder, or engineer:

Belford Lumber Co.

Architectural Style:

No Style Listed

Area of Significance:

Architecture

Period of Significance:

1900-1924

Owner:

Private

Historic Function:

Domestic

Historic Sub-function:

Single Dwelling

Current Function:

Domestic

Current Sub-function:

Single Dwelling



Wilcox--Graves House (added 1986 - - #86000953)

1403 Olive , Georgetown	
Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
No Style Listed	Architectural Style:
Architecture	Area of Significance:
1900-1924	Period of Significance:
Private	Owner:
Domestic	Historic Function:
Single Dwelling	Historic Sub-function:
Domestic	Current Function:
Single Dwelling	Current Sub-function:
	
Williamson County Courthouse Historic District (Boundary Increase) (added 1986 -- #86000955) Also known as See Also:Williamson County Courthouse Historical District 114--124 and 113 E. Eighth St. , Georgetown	
Event, Architecture/Engineering	Historic Significance:
Unknown	Architect, builder, or engineer:
Other, Colonial Revival	Architectural Style:
Architecture, Commerce	Area of Significance:
1925-1949, 1900-1924, 1875-1899	Period of Significance:
Federal,Private	Owner:
Commerce/Trade,Government	Historic Function:
Business, Post Office, Specialty Store	Historic Sub-function:
Commerce/Trade, Government	Current Function:
Business, Post Office, Professional, Specialty Store	Current Sub-function:



Williamson County Courthouse Historical District (added 1977 - - #77001480)
Also known as See Also:Georgetown MRA
Rock and 9th Sts., Main and 7th Sts. (includes both sides) , Georgetown

	Historic Significance:
Event, Architecture/Engineering	Architect, builder, or engineer:
Multiple	Architectural Style:
Other, Classical Revival, Late Victorian	Area of Significance:
Politics/Government, Architecture, Commerce	Period of Significance:
1900-1924, 1875-1899, 1850-1874	Owner:
Local,Private	Historic Function:
Commerce/Trade,Government,Recreation And Culture,Social	Historic Sub-function:
Business, Courthouse, Outdoor Recreation	Current Function:
Commerce/Trade, Education, Government	



Zidell House (added 2009 - - #09000308)
2015 W. Lake Dr. , Taylor

	Historic Significance:
Architecture/Engineering	Architect, builder, or engineer:
Lundgren & Maurer	Architectural Style:
International Style	Area of Significance:
Architecture	Period of Significance:
1950-1974	Owner:
Private	Historic Function:
Domestic	Historic Sub-function:
Single Dwelling	Current Function:
Domestic	Current Sub-function:
Single Dwelling	

Appendix 2	Endangered Species Information
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Impact on Endangered Species

It is the Operator’s responsibility to protect endangered or threatened species of animals, fish or plants and their habitat in or near the construction activity area.

The Operator(s) will review the list of Federal and State endangered or threatened species located in Section 8: Endangered Species and assure by means of pre-construction and on-going site inspection that construction activities do not result in jeopardy to any of the listed species in or near the construction activity area.

Site personnel should report to their management immediately any signs of endangered or threatened species or habitat and contact U.S. Fish and Wildlife and Texas Parks and Wildlife to determine appropriate action.

WILLIAMSON COUNTY**AMPHIBIANS****Barton Springs salamander** *Eurycea sosorum*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LE

State Status: E

SGCN: Y

Endemic: Y

Global Rank: G1

State Rank: S1

Georgetown salamander *Eurycea naufragia*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LT

State Status: T

SGCN: Y

Endemic: Y

Global Rank: G1

State Rank: S1

Jollyville Plateau salamander *Eurycea tonkawae*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LT

State Status: T

SGCN: Y

Endemic: Y

Global Rank: G2

State Rank: S2

Salado Springs salamander *Eurycea chisholmensis*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LT

State Status: T

SGCN: Y

Endemic: Y

Global Rank: G1

State Rank: S1

southern crawfish frog *Lithobates areolatus areolatus*

Terrestrial and aquatic: The terrestrial habitat is primarily grassland and can vary from pasture to intact prairie; it can also include small prairies in the middle of large forested areas. Aquatic habitat is any body of water but preferred habitat is ephemeral wetlands.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G4T4

State Rank: S3

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S3

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: SU

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WILLIAMSON COUNTY**ARACHNIDS****Bone Cave harvestman** *Texella reyesi*

Small, blind, cave-adapted harvestman endemic to several caves in Travis and Williamson counties; weakly differentiated from *Texella reddelli*

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Tartarocreagris infernalis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2?

No accepted common name *Cicurina browni*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Cicurina trivisae*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2Q	State Rank: S1

No accepted common name *Cicurina vibora*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Eidmannella reclusa*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

Reddell harvestman *Texella reddelli*

Small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

BIRDS**bald eagle** *Haliaeetus leucocephalus*

Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

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WILLIAMSON COUNTY**BIRDS**

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

Black Rail *Laterallus jamaicensis*

Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

Chestnut-collared Longspur *Calcarius ornatus*

Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (*Quercus* spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

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WILLIAMSON COUNTY**BIRDS**

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

Lark Bunting *Calamospiza melanocorys*

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

pipin plover *Charadrius melodus*

Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

Rufa Red Knot *Calidris canutus rufa*

Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: S2N

swallow-tailed kite *Elanoides forficatus*

Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

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WILLIAMSON COUNTY**BIRDS****western burrowing owl** *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1S2N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

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WILLIAMSON COUNTY**FISH****Guadalupe bass** *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

INSECTS**a mayfly** *Procloeon distinctum*

Mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3Q	State Rank: S2?

a mayfly *Pseudocentroptiloides morihari*

Mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2?

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

cave obligate springtail *Oncopodura fenestra*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2?

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WILLIAMSON COUNTY**INSECTS**

Coffin Cave mold beetle *Batrisodes texanus*
Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Coffin Cave mold beetle *Batrisodes cryptotexanus*
Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G2 State Rank: SNR

Kretschmarr Cave mold beetle *Texamaurops reddelli*
Small, cave-adapted beetle found under rocks buried in silt; small, Edwards Limestone caves in of the Jollyville Plateau, a division of the Edwards Plateau
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Lymantes nadineae*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Rhadine noctivaga*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Rhadine russelli*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Rhadine subterranea*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2 State Rank: S2

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WILLIAMSON COUNTY**INSECTS****No accepted common name** *Bombus variabilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1G2	State Rank: SNR

Tooth Cave ground beetle *Rhadine persephone*

Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

MAMMALS**big brown bat** *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

cave myotis bat *Myotis velifer*Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2S3

eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

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WILLIAMSON COUNTY**MAMMALS****eastern spotted skunk***Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G4

State Rank: S1S3

hoary bat*Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G3G4

State Rank: S4

long-tailed weasel*Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S5

mountain lion*Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S2S3

Northern yellow bat*Lasiurus intermedius*

Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegetation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S4

swamp rabbit*Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G5

State Rank: S5

tricolored bat*Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status:

State Status:

SGCN: Y

Endemic: N

Global Rank: G2G3

State Rank: S2

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WILLIAMSON COUNTY**MAMMALS****western hog-nosed skunk** *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. *telmalestes*

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

MOLLUSKS**Balcones Spike** *Fusconaia iheringi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: GNR	State Rank: SNR

Brazos Heelsplitter *Potamilus streckersoni*

Reported from streams, but not far into the headwaters, to large rivers, and some reservoirs. In riverine systems occurs most often in nearshore habitats such as banks and backwater pools but occasionally in mainchannel habitats such as riffles. Typically found in standing to slow-flowing water in soft substrates consisting of silt, mud or sand but occasionally in moderate flows with gravel and cobble substrates (Randklev et al. 2014b,c; Tsakiris and Randklev 2016b; Smith et al. 2019) [Mussels of Texas 2020]

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: SNR

Texas Fawnsfoot *Truncilla macrodon*

Occurs in large rivers but may also be found in medium-sized streams. Is found in protected near shore areas such as banks and backwaters but also riffles and point bar habitats with low to moderate water velocities. Typically occurs in substrates of mud, sandy mud, gravel and cobble. Considered intolerant of reservoirs (Randklev et al. 2010; Howells 2010o; Randklev et al. 2014b,c; Randklev et al. 2017a,b). [Mussels of Texas 2019]

Federal Status: PT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

REPTILES**common garter snake** *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

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WILLIAMSON COUNTY**REPTILES****eastern box turtle** *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T4	State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

timber (canebrake) rattlesnake *Crotalus horridus*

Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

western chicken turtle *Deirochelys reticularia miaria***DISCLAIMER**

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WILLIAMSON COUNTY**REPTILES**

Aquatic and terrestrial: This species uses aquatic habitats in the late winter, spring and early summer and then terrestrial habitats the remainder of the year. Preferred aquatic habitats seem to be highly vegetated shallow wetlands with gentle slopes. Specific terrestrial habitats are not well known.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T5	State Rank: S2S3

PLANTS**bigflower cornsalad** *Valerianella stenocarpa*

Usually along creekbeds or in vernal moist grassy open areas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Elmendorf's onion *Allium elmendorffii*

Grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; Perennial; Flowering March-April, May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

DISCLAIMER

The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. The data provided are for planning, assessment, and informational purposes. Refer to the Frequently Asked Questions (FAQs) on the application website for further information.

WILLIAMSON COUNTY**PLANTS****scarlet leather-flower** *Clematis texensis*

Usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams; Perennial; Flowering March-July; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas almond *Prunus minutiflora*

Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas claret-cup cactus *Echinocereus coccineus var. paucispinus*

Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T3	State Rank: S3

Wright's milkvetch *Astragalus wrightii*

On sandy or gravelly soils; April (Diggs et al. 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

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Appendix 3	BMP & Structural Controls Specifications
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The following defines the design description of BMPs suggested in this manual.

They are sourced from the North Central Texas Council of Governments (NCTCOG) *iSWM Design Manual for Construction* (see www.iswm.nctcog.org).

NOTE: The following supersede this design detail:

- Engineer's Civil Sheet Erosion Control Details
- Local municipal storm water ordinances.
- Revisions due to specific site conditions and application.

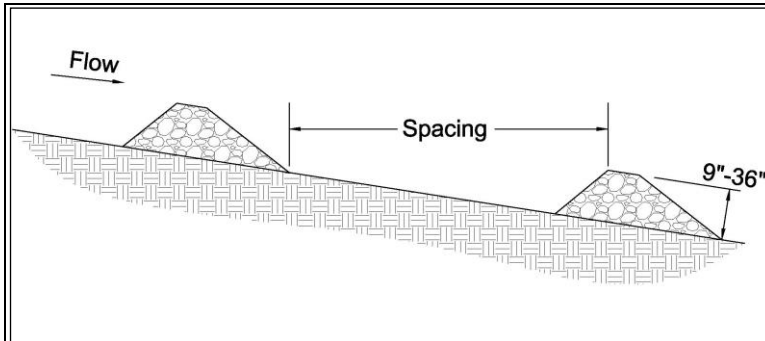
Go to—http://iswm.nctcog.org/Documents/technical_manual/Construction_Controls_4-2010b.pdf

Erosion & Sediment Controls	Page
Rock Check Dam	NCTCOG
Erosion Control Blanket	
Vegetation	
Dewatering Controls	
Inlet Protection	
Organic Filter Tube	
Silt Fence	
Construction Entrance	
Silt Fence Cross-Check	
Material & Waste Control	
Chemical Management	
Concrete Sawcutting Waste	
Concrete Waste Management	
Debris & Trash Management	
Hyper-Chlorinated Water	
Sandblasting Waste	
Sanitary Waste Management	
Spill & Leak Response Procedures	
Vehicle & Equipment Management	
Erosion Control Detail Sheet	Sheets C4.2

2.0 Erosion Controls

2.1 Check Dam

Erosion Control



Description: Check dams are small barriers consisting of loose rock, rock bags, or organic filter tubes placed across a drainage swale or ditch. They reduce the velocity of small concentrated flows, provide a limited barrier for sediment and reduce the potential for erosion of the swale or ditch.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Heights between 9 inches and 36 inches
- Top of the downstream dam should be at the same elevation as the toe of the upstream dam

ADVANTAGES / BENEFITS:

- Reduced velocities in long drainage swales or ditches
- May be used with other channel protection measures
- Provides some sediment removal

DISADVANTAGES / LIMITATIONS:

- Cannot be used in live stream channels
- Minor ponding upstream of the check dams
- Extensive maintenance or replacement of the dams required after heavy flows or high velocity flows
- Mowing hazard from loose rocks if all rock is not removed at end of construction

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Remove silt when it reaches approximately 1/3 the height of the dam or 12 inches, whichever is less

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.30-0.50

(Depends on soil type)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- None

2.1.1 Primary Use

Check dams are used in long drainage swales or ditches to reduce erosive velocities. They are typically used in conjunction with other channel protection techniques such as vegetation lining and turf reinforcement mats. Check dams provide limited treatment to sediment-laden flows. They are more useful in reducing flow velocities to acceptable levels for stabilization methods. Check dams may be used in combination with stone outlet sediment traps, where the check dams prevent erosion of the swale while the sediment trap captures sediment at the downstream end of the swale.

2.1.2 Applications

Check dams are typically used in swales and drainage ditches along linear projects such as roadways. They can also be used in short swales down a steep slope, such as swales down a highway embankment, to reduce velocities. Check dams shall not be used in live stream channels.

Check dams should be installed before the contributing drainage area is disturbed, so as to mitigate the effects on the swale from the increase in runoff. If the swale itself is graded as part of the construction activities, check dams are installed immediately upon completion of grading to control velocities in the swale until stabilization is completed.

2.1.3 Design Criteria

General Criteria

- Typically, the dam height should be between 9 inches and 36 inches, depending on the material of which they are made. The height of the check dam shall always be less than one-third the depth of the channel.
- Dams should be spaced such that the top of the downstream dam is at the same elevation as the toe of the upstream dam. On channel grades flatter than 0.4 percent, check dams should be placed at a distance that allows small pools to form between each check dam.
- The top of the side of the check dam shall be a minimum of 12 inches higher than the middle of the dam. In addition, the side of the dams shall be embedded a minimum of 18 inches into the side of the drainage ditch, swale or channel to minimize the potential for flows to erode around the side of the dam.
- Larger flows (greater than 2-year, 24-hour design storm) must pass the check dam without causing excessive upstream flooding.
- Check dams should be used in conjunction with other sediment reduction techniques prior to releasing flow offsite.
- Use geotextile filter fabric under check dams of 12 inches in height or greater. The fabric shall meet the following minimum criteria:
 - Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 250-lbs.
 - Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 135-lbs.
 - Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 420-psi.
 - Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 20 (max).
- Loose, unconfined soil, wood chips, compost, and other material that can float or be transported by runoff shall not be used to construct check dams.

Rock Check Dams

- Stone shall be well graded with stone size ranging from 3 to 6 inches in diameter for a check dam height of 24 inches or less. The stone size range for check dams greater than 24 inches is 4 to 8 inches in diameter.
- Rock check dams shall have a minimum top width of 2 feet with side slopes of 2:1 or flatter.

Rock Bag Check Dams

- Rock bag check dams should have a minimum top width of 16 inches.
- Bag length shall be 24 inches to 30 inches, width shall be 16 inches to 18 inches and thickness shall be 6 inches to 8 inches and having a minimum weight of 40 pounds.
- Minimum rock bag dam height of 12 inches would consist of one row of bags stacked on top of two rows of bag. The dam shall always be one more row wide than it is high, stacked pyramid fashion.
- Bags should be filled with pea gravel, filter stone, or aggregate that is clean and free of deleterious material.
- Sand bags shall not be used for check dams, due to their propensity to break and release sand that is transported by the concentrated flow in the drainage swale or ditch.
- Bag material shall be polypropylene, polyethylene, polyamide or cotton burlap woven fabric, minimum unit weight 4-ounces-per-square-yard, Mullen burst strength exceeding 300-psi as determined by ASTM D3786, Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, and ultraviolet stability exceeding 70 percent.
- PVC pipes may be installed through the dam to allow for controlled flow through the dam. Pipe should be schedule 40 or heavier polyvinyl chloride (PVC) having a nominal internal diameter of 2 inches.

Sack Gabion Check Dams

- Sack gabion check dams may be used in channels with a contributing drainage area of 5 acres or less.
- Sack gabions shall be wrapped in galvanized steel, woven wire mesh. The wire shall be 20 gauge with 1 inch diameter, hexagonal openings.
- Wire mesh shall be one piece, wrapped around the rock, and secured to itself on the downstream side using wire ties or hog rings.
- Sack gabions shall be staked with $\frac{3}{4}$ inch rebar at a maximum spacing of three feet. Each wire sack shall have a minimum of two stakes.
- Stone shall be well graded with a minimum size range from 3 to 6 inches in diameter.

Organic Filter Tube Check Dams

- Organic filter tubes may be used as check dams in channels with a contributing drainage area of 5 acres or less.
- Organic filter tubes shall be a minimum of 12 inches in diameter.
- Filter material used within tubes to construct check dams shall be limited to coir, straw, aspen fiber and other organic material with high cellulose content. The material should be slow to decay or leach nutrients in standing water.
- Staking of filter tubes shall be at a maximum of 4 foot spacing and shall alternate through the tube and on the downstream face of the tube.
- Unless superseded by requirements in this section, filter tubes and filter material shall comply with the

criteria in *Section 3.6 Organic Filter Tubes*.

2.1.4 *Design Guidance and Specifications*

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.9 Check Dam (Rock). Specifications are also available in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004), Item 506.2.A and Item 506.4.C.1.

2.1.5 *Inspection and Maintenance Requirements*

Check dams should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Silt must be removed when it reaches approximately 1/3 the height of the dam or 12 inches, whichever is less. Inspectors should monitor the edges of the dam where it meets the sides of the drainage ditch, swale or channel for evidence of erosion due to bypass or high flows. Eroded areas shall be repaired. If erosion continues to be a problem, modifications to the check dam or additional controls are needed.

Care must be used when taking out rock check dams in order to remove as much rock as possible. Loose rock can create an extreme hazard during mowing operations once the area has been stabilized.

2.1.6 *Example Schematics*

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be adapted for the site by the designer. Dimensions and notes appropriate for the application must also be added by the designer.

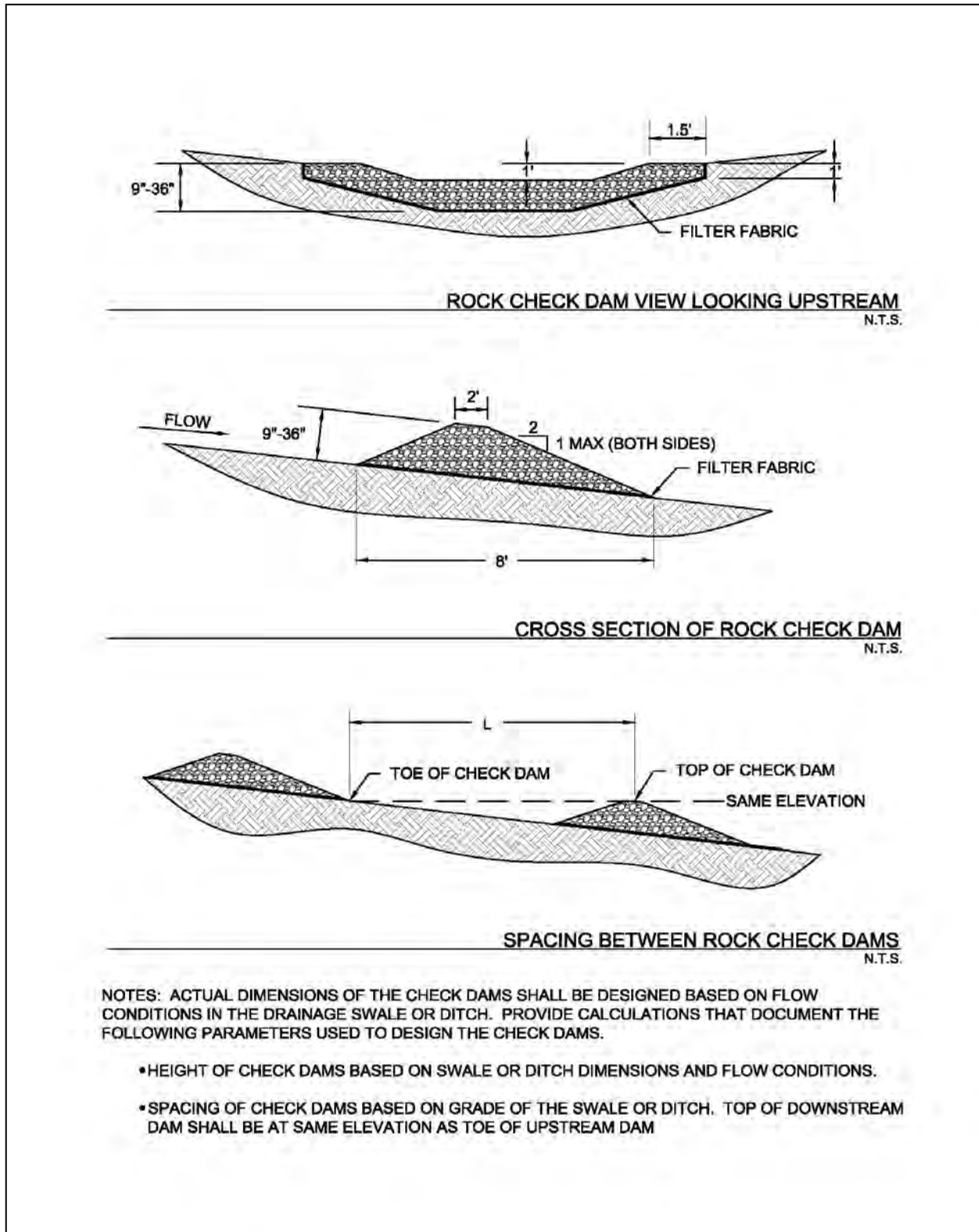


Figure 2.1 Schematics of Rock Check Dams

(Source: Modified from Stormwater Management Manual for Western Washington)

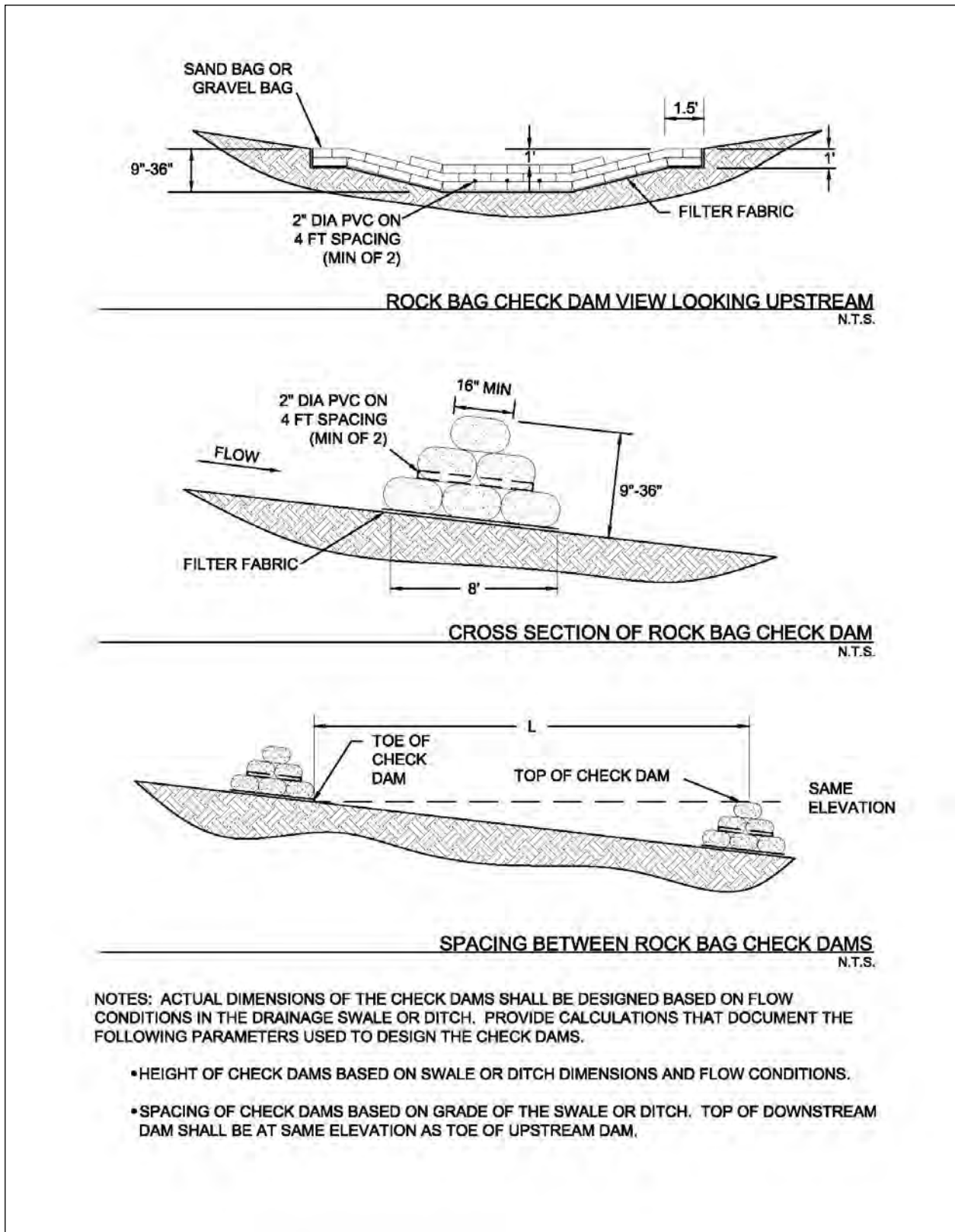


Figure 2.2 Schematics of Rock Bag Check Dams

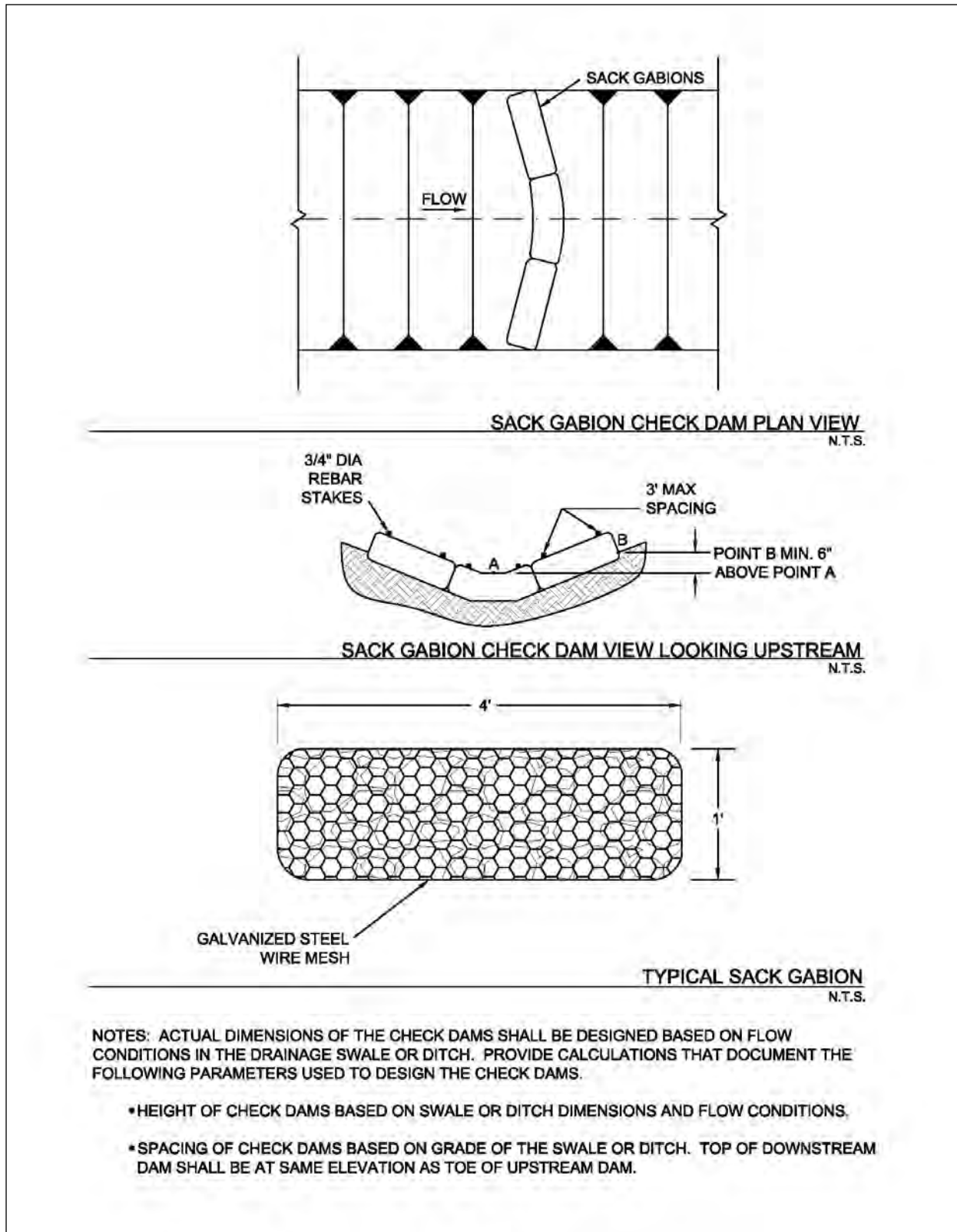


Figure 2.3 Schematics of Sack Gabion Check Dams
 (Source: Modified from Texas Department of Transportation Detail Sheet EC (2)-93)

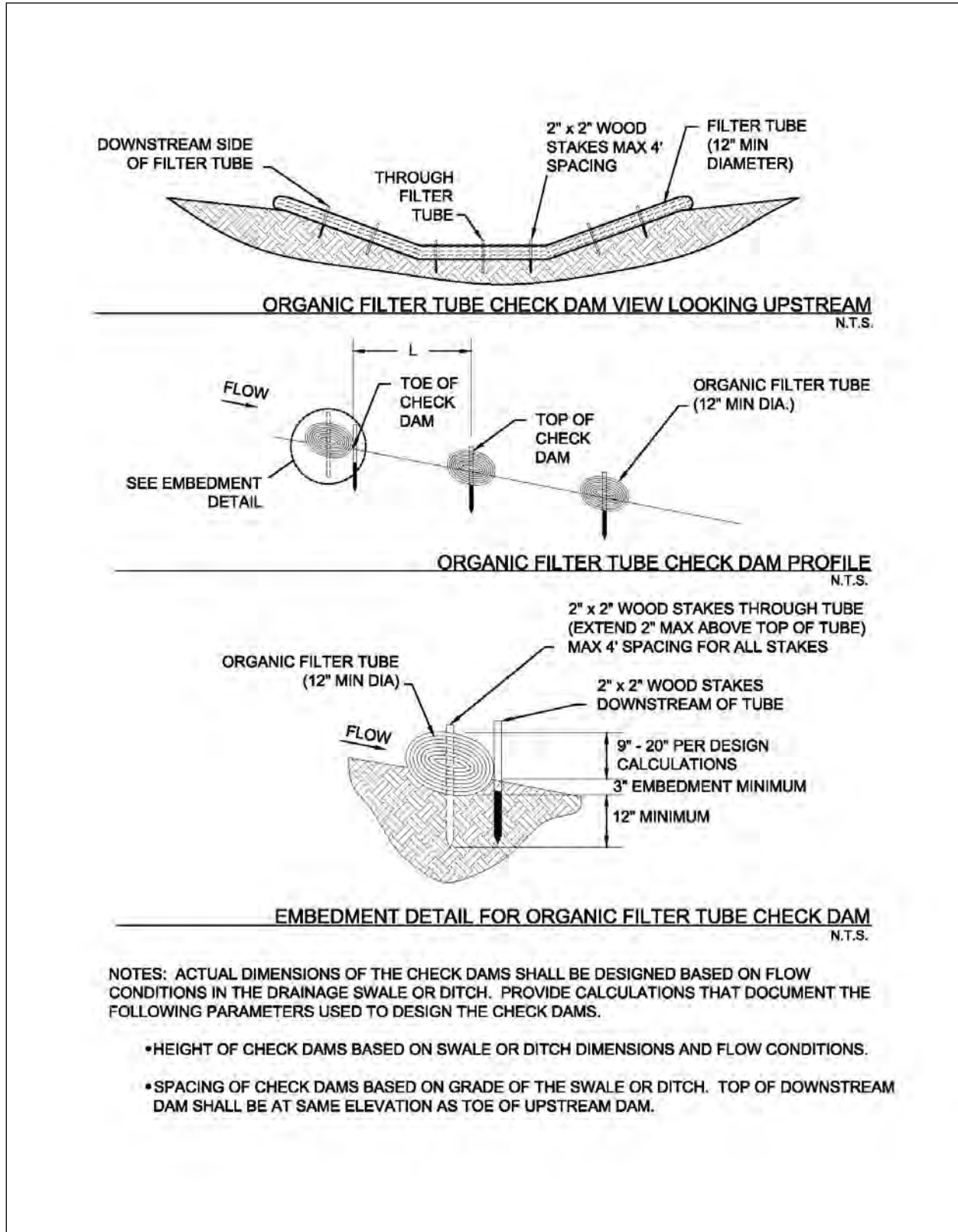
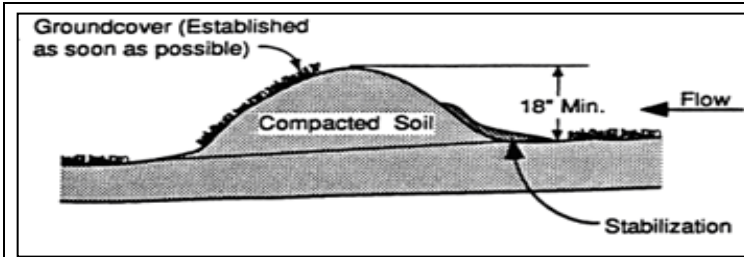


Figure 2.4 Schematics of Organic Filter Tube Check Dams

(Source: Modified from City of Plano BMP S-7)

2.2 Diversion Dike

Erosion Control



Description: A diversion dike is a compacted soil mound, which redirects runoff to a desired location. The dike is typically stabilized with natural grass for low velocities or with stone or erosion control mats for higher velocities.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Maximum 1 foot flow depth at the dike for a 2-year return period design storm peak flow
- Side slopes 3:1 or flatter
- Minimum 2 feet top width
- Minimum embankment height of 18 inches measured from toe of slope on upgrade side
- Maximum contributing drainage area of 5 acres or less

ADVANTAGES / BENEFITS:

- Easy to install during early grading operations
- Very effective in reducing erosion at a reasonable cost
- Can be used in combination with an interceptor swale

DISADVANTAGES / LIMITATIONS:

- Must be stabilized immediately after placement or the dike will become a sediment source
- Can be a hindrance to construction equipment moving on the site

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Remove silt
- Repair erosion on the face of the dike
- Provide additional stabilization if erosion occurs

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.95

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- None

2.2.1 Primary Use

The primary use of diversion dikes is to prevent erosion by diverting runoff away from steep slopes and disturbed areas. The diversion dike is normally used to intercept offsite flow upstream of the construction area and direct the flow around the disturbed soils. It can also be used downstream of the construction area to direct flow into a sediment control, such as a sediment basin or protected inlet. The diversion dike serves the same purpose as an interceptor swale and, based on the topography of the site, can be used in combination with an interceptor swale.

2.2.2 Applications

By intercepting runoff before it has the chance to cause erosion, diversion dikes are very effective in reducing erosion at a reasonable cost. They are applicable to a large variety of projects including site developments and linear projects, such as roadways and pipeline construction. Diversion dikes are normally used as upslope perimeter controls for construction sites with large amounts of offsite flow that needs to be re-directed around the construction site. They can also be used as a downslope perimeter control to direct runoff from the disturbed area to a sediment control.

Used in combination with swales, the diversion dike can be quickly installed with a minimum of equipment and cost, using the swale excavation material to construct the dike. No sediment removal technique is required if the dike is properly stabilized and the runoff is intercepted prior to crossing disturbed areas.

Significant savings in sediment controls can be realized by using diversion dikes to direct sheet flow from disturbed areas to a central sediment control, such as a sediment basin or other sediment trap, instead of installing a series of high-maintenance linear controls. Dikes can also be used to direct runoff from disturbed areas to a filtration device, passive treatment system, or active treatment system when these are necessary to attain required levels of sediment removal.

2.2.3 Design Criteria

- The maximum contributing drainage area should be 5 acres or less depending on site conditions.
- Maximum depth of flow at the dike shall be 1 foot based on a 2-year return period design storm peak flow.
- Side slopes of the diversion dike shall be 3:1 or flatter.
- Side slopes of the diversion dike may be 2:1 for dike installations to be used less than 3 months, if the dike is within an area protected by perimeter controls.
- Minimum width at the top of the dike shall be 2 feet.
- Minimum embankment height shall be 18 inches as measured from the toe of slope on the upgrade side of the berm.
- For grades less than 2 percent and velocities less than 6 feet per second, the minimum required channel stabilization shall be grass, erosion control blankets, or anchored mulch. For grades in excess of 2 percent or velocities exceeding 6 feet per second, stabilization is required in the form of turf reinforcement mats (or riprap with appropriate size, gradation, and thickness depending on flow conditions). Velocities greater than 8 feet per second will require approval by the local municipality and is discouraged.
- Refer to [Section 2.9 Vegetation](#) for design criteria and guidance on establishing vegetation in the swale.
- The dikes shall remain in place until all disturbed areas that are protected by the dike are permanently stabilized unless other controls are put into place to protect the disturbed area.
- The flow line at the dike shall have a positive grade to drain to a controlled outlet.

- Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment-trapping device.
- The soil for the dike shall be placed in lifts of 8 inches or less and be compacted to 95 percent standard proctor density using ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
- Soil used in construction of the dike can be onsite material. It should be free of rocks larger than three inches in diameter and should be clay, silty clay or sandy clay with a plasticity index greater than 25. If only low PI material is available, it will be necessary to armor the slopes with stone or geotextile to prevent erosion of the dike.
- An interceptor swale may be installed on the upslope side of the diversion dike. Refer to [Section 2.4 Interceptor Swale](#) for swale design criteria.

2.2.4 Design Guidance and Specifications

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.7 Diversion Dike.

2.2.5 Inspection and Maintenance Requirements

Dikes should be inspected regularly (at least as often as required by the TPDES Construction General Permit) to determine if silt is building up behind the dike or if erosion is occurring on the face of the dike. Silt shall be removed in a timely manner. If erosion is occurring on the face of the dike, the face of the slopes shall either be stabilized with mulch or seeding or the slopes shall be flattened.

2.2.6 Example Schematics

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

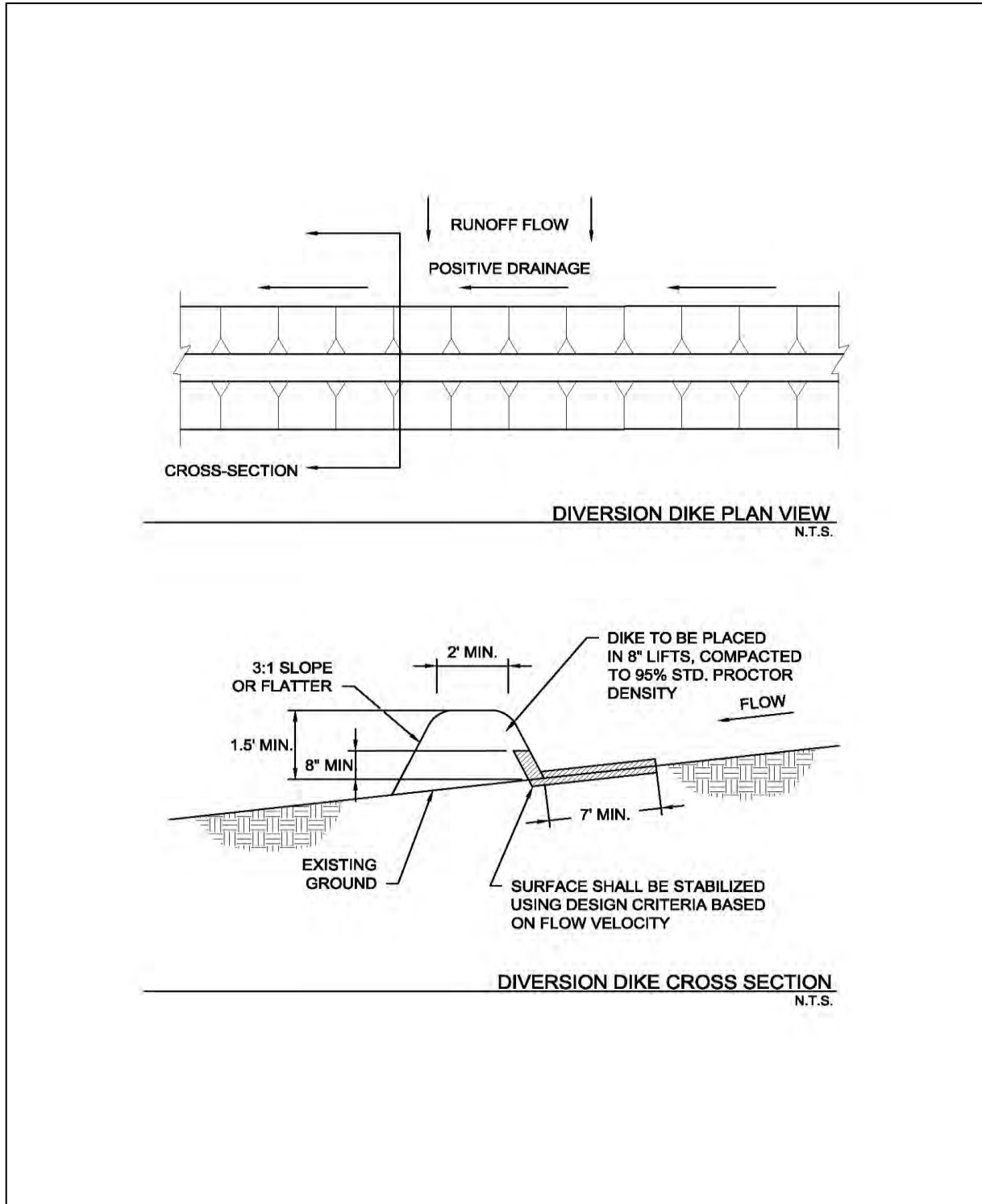


Figure 2.5 Schematics of Diversion Dike

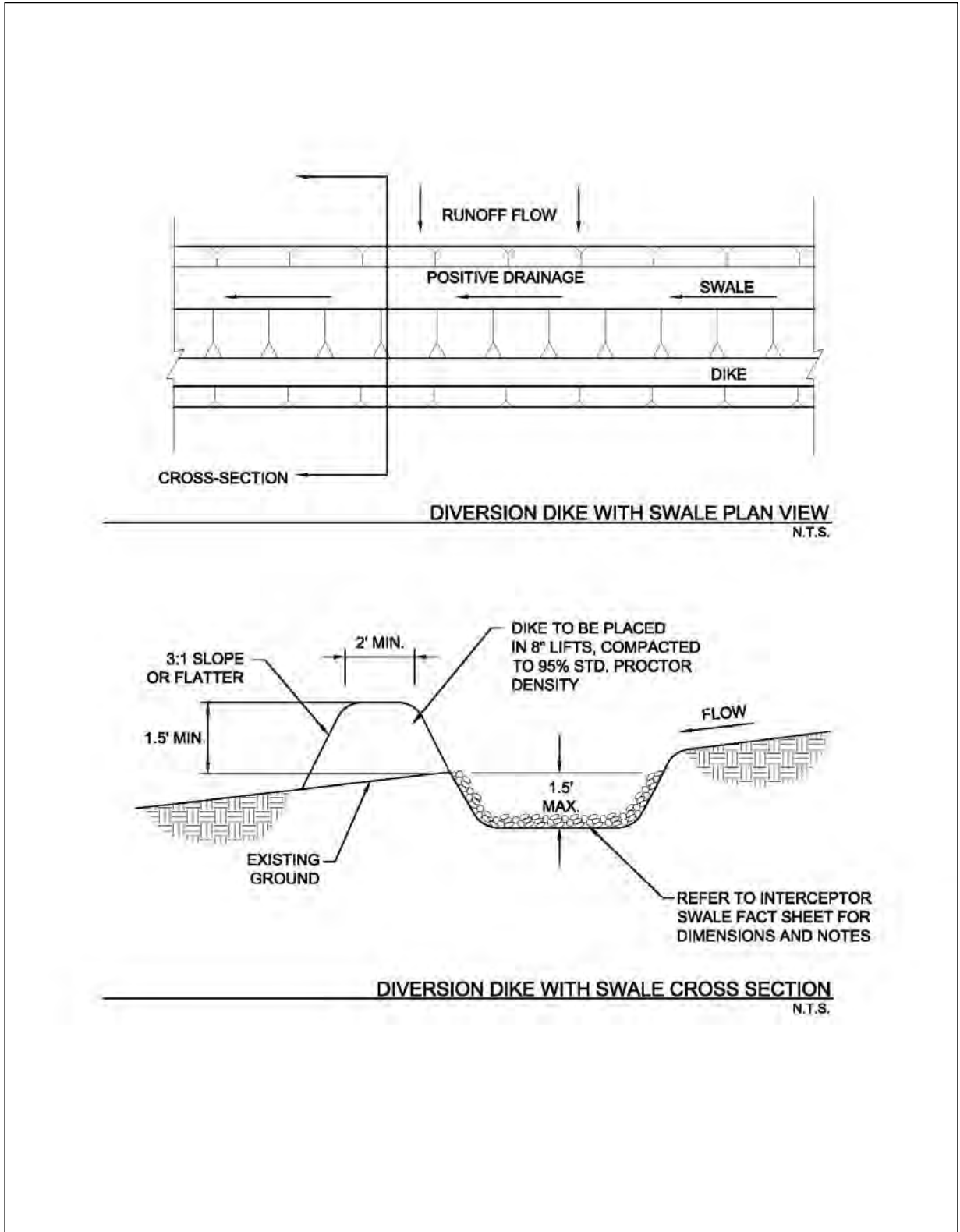
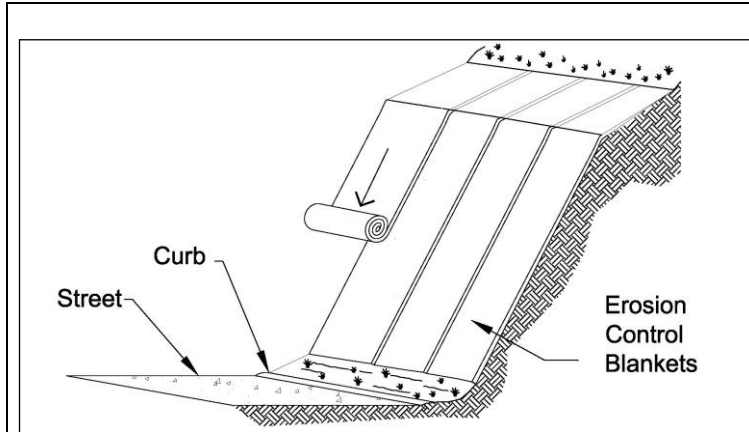


Figure 2.6 Schematics of Diversion Dike with Swale

2.3 Erosion Control Blankets

Erosion Control



Description: An erosion control blanket (ECB) is a temporary, degradable, rolled erosion control product that reduces soil erosion and assists in the establishment and growth of vegetation. ECBs, also known as soil retention blankets, are manufactured by many companies and are composed primarily of processed, natural, organic materials that are woven, glued, or structurally bound together with natural fiber netting or mesh on one or both sides.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- ECB selected based on slope, flow rate and length of service
- Specify preparation of soil surface to ensure uniform contact with blanket
- Installation and anchoring according to manufacturer's recommendations

ADVANTAGES / BENEFITS:

- Holds seed and soil in place until vegetation is established
- Effective for slopes, embankments and small channels

DISADVANTAGES / LIMITATIONS:

- Not for use on slopes greater than 2:1 or in channels with shear stresses greater than 2.0 pounds per square foot

MAINTENANCE REQUIREMENTS:

- Replace or re-anchor loosened blankets
- Remove sediment deposited on blankets

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Waste

APPLICATIONS

Perimeter Control
Slope Protection
Sediment Barrier
Channel Protection
Temporary Stabilization
Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.90 (*Ground cover*)

Fe=0.65

(*Perimeter w/o vegetation*)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Life expectancy, partial degradation, and mowing/maintenance issues for ECBs left in place as part of final stabilization*

2.3.1 Primary Use

Erosion control blankets (ECBs) are used to hold seed and soil in place until vegetation is established on disturbed areas. They can be used on many types of disturbed areas, but are particularly effective for slopes and embankments and in small drainage swales.

ECBs seeded for vegetation may be used as a perimeter control. When used in combination with other sediment barriers, such as silt fence or organic filter tubes, blankets may be used as a perimeter control with or without vegetation.

2.3.2 Applications

ECBs may be used on many types of disturbed areas but are most applicable on gradual to steep (2:1) cut/fill slopes and in swales and channels with low to moderate flow velocities. In these applications they may provide temporary stabilization by themselves or may be used with seeding to provide final stabilization. ECBs are also used to establish vegetation in channels where velocities are less than 6.0 feet per second.

When seeded for establishment of vegetation, ECBs can be an effective perimeter along the down slope side of linear construction projects (roads and utilities). ECBs with vegetation are also used as perimeter controls for new development, particularly at the front on residential lots in new subdivisions. ECBs are an effective aid in establishing vegetated filter strips.

2.3.3 Design Criteria

- The designer shall specify the manufacturer, type of erosion control blanket to be used, and dimensioned limits of installation based on the site topography and drainage.
- The type and class of erosion control blanket must be specified in accordance with the manufacturer's guidance for the slope of the area to be protected, the flow rate (sheet flow on cut/fill slopes) or velocity (concentrated flow in swales) of stormwater runoff in contact with the ECB, and the anticipated length of service.
- ECBs should meet the applicable "Minimum Performance Standards for TxDOT" as published by TxDOT in its "Erosion Control Report" and/or be listed on the most current annual "Approved Products List for TxDOT" applicable to TxDOT Item 169 Soil Retention Blanket and its Special Provisions.
- ECBs shall be installed vertically down slope (across contours) on cut/fill slopes and embankments and along the contours (parallel to flow) in swales and drainage ditches.
- ECBs designed to remain onsite as part of final stabilization shall have netting or mesh only on one side (the exposed side) of the ECB. The ECB shall be installed with the side that does not have netting or mesh in contact with the soil surface. All materials in the ECB, including anchors, should be 100 percent biodegradable within three years.
- On cut/fill slopes and drainage ditches or swales designed to receive erosion control blankets for temporary or final stabilization, installation of the ECBs shall be initiated immediately after completing grading of the slope or drainage way, and in no case later than 14 days after completion of grading these features. Do not delay installation of ECBs on these highly-erodible areas until completion of construction activities and stabilization of the remainder of the site.
- Unless the ECB is seeded to establish vegetation, perimeter control applications shall be limited to thirty foot wide drainage areas (i.e. linear construction projects) for an 8 foot width of ECB. When seeded for vegetation, use of ECBs for perimeter control shall follow the criteria in the [Section 3.15 Vegetated Filter Strips and Buffers](#).
- Prior to the installation of the ECB, all rocks, dirt clods, stumps, roots, trash and any other obstructions that would prevent the ECB from lying in direct contact with the soil shall be removed.

- Anchor trenching shall be located along the top of slope of the installation area, except for small areas with less than 2 percent slope.
- Installation and anchoring shall conform to the recommendations shown within the manufacturer's published literature for the erosion control blanket. Anchors (staples) shall be a minimum of 6 inches in length and 1 inch wide. They shall be made of 11-gauge wire, or equivalent, unless the ECB is intended to remain in place with final stabilization and biodegrade.
- Particular attention must be paid to joints and overlapping material. Overlap along the sides and at the ends of ECBs should be per the manufacturer's recommendations for site conditions and the type of ECB being installed. At a minimum, the end of each roll of ECB shall overlap the next roll by 3 feet and the sides of rolls shall overlap 4 inches.
- After installation, the blankets should be checked for uniform contact with the soil, security of the lap joints, and flushness of the staples with the ground.
- When ECBs are installed to assist with establishing vegetation, seeding shall be completed before installation of the ECB. Criteria for seeding are provided in [Section 2.9 Vegetation](#).
- Turf Reinforcement Mats should be used instead of ECBs for permanent erosion control and for stabilizing slopes greater than 2:1.
- ECBs are limited to use in swales and channels that have shear stresses of less than 2.0 pounds per square foot. Turf reinforcement mats shall be used in open channels with higher shear stresses.

2.3.4 Design Guidance and Specifications

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.15 Erosion Control Blankets and in Item 169 of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT, 2004).

2.3.5 Inspection and Maintenance Requirements

Erosion control blankets should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for bare spots caused by weather or other events. Missing or loosened blankets must be replaced or re-anchored.

Check for excess sediment deposited from runoff. Remove sediment and/or replace blanket as necessary. In addition, determine the source of excess sediment and implement appropriate measures to control the erosion. Also check for rill erosion developing under the blankets. If found, repair the eroded area. Determine the source of water causing the erosion and add controls to prevent its reoccurrence.

2.3.6 Example Schematics

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. The designer is responsible for working with ECB manufacturers to ensure the proper ECB is specified based on the site topography and drainage. Installation measures should be dictated by the ECB manufacturer and are dependent on the type of ECB installed. Manufacturer's recommendations for overlap, anchoring, and stapling shall always be followed. Criteria shown here are applicable only when they are more stringent than those provided by the manufacturer.

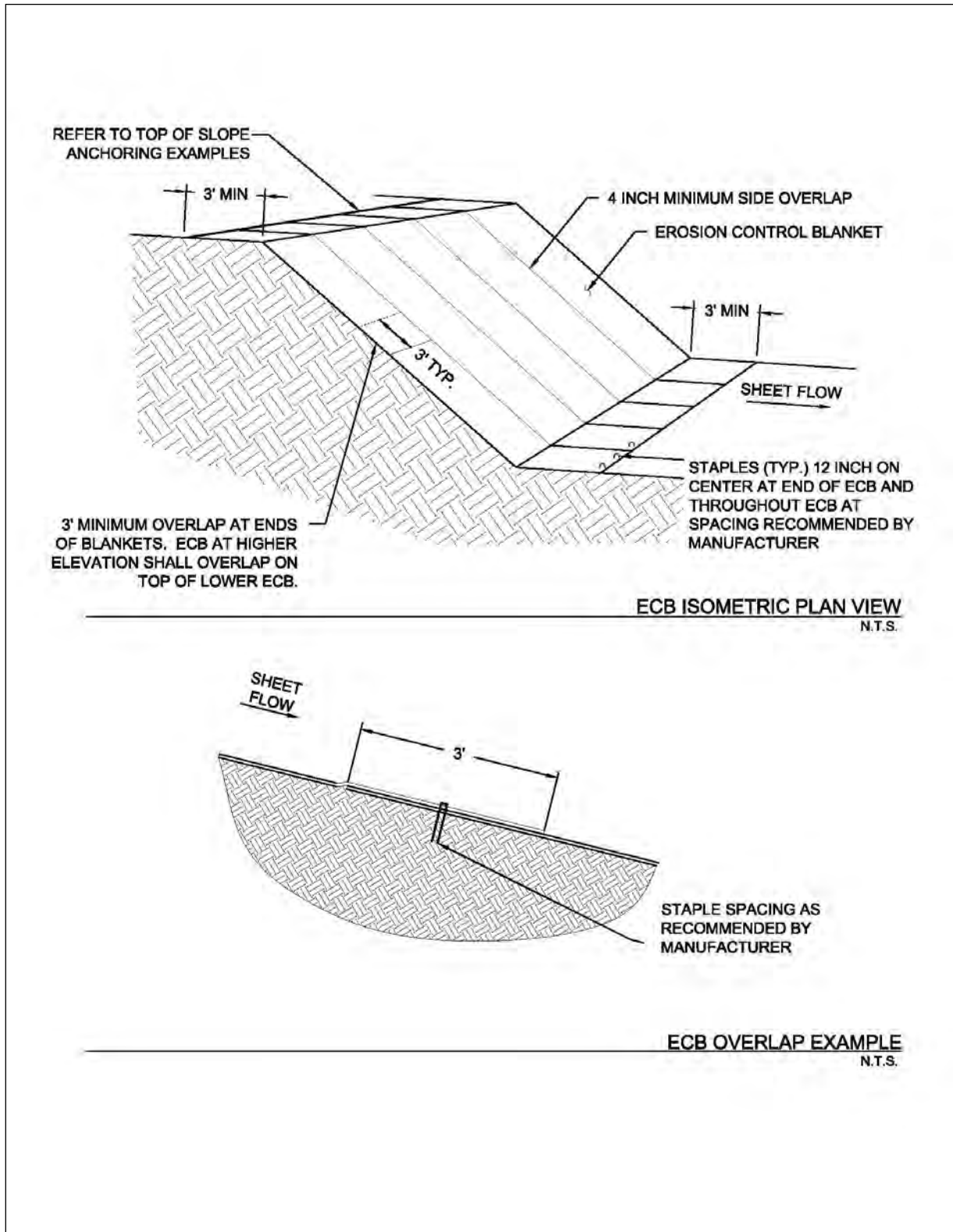


Figure 2.7 Schematics of Erosion Control Blankets

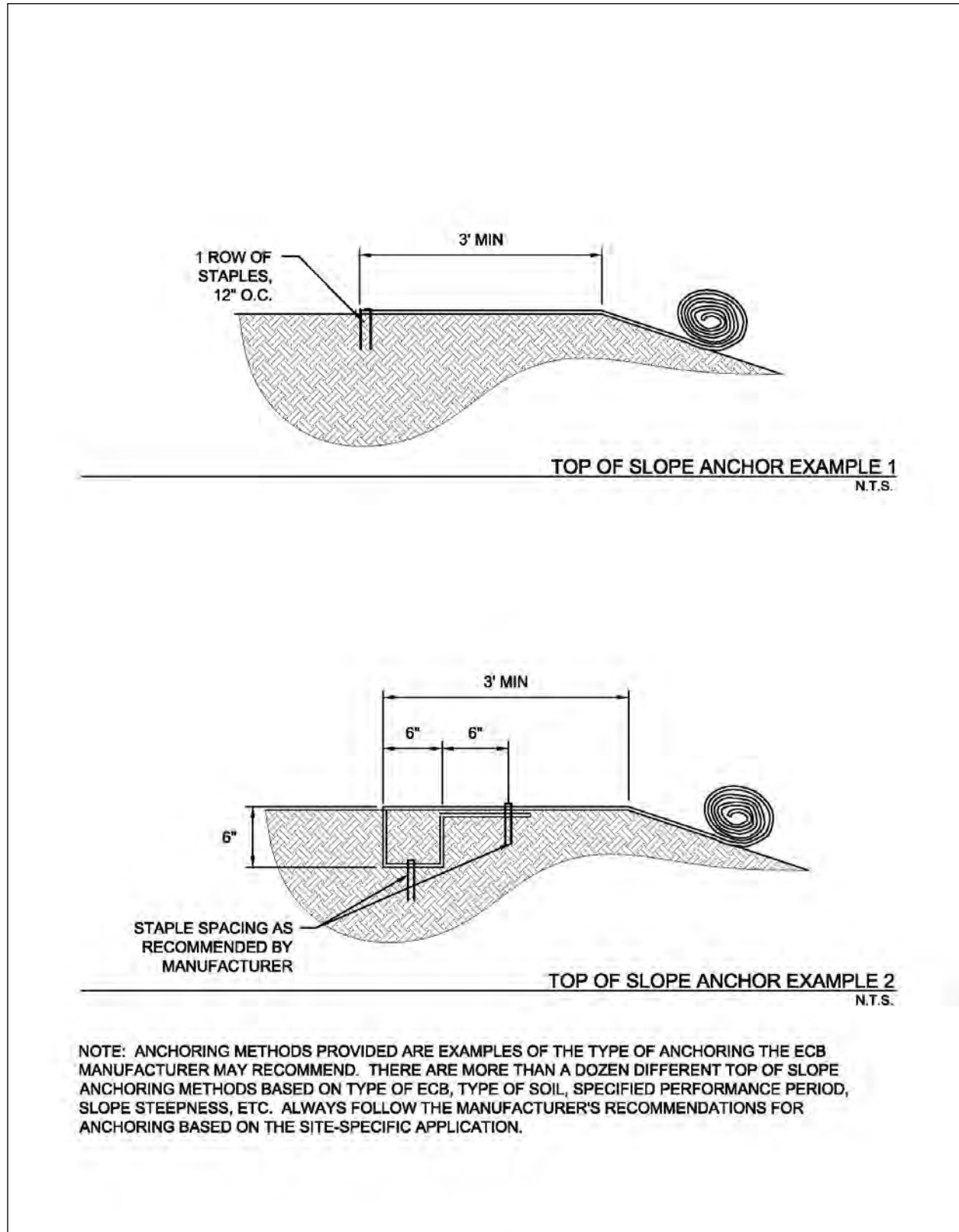
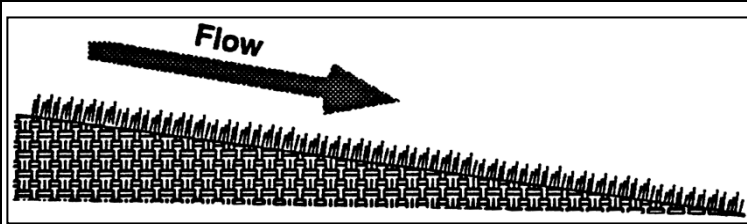


Figure 2.8 Anchor Examples for Erosion Control Blankets

(Sources: American Excelsior Company and Western Excelsior Corporation)

2.9 Vegetation

Erosion Control



Description: Vegetation, used as an erosion control, is the sowing or sodding of grasses, small grains, or legumes to provide temporary and final vegetative stabilization for disturbed areas.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Specify preparation of the soil surface before seeding or sodding
- Minimum of 4 to 6 inches of top soil required, depending on subsurface conditions
- Specify soil amendments depending on soil conditions
- Select seed or sod species appropriate for the climate, season, and soil

ADVANTAGES / BENEFITS:

- More effective and easier to maintain than sediment controls during a long construction period
- May be used for temporary or final stabilization

DISADVANTAGES / LIMITATIONS:

- Not appropriate for areas with heavy pedestrian, vehicular traffic, or concentrated, high velocity flow
- May require days to weeks for adequate establishment
- Alternate erosion control is needed until vegetation is established

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Protect newly seeded areas from excessive runoff, high velocity flow, and traffic until vegetation is established
- Water and fertilize until vegetation is established
- Reseed and/or provide mulch or another control for bare spots
- Rake accumulations of sediment from the vegetation

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.90

(When fully established; lower while vegetation is first growing)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Design is unique to soil and other conditions at each site*
- *Watering and other maintenance required until vegetation is established*

2.9.1 Primary Use

Vegetation is used as a temporary or final stabilization measure for areas disturbed by construction. As a temporary control, vegetation is used to stabilize stockpiles, earthen dikes, and barren areas that are inactive for longer than two weeks. As a final control at the end of construction, grasses and other vegetation provide good protection from erosion along with some filtering for overland runoff. Subjected to acceptable runoff velocities, vegetation can provide a positive method of long-term stormwater management as well as a visual amenity to the site.

Other control measures may be required to assist during the establishment of vegetation. These other controls include erosion control blankets, mulching, swales, and dikes to direct flow around newly seeded areas and proper grading to limit runoff velocities during construction.

2.9.2 Applications

Vegetation effectively reduces erosion in channels and swales and on stockpiles, dikes, and mild to medium slopes. Vegetative strips can provide some protection and sediment trapping when used as a perimeter control for utility and site development construction. Refer to [Section 3.15 Vegetated Filter Strips and Buffers](#) for more information.

In many cases, the initial cost of temporary seeding may be high compared to tarps or covers for stockpiles or other barren areas subject to erosion. This initial cost should be weighed with the amount of time the area is to remain inactive, since vegetation is more effective and the maintenance cost for vegetated areas is much less than most structural controls.

2.9.3 Design Criteria

General

- Vegetation is a highly effective erosion control when the vegetation is fully established. Until then, additional controls are needed. Sediment controls should not be removed from vegetated areas until the vegetation is established.
- On grades steeper than 20:1 (5 percent), anchored mulch or erosion control blankets are required to protect seeded areas until vegetation is established. Refer to [Section 2.5 Mulching](#) and [Section 2.3 Erosion Control Blankets](#) for design criteria.
- Vegetation may be used by itself for channel protection when the channel grade is less than 2 percent and the temporary control design storm (2-year, 24-hour) and the conveyance storm (25-year, 24-hour) flow velocities are less than 6 feet per second.
- If the velocity of the temporary control design storm is greater than 2 feet per second, erosion control blankets shall be used in the channel while vegetation is being established. Turf reinforcement mats are required when the velocity exceeds 6 feet per second. Refer to [Section 2.3 Erosion Control Blankets](#) and [Section 2.8 Turf Reinforcement Mats](#) for design criteria.
- Stabilization of channels with vegetation is limited to channels that have side slopes of 3:1 or flatter.
- On cut/fill slopes and channels designed to receive temporary or final vegetation, establishment of vegetation shall be initiated immediately after completing grading of the cut/fill slope or channel, and in no case later than 14 days after completion of grading on these features. It is not acceptable to delay establishing vegetation on these highly-erodible areas until completion of construction activities and stabilization of the remainder of the site.

Surface Preparation

- Unless infeasible, remove and stockpile existing topsoil at the start of grading activities. Store topsoil in a series of small stockpiles instead of one large stockpile to decrease the loss of aerobic soil micro-organisms during stockpiling.

- Interim or final grading must be completed prior to seeding or sodding.
- To minimize soil compaction of areas to be vegetated, limit vehicle and equipment traffic in these areas to the minimum necessary to accomplish grading.
- Install all necessary erosion structures such as dikes, swales, diversions, etc. prior to seeding or sodding.
- Spread stockpiled topsoil evenly over the disturbed area to be vegetated.
- Depth of topsoil shall be a minimum of 4 inches, with 6 inches required where the topsoil is over rock, gravel or otherwise unsuitable material for root growth. After spreading stockpiled topsoil, provide additional top soil as needed to achieve these depths.
- Compost Manufactured Topsoil as specified in TxDOT Special Specification 1001 may be used to achieve the specified depths or when it's infeasible to stockpile topsoil. Topsoil may also be acquired from another construction site if there is no space to stockpile the topsoil at that site.
- Topsoil shall have an organic content of 10 to 20 percent using ASTM D2974 Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
- Topsoil that does not meet the organic content requirement shall be amended with General Use Compost as specified in TxDOT Special Specification 1001. Amendment should be three parts of topsoil to one part compost by volume thoroughly blended.
- Seed bed should be well pulverized and loosened to a minimum depth of 3 inches and then raked to have a uniform surface.
- When establishing vegetation from seed, groove or furrow slopes steeper than 3:1 on the contour line before seeding.

Plant Selection, Fertilization and Seeding

- Use only high quality, USDA certified seed.
- Use an appropriate species or species mixture adapted to the local climate, onsite soil conditions and the season as shown below, or consult with the local office of the Natural Resource Conservation Service (NRCS) or Texas AgriLife Extension Service for selection of proper species and application technique in this area.
- Seeding rate should be in accordance with the Tables 2.4, 2.5 and 2.6 as follow in this section or as recommended by the Natural Resources Conservation Service (NRCS) or Texas AgriLife Extension Service.
- Chemical fertilization is not recommended at the time of seeding, because it typically stimulates and is consumed by fast growing weeds that out-compete the slower growing grasses and legumes. If the topsoil has not been amended by compost as discussed above, an 0.5 inch layer of General Use Compost (TxDOT Special Specification 1001) is recommended as a surface treatment to protect the seed and provide slow release nutrients
- Evenly apply seed using a seed drill, cultipacker, terraseeding, or hydroseeder.
- Hydro-seeding should not be used on slopes of 5:1 or steeper unless Bonded Fiber Matrix is used.
- Seeded areas shall be thoroughly watered immediately after planting. Water shall be applied at a rate that moistens the top 6 inches of soil without causing runoff. Provide water daily for the first 14 days after seeding and thereafter as needed to aid in establishment of vegetation.
- Use appropriate mulching techniques ([Section 2.5 Mulching](#)) where necessary, especially during cold periods of the year. Mulch consisting of chipped site vegetation is discouraged, since the wood content may result in depleting nitrogen from the soil.

Sodding

- Use of sod should be limited to planned landscapes due to the relatively high water use of most types of sod grass.
- When sod is necessary to achieve immediate stabilization, buffalograss (*Buchloe dactyloides*) is recommended. Other types of sod may be used in landscaping when specified by a landscape architect for a commercial property or a homebuyer for a residential lot.
- The sod should be mowed prior to sod cutting so that the height of the grass shall not exceed 3 inches and should not be harvested or planted when its moisture condition is so excessively wet or dry that its survival shall be affected.
- Sod shall have a healthy, virile, system of dense, thickly matted roots throughout a minimum soil thickness of 0.75 inch.
- Sod shall be planted within 3 days after it is excavated.
- In areas subject to direct sunlight, pre-moisten prepared sod bed by watering immediately prior to placing sod.
- Sodded areas shall be thoroughly watered immediately after they are planted.

Temporary Vegetation

The following table lists recommended plant species for the North Central Texas region depending on the season for planting.

Season	Common Name	Pure Live Seed Rate (Lbs/Acre)
Sep 1 - Nov 30	Tall Fescue	4.5
	Western Wheat Grass	5.6
	Wheat (Red, Winter)	34.0
May 1 - Aug 31	Foxtail Millet	34.0
Feb 15 – May 31 Sep 1 – Dec 31	Annual Rye	20.0

Areas receiving temporary seeding and vegetation shall be landscaped, re-seeded or sodded with perennial species to establish final vegetation at the end of construction.

Vegetation for Final Stabilization

Sodding or seeding may be used to establish vegetation for final stabilization of areas disturbed by construction activity. The vegetation must achieve a cover that is 70 percent of the native background vegetative cover to be considered final stabilization. Sod will achieve this coverage quicker than seeding; however, sod is usually more expensive than seeding. Sod is most cost-effective for small areas or areas of concentrated flow or heavy pedestrian traffic where it will be difficult to establish vegetation by seeding.

Grass seed for establishing final stabilization can be sown at the same time as seeding for temporary (annual) vegetation. Drought tolerant native vegetation is recommended rather than exotics as a long-term water conservation measure. Native grasses can be planted as seed or placed as sod. Buffalo 609, for example, is a hybrid grass that is placed as sod. Fertilizers are not normally used to establish native grasses, but mulching is effective in retaining soil moisture for the native plants.

County	Planting Date	Clay Soils		Sandy Soils	
		Species and Pure Live Seed Rate (Lbs/Acre)		Species and Pure Live Seed Rate (Lbs/Acre)	
Erath Hood Johnson Palo Pinto Parker Somervell Tarrant Wise	February 1 – May 15	Green Sprangletop Sideoats Grama (El Reno) Bermudagrass Little Bluestem (Native) Blue Grama (Hachita) Illinois Bundleflower	0.3 2.7 0.9 1.0 0.9 1.0	Green Sprangletop Sand Lovegrass Bermudagrass Weeping Lovegrass (Ermelo) Sand Dropseed Partridge Pea	0.3 0.5 1.8 0.8 0.4 1.0
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop Bermudagrass Sideoats Grama (El Reno) Little Bluestem (Native) Buffalograss (Texoka) Illinois Bundleflower	0.3 1.2 2.7 2.0 1.6 1.0	Green Sprangletop Bermudagrass Weeping Lovegrass (Ermelo) Sand Lovegrass Sand Dropseed Partridge Pea	0.3 1.8 0.6 0.6 0.4 1.0
Hunt	February 1 – May 15	Green Sprangletop Sideoats Grama (El Reno) Bermudagrass Little Bluestem (Native) Illinois Bundleflower	0.3 3.2 1.8 1.7 1.0	Green Sprangletop Bermudagrass Bahagrass (Pensacola) Sand Lovegrass Weeping Lovegrass (Ermelo) Partridge Pea	0.3 1.5 6.0 0.6 0.8 1.0

(Source: TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, Item 164)

County	Planting Date	Clay Soils		Sandy Soils	
		Species and Pure Live Seed Rate (Lbs/Acre)		Species and Pure Live Seed Rate (Lbs/Acre)	
Erath Hood Johnson Palo Pinto Parker Somervell Tarrant Wise	February 1 – May 15	Green Sprangletop Sideoats Grama (El Reno) Bermudagrass Buffalograss (Texoka)	0.3 3.6 2.4 1.6	Green Sprangletop Sideoats Grama (El Reno) Bermudagrass Sand Dropseed	0.3 3.6 2.1 0.3
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop Sideoats Grama (El Reno) Buffalograss (Texoka) Bermudagrass	0.3 3.6 1.6 2.4	Green Sprangletop Buffalograss (Texoka) Bermudagrass Sand Dropseed	0.3 1.6 3.6 0.4
Hunt	February 1 – May 15	Green Sprangletop Bermudagrass Sideoats Grama (Haskell)	0.3 2.4 4.5	Green Sprangletop Bermudagrass	0.3 5.4

(Source: TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, Item 164)

Vegetation for final stabilization of channels requires grasses that are tolerant of periodic inundation, such as Bermuda grass, Kentucky bluegrass or a grass-legume mixture.

Additional Considerations

- Conditions for establishing vegetation vary significantly from site to site. Therefore, specifics of the vegetation design should be prepared based on the soil, slopes, drainage patterns, and the purpose of the vegetation at a each site.
- For construction activities that include landscaping in the development plans, the landscape architect should be consulted when specifying vegetation for temporary or final stabilization of disturbed areas.
- Vegetation is easier to establish if equipment and vehicle traffic is managed onsite to minimize soil compaction by traffic in the disturbed area that will be vegetated.
- Establishing a good vegetative cover is dependent on the season of the year. Projects that commence in the fall of the year may not be candidates for using vegetation as an erosion control.
- Where vegetation is used in swales and channels it may be necessary to use sod, rather than seeding, to establish an erosion resistant surface that accommodates rainfall runoff flows.
- Mulch should be used to enhance vegetative growth, in that mulch protects seeds from heat, prevents soil moisture loss, and provides erosion protection until the vegetation is established. Compost mulch has the additional benefit of providing some slow-release nutrients.
- Fertilizers have both beneficial and adverse effects. Fertilizers provide nutrients to the vegetation, but fertilizers are also a source of unwanted nutrients in streams and lakes. In this latter regard, they are a pollutant. The use of native vegetation rather than exotics reduces the need for fertilizers. Organic fertilizers, such as compost mulch, are generally preferred over chemical fertilizers. They provide a slow release of nutrients over a longer period of time and are less likely to cause environmental problems.
- Steep slopes represent a problem for establishing vegetation. Hydraulic mulches are useful for establishing vegetation on slopes. Refer to [Section 2.5 Mulching](#).

2.9.4 Design Guidance and Specifications

Additional criteria for the application of vegetation in channels are in [Section 3.6.3 of the iSWM Criteria Manual](#) and design guidance is in [Section 3.2 of the Hydraulics Technical Manual](#).

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Item 202 Landscaping. Additional specifications for the following components of this item are in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004):

- Topsoil, Item 160.
- Compost, Item 161.
- Sodding for Erosion Control, Item 162.
- Seeding for Erosion Control, Item 163.
- Fertilization, Item 164.
- Vegetative Watering 165.

2.9.5 Inspection and Maintenance Requirements

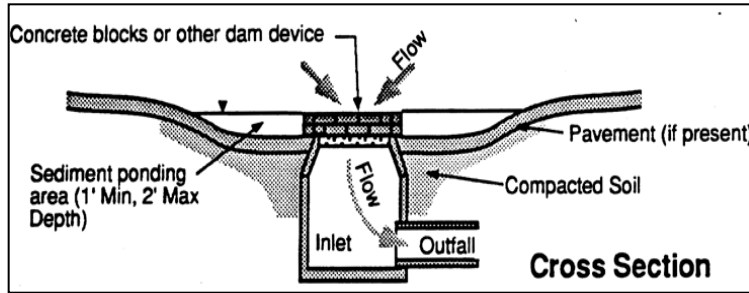
Protect newly seeded areas from excessive runoff and traffic until vegetation is established. Include a watering and fertilizing schedule in the iSWM Construction Plan facilitate the establishment of the vegetation. Vegetation for final stabilization must be maintained until the vegetative cover is 70 percent of the native background vegetative cover.

Vegetation should be inspected regularly (at least as often as required by the TPDES Construction General Permit) to ensure that the plant material is established properly and remains healthy. Bare spots shall be reseeded and/or protected from erosion by mulch or other measures. Accumulated sediment

deposited by runoff should be removed to prevent smothering of the vegetation. In addition, determine the source of excess sediment and implement appropriate measures to control the erosion.

3.4 Inlet Protection

Sediment Control



Description: Inlet protection consists of a variety of methods to intercept sediment at low point inlets through the use of depressed grading, filter stone, filter fabric, inlet inserts, organic filter tubes and other materials. The protection devices are placed around or across the inlet openings to provide localized detention or filtration of sediment and floatable materials in stormwater. Protection devices may be assembled onsite or purchased as manufactured assemblies.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Evaluate drainage patterns to ensure inlet protection will not cause flooding of roadway, property or structures
- Never block entire inlet opening
- Size according to drainage area and flow rates
- Include flow bypass for clogged controls and large storm events

ADVANTAGES / BENEFITS:

- May be the only feasible sediment control when all construction is located within rights-of-way

DISADVANTAGES / LIMITATIONS:

- Limited effectiveness and reliability
- High maintenance requirements
- Has potential to flood roadways or adjacent properties

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Check for and remove blockage of inlet after every storm event
- Remove sediment before it reaches half the design height or volume of the inlet protection, more frequently for curb inlets
- Repair or replace damaged materials
- Clean or replace filter stone and organic filter tubes is when clogged with sediment

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.35-0.65

(Depends on soil type)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- Traffic hazards
- Passage of larger storm events without causing flooding
- Flow diversion to other inlets or drainage points

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

3.4.1 Primary Use

Inlet protection is typically used as a secondary sediment barrier, due to its limited effectiveness and numerous disadvantages. It is used to reduce sediment in storm sewer systems by serving as a back-up system for areas that have newly applied erosion controls or for other sediment controls that cannot achieve adequate sediment removal by themselves.

Inlet protection may be used as a primary sediment control only when all other primary controls are infeasible because of site configuration or the type of construction activity.

3.4.2 Applications

Inlet protection is best applied at low point (sump) inlets where stormwater runoff will pond behind the protection measure, and then either filter through the protection measure or flow over a weir created by it. Most inlet protection measures depend on ponding to be effective. These types of inlet protection are not applicable to on-grade curb inlets, where the inlet protection will cause stormwater runoff to bypass the inlet and overload downstream inlets. Only inlet protection measures that allow for use of the inlet opening (e.g. inlet inserts) are applicable as inlet protection for on-grade inlets.

Inlet protection is normally used in new developments with new inlets and roads that are not in public use. It has limited applications in developed areas due to the potential for flooding, traffic safety, pedestrian safety, and maintenance problems. Potential applications in developed areas are on parking lot inlets where water can pond without causing damage and during major repairs to existing roadways where no other controls are viable.

The application of inlet protection is highly variable due to the wide variety of inlet configurations (existing and new) and site conditions. The schematics in Section 6 show example applications; however, applications in most cases must be site adapted. Different methods and materials may be used. It is the responsibility of the designer to ensure that the methods and materials applied for inlet protection are appropriate to the site and flow conditions following the design criteria in Section 3.

3.4.3 Design Criteria

General

- Drainage patterns shall be evaluated to ensure inlet protection will not divert flow or flood the roadway or adjacent properties and structures.
- Inlet protection measures or devices that completely block the inlet are prohibited. They must also include a bypass capability in case the protection measures are clogged.
- Inlet protection must be designed to pass the conveyance storm (25-year, 24-hour) without creating a road hazard or damaging adjacent property. This may be accomplished by any of the following measures:
 - An overflow weir on the protection measure.
 - An existing positive overflow swale on the inlet.
 - Sufficient storage volume around the inlet to hold the ponded water until it can all filter into the inlet.
 - Other engineered method.
- Positive overflow drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, temporary means shall be provided to route excess flows through established swales, streets, or other watercourses to minimize damage due to flooding.
- Filter fabric and wire mesh used for inlet protection shall meet the material requirements specified in [Section 3.10 Silt Fence](#).

- Block and gravel (crushed stone or recycled concrete) protection is used when flows exceed 0.5 cubic feet per second and it is necessary to allow for overtopping to prevent flooding.
- The tube and filler for organic filter tubes shall be in accordance with the criteria in [Section 3.6 Organic Filter Tube](#).
- Bags used to secure inlet protection devices on pavement shall be filled with aggregate, filter stone, or crushed rock that is less likely than sand to be washed into an inlet if the bag is broken. Filled bags shall be 24 to 30 inches long, 16 to 18 inches wide, and 6 to 8 inches thick. Bags shall be polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 ounces per square yard and meet the following criteria:
 - Greater than 300 psi Mullen Burst Strength using ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method.
 - Greater than 70 percent UV Stability using ASTM D4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus.

Curb Inlet Protection

- Municipality approval is required before installing inlet protection on public streets.
- Special caution must be exercised when installing curb inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.
- A two inch overflow gap or weir is required on all curb inlet protection devices.
- Traffic cones, warning signs, or other measures shall be installed to warn motorists when the inlet protection measures extend beyond the gutter line.
- 2 inch X 4 inch Weir Protection:
 - Bend wire mesh around the 2 inch x 4 inch board and staple to the board. Bend wire mesh around the bottom of the board, the curb opening, and along the pavement to form a cage for the rock.
 - Rock bags shall be placed perpendicular to the curb, at both ends of the wooden frame, to disrupt the flow and direct water into the rock filter. Stack the bags two high if needed.
- Organic Filter Tube Protection:
 - The diameter of the tube shall be at least 2 inches less than the height of the inlet opening. The tube should not be allowed to block the entire opening, since it will clog.
 - The tube shall be placed on 4 inch x 4 inch or 2 inch x 4 inch wire mesh to prevent the tube from sagging into the inlet.
 - The tube should be long enough to extend a minimum of 12 inches past the curb opening on each side of the inlet.
- Hog Wire Weir Protection:
 - The filter fabric and wire mesh shall extend a minimum of 12 inches past the curb opening on each side of the inlet.
 - Filter fabric shall be placed on 2 inch x 4 inch wire mesh to prevent the tube from sagging into the inlet.
 - Rock bags are used to hold the wire mesh and filter fabric in contact with the pavement. At least one bag shall be placed on either side of the opening, parallel to and up against the concrete curb. The bags are intended to disrupt and slow the flow and ensure it does not go under the fabric. Add bags if needed.

- If a board is used to anchor the wire mesh and fabric instead of rock bags, the board shall be secured with concrete nails at 3 inches on center. Upon removal clean any dirt or debris from the nailing locations, apply chemical sanding agent, and apply non-shrink grout flush with surface of concrete.
- Block and Gravel Protection:
 - Concrete blocks shall be standard 8 inch x 8 inch x 16 inch concrete masonry units and shall be in accordance with ASTM C139, Concrete Masonry Units for Construction. Filter gravel shall be ¾ inch washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
 - Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting. Openings in the blocks should face outward, not upward. ½ inch x ½ inch wire mesh shall then be placed over the outside face of the blocks covering the holes. Filter gravel shall then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18 inches from the blocks.
 - Alternatively, where loose stone is a concern (streets, etc.), the filter gravel may be placed in appropriately sized filter fabric bags.
 - Periodically, when the gravel filter becomes clogged, the gravel must be removed and cleaned in a proper manner or replaced with new gravel and piled back against the wire mesh.
- Organic Filter Tube On-Grade Protection:
 - Organic filter tubes may be used to provide sediment control at on-grade curb inlets where the tube will not be a traffic hazard, such as on residential streets where the pavement adjacent to the curb is allocated to parked cars. Tubes should not be used in this manner where they will extend into an active travel lane.
 - The filter tube shall be secured in a U-shape by rock bags. Runoff flowing in the gutter will pond within the U until it filters through the tube or overflows around the end.
- Inlet protection shall be phased on curb inlets being constructed. Controls shall be installed on the pipe inlet at the bottom of the catch basin as soon as it is installed and while the inlet box and top are being formed or placed.

Area Inlet Protection

- Installation methods for protection on area inlets vary depending on the type of inlet (drop, “Y,” or other) and the type and use of the surface surrounding the inlet (parking lot, playground, etc.). It is the responsibility of the designer to appropriately adapt inlet protection measures and their installation methods for each site condition. Several types may be needed on one project.
- Filter Fabric Protection:
 - Filter fabric protection is appropriate where the drainage area is less than one acre and the basin slope is less than five (5) percent. Filter fabric, posts, and wire mesh shall meet the material requirements specified in [Section 3.10 Silt Fence](#).
 - A 6 inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
 - Stone overflow structures, according to the criteria in [Section 3.10 Silt Fence](#) shall be installed where flow to the inlet is concentrated and more than 1 cubic feet per second.
- Excavated Impoundment Protection:
 - Excavated inlet protection is usually the most effective type of area inlet protection; however, it is only applicable to drop inlets. It should not be applied to Y inlets because it will undermine the concrete pad surrounding the inlet opening. Nor can it be used for inlets on pavement.

- With this protection method, it is necessary to install weep holes to allow the impoundment to drain completely.
- The impoundment shall be sized such that the volume of excavation is equal to or exceeds the runoff volume from the temporary control design storm (2-year, 24-hour) for the inlet's drainage area.
- The trap shall have a minimum depth of one foot and a maximum depth of 2 feet as measured from the top of the inlet and shall have side slopes of 2:1 or flatter.
- Block and Gravel Protection:
 - Block and gravel inlet protection is the most stable area inlet protection and can handle more concentrated flows. It may be installed on paved or vegetated surfaces. Loose stone shall be carefully removed from vegetated surfaces at the end of construction to prevent the stone from becoming a mowing hazard.
 - The inlet protection may be one or two blocks high. Single block heights are applicable for drainage areas up to 3 acres in size. The double block height shall be used for larger drainage areas.
 - Concrete blocks shall be standard 8 inch x 8 inch x 16 inch concrete masonry units and shall be in accordance with ASTM C139, Concrete Masonry Units for Construction. Filter gravel shall be ¾ inch washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- Organic Filter Tube Protection:
 - Organic filter tubes may be used on paved or unpaved surfaces.
 - On paved surfaces, tubes shall be secured in place by rock bags. On unpaved surfaces, the tubes shall be embedded in the ground a minimum of 3 inches and staked at 4 foot spacing.
 - Designer shall provide calculations and specify the diameter of tube to be used based on the inlet's drainage area and the flow rate of runoff to the inlet. The minimum allowable diameter is 12 inches.

Proprietary Inlet Protection

- Numerous proprietary protection devices are available from commercial vendors. The devices often have the advantage of being reusable on several projects if they are maintained in good condition.
- It is the policy of this manual not to recommend any specific commercial vendors for proprietary controls. However, this subsection is included in order to provide municipalities with a rationale for approving the use of a proprietary inlet protection device within their jurisdiction.
- The designer shall work with the supplier to provide the municipality with flow calculations or independent third-party tests that document the device's performance for conditions similar to the ones in which it is proposed to be installed. The conditions that should be considered include: type and size of inlet, inlet configuration, size of contributing drainage area, design flow rate, soil particle sizes to be removed, and other pollutants to be removed.
- The designer or vendor of the proprietary device shall provide a minimum of three references for projects where the device has been installed and maintained in operation at a construction site for at least six months. Local references are preferred; but references from other regions can be accepted if a similarity between the reference project and the proposed application can be demonstrated.
- Proprietary devices must not completely block the inlet. The device shall have a minimum of a 2 inch wide opening for the length of the inlet when it will be used in areas that water can safely pond to depths deeper than the design depths for the inlet. If ponding is not an option, then the device must have overflow capacity equal to the inlet design flow rate.
- Some proprietary devices are available with replaceable pads or filters. These pads or filters have the added benefit of removing pollutants such as metals and oils in addition to removing sediment.

These types of inserts are recommended in applications where prior or current land use in or adjacent to the construction areas may result in the discharge of pollutants.

- Proprietary protection devices shall be in accordance with the General criteria at the beginning of this section and any criteria listed under Curb Inlet Protection and Area Inlet Protection that are not specific to an inlet protection method.

3.4.4 *Design Guidance and Specifications*

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.15 Inlet Protection.

3.4.5 *Inspection and Maintenance Requirements*

Inlet protection should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Inlet controls should also be inspected after every storm event to check for collapse into the inlet or other damages that may block flow in the inlet. In addition to routine inspection, inlet protection devices should be observed and monitored during larger storm events to verify that they are not ponding or diverting water in a manner that floods a roadway or damages property.

Floatable debris and other trash caught by the inlet protection should be removed after each storm event. Sediment should also be removed from curb inlet protection after each storm event because of the limited storage area associated with curb inlets.

Sediment collected at area inlet protection should be removed before it reaches half the height of the protection device. Sediment should be removed from inlets with excavated impoundment protection before the volume of the excavation is reduced by 50 percent. In addition, the weep holes should be checked and kept clear of blockage.

Concrete blocks, 2 inch x 4 inch boards, stakes, and other materials used to construct inlet protection should be checked for damaged and repaired or replaced if damaged.

When filter fabric or organic filter tubes are used, they should be cleaned or replaced when the material becomes clogged. For systems using filter stone, when the filter stone becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced.

Because of the potential for inlet protection to divert runoff or cause localized flooding, remove inlet protection as soon as the drainage area contributing runoff to the inlet is stabilized. Ensure that all inlet protection devices are removed at the end of the construction.

3.4.6 *Example Schematics*

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

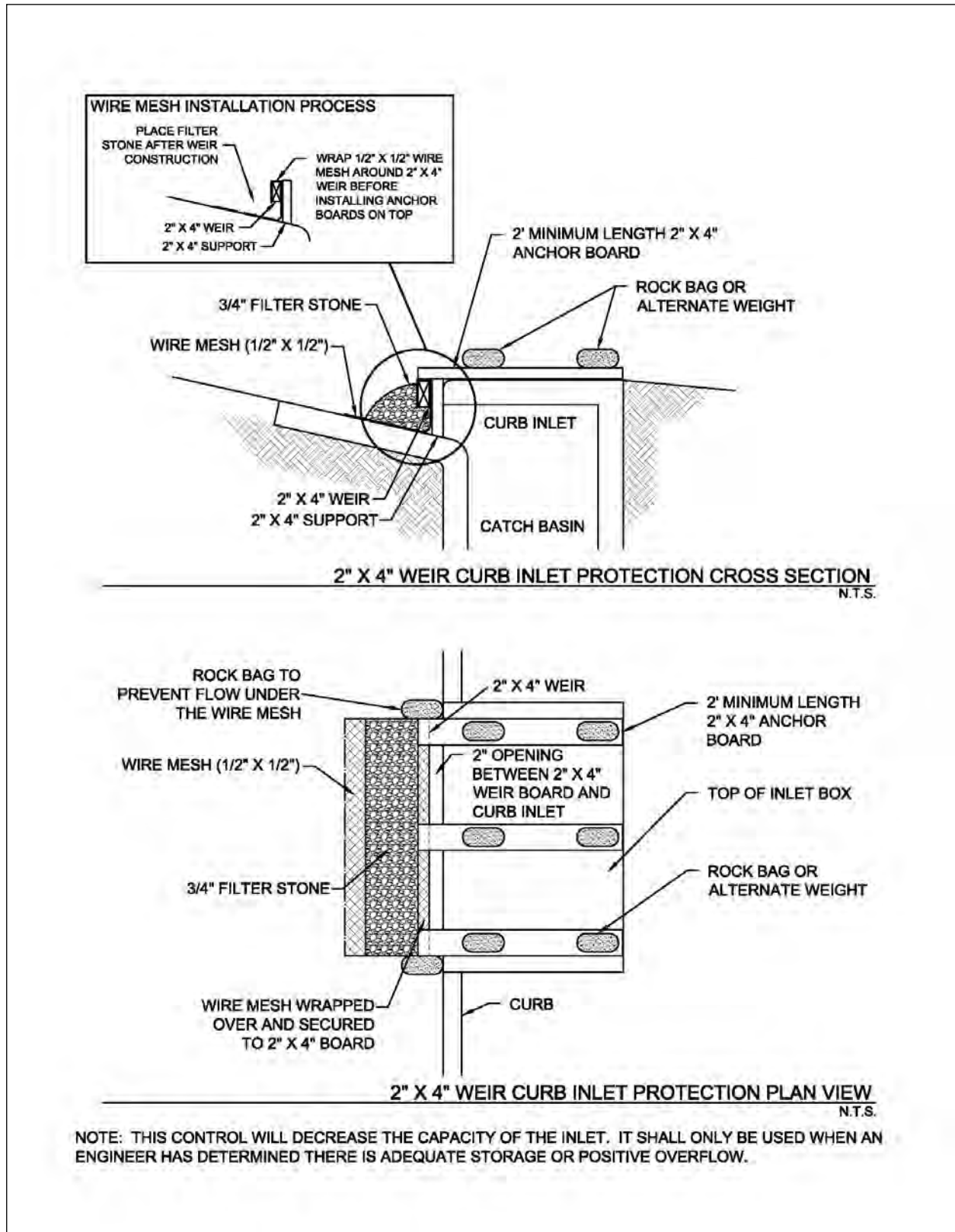


Figure 3.5 Schematics of 2"x4" Weir Curb Inlet Protection
(Source: Modified from Washington Suburban Sanitary Commission Detail SC-16.0)

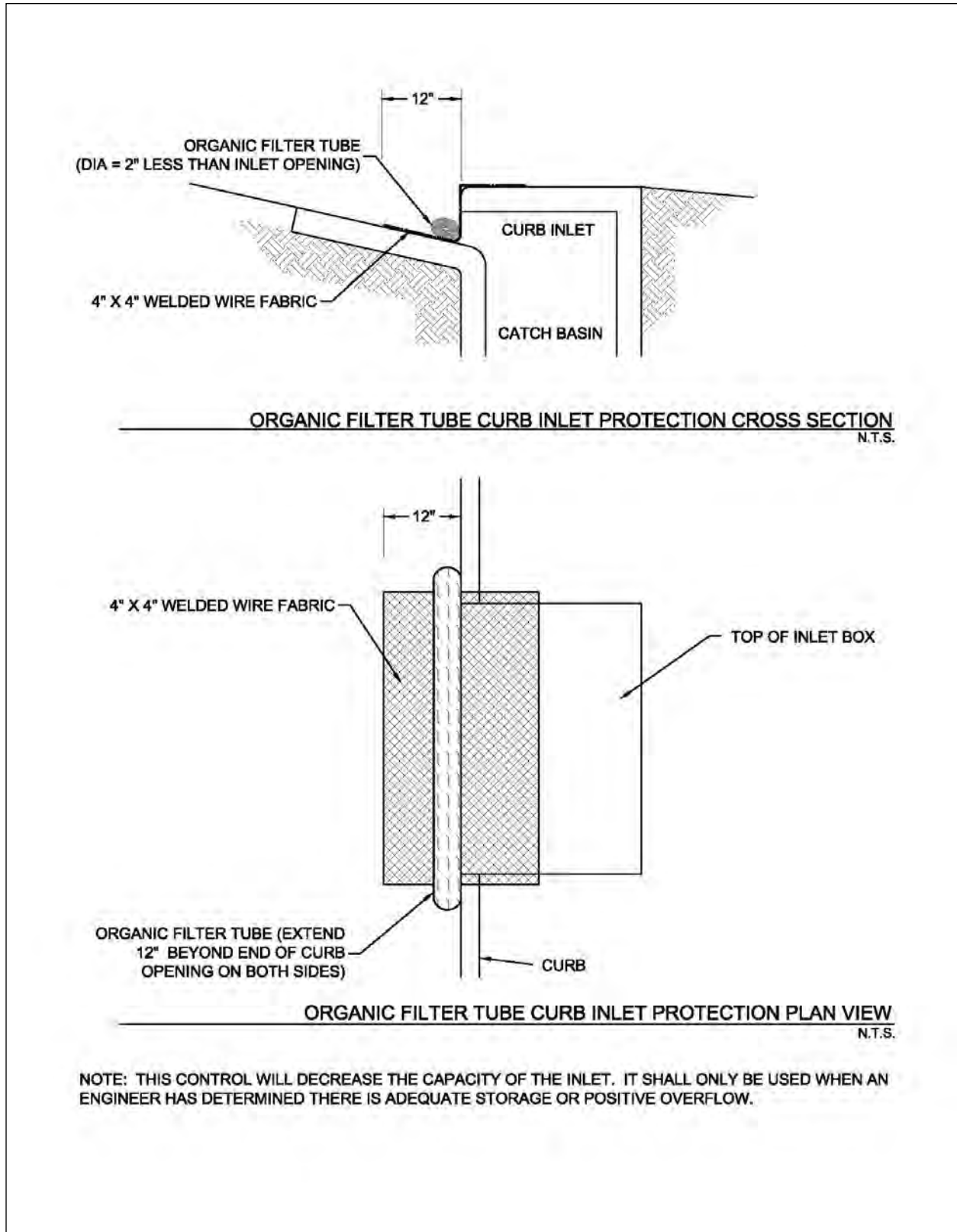


Figure 3.6 Schematics of Organic Filter Tube Curb Inlet Protection
(Source: Modified from City of Plano BMP SP-4)

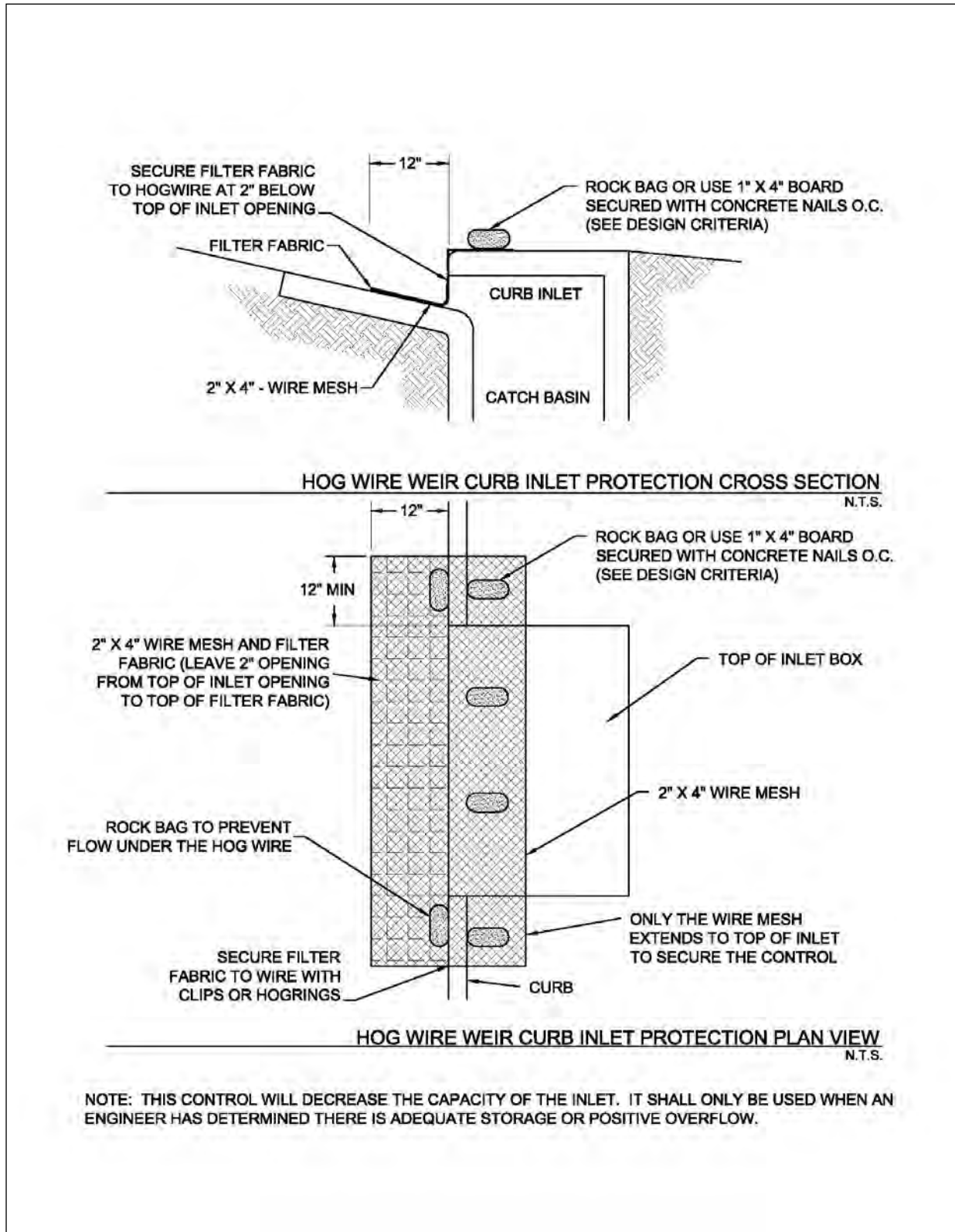


Figure 3.7 Schematics of Hog Wire Weir Curb Inlet Protection

(Source: Modified from City of Round Rock Detail E-03)

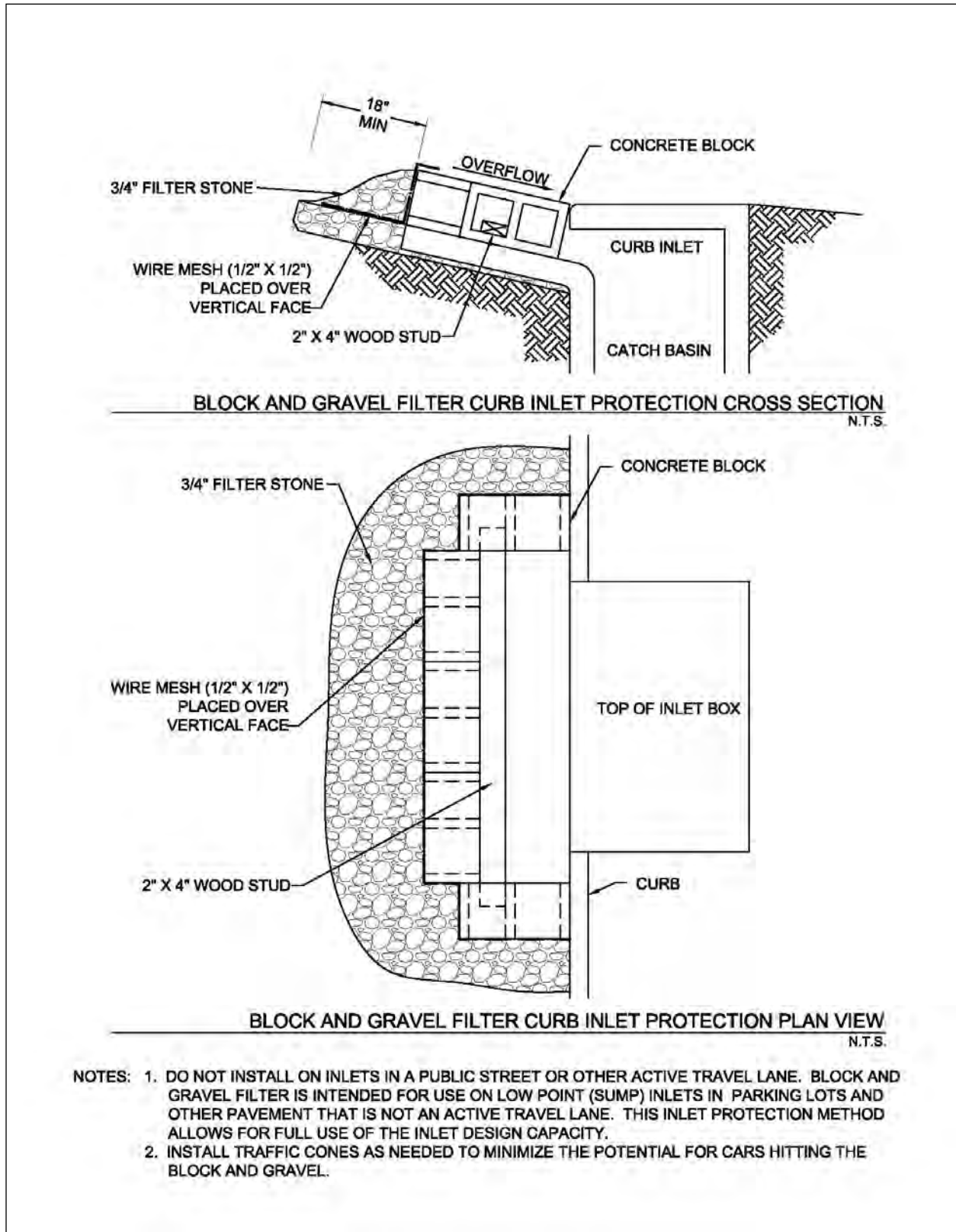


Figure 3.8 Schematics of Block and Gravel Filter Curb Inlet Protection

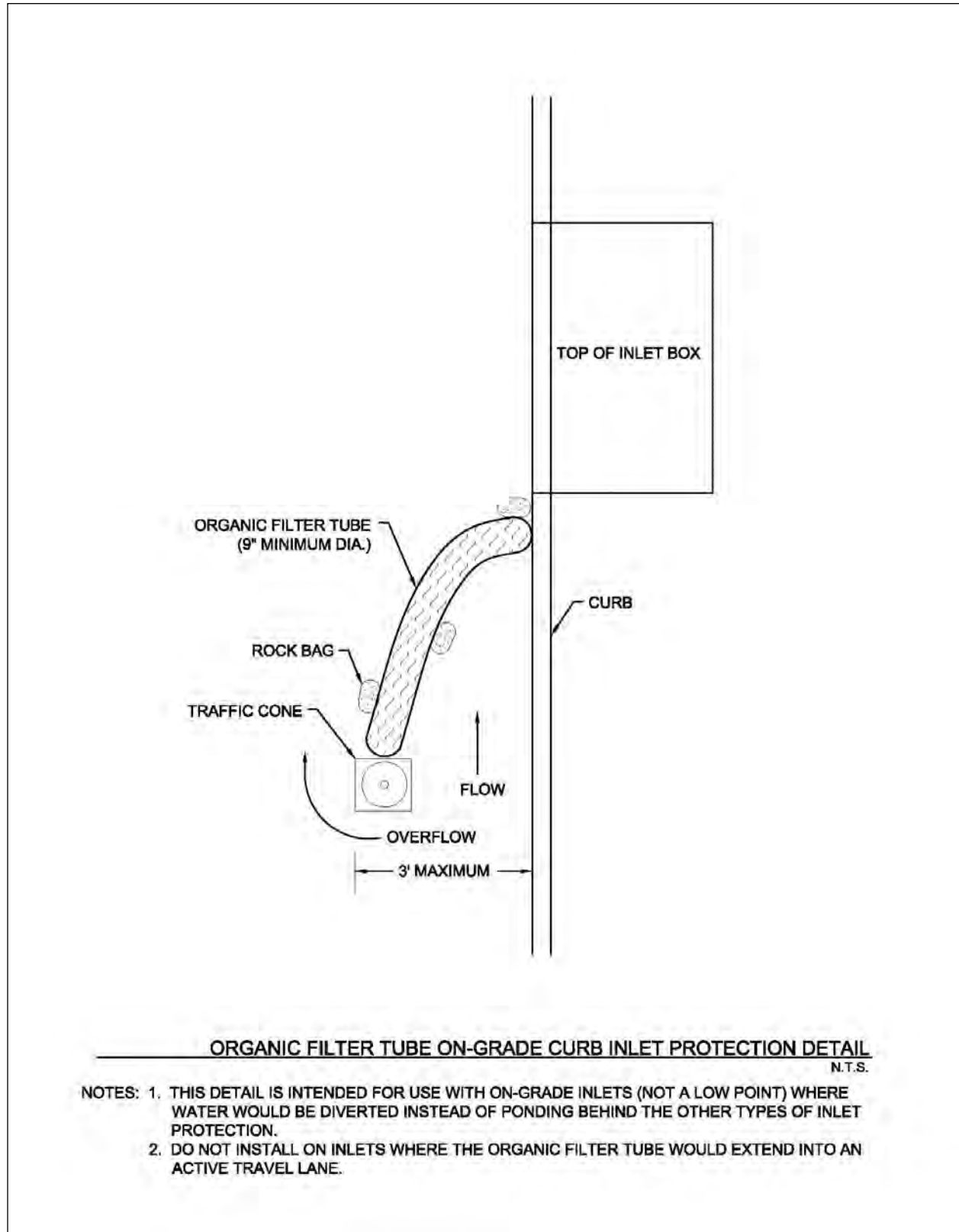


Figure 3.9 Schematic of Organic Filter Tube On-Grade Curb Inlet Protection

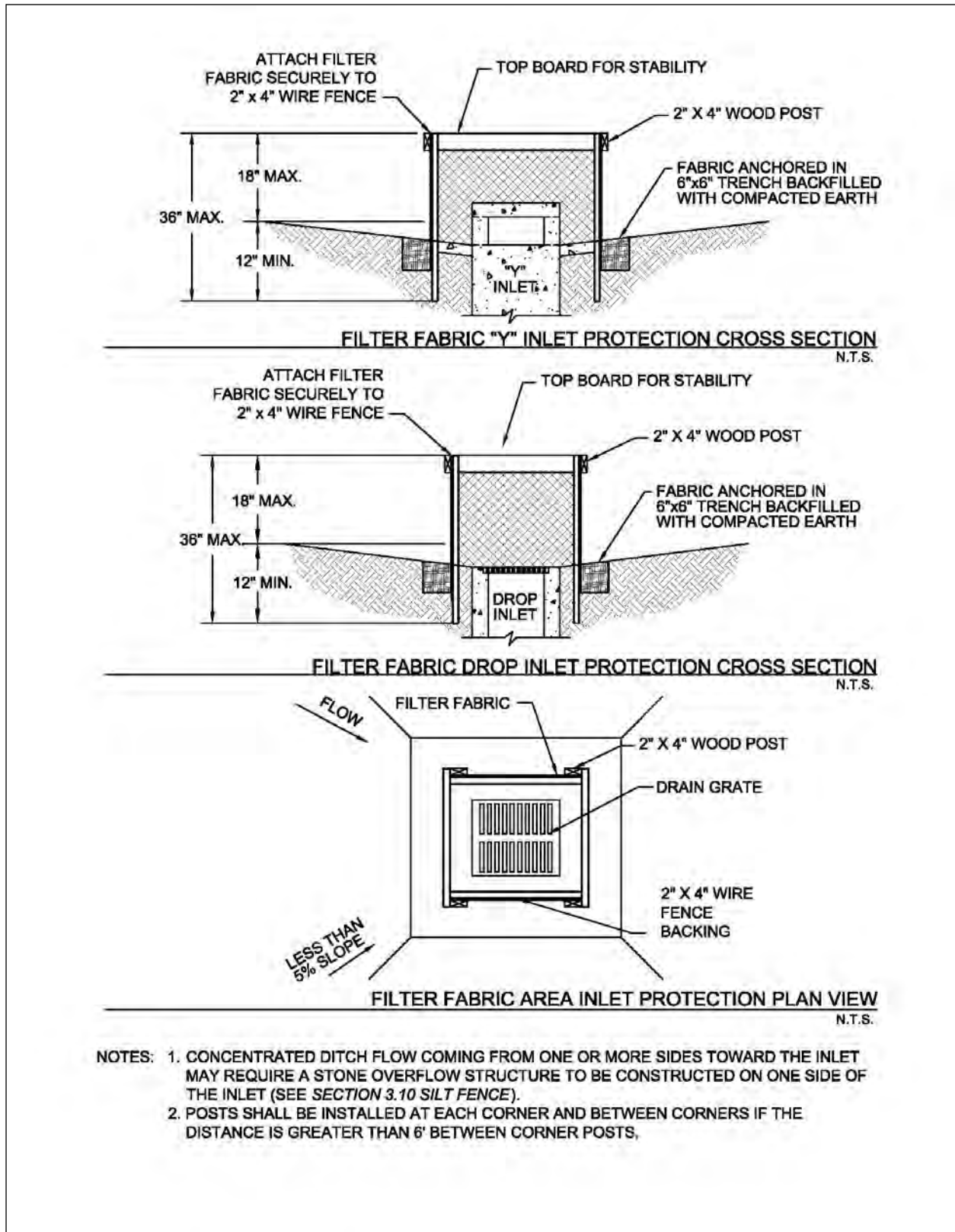


Figure 3.10 Schematics of Filter Fabric Area Inlet Protection

(Source: City of Plano BMP SP-4)

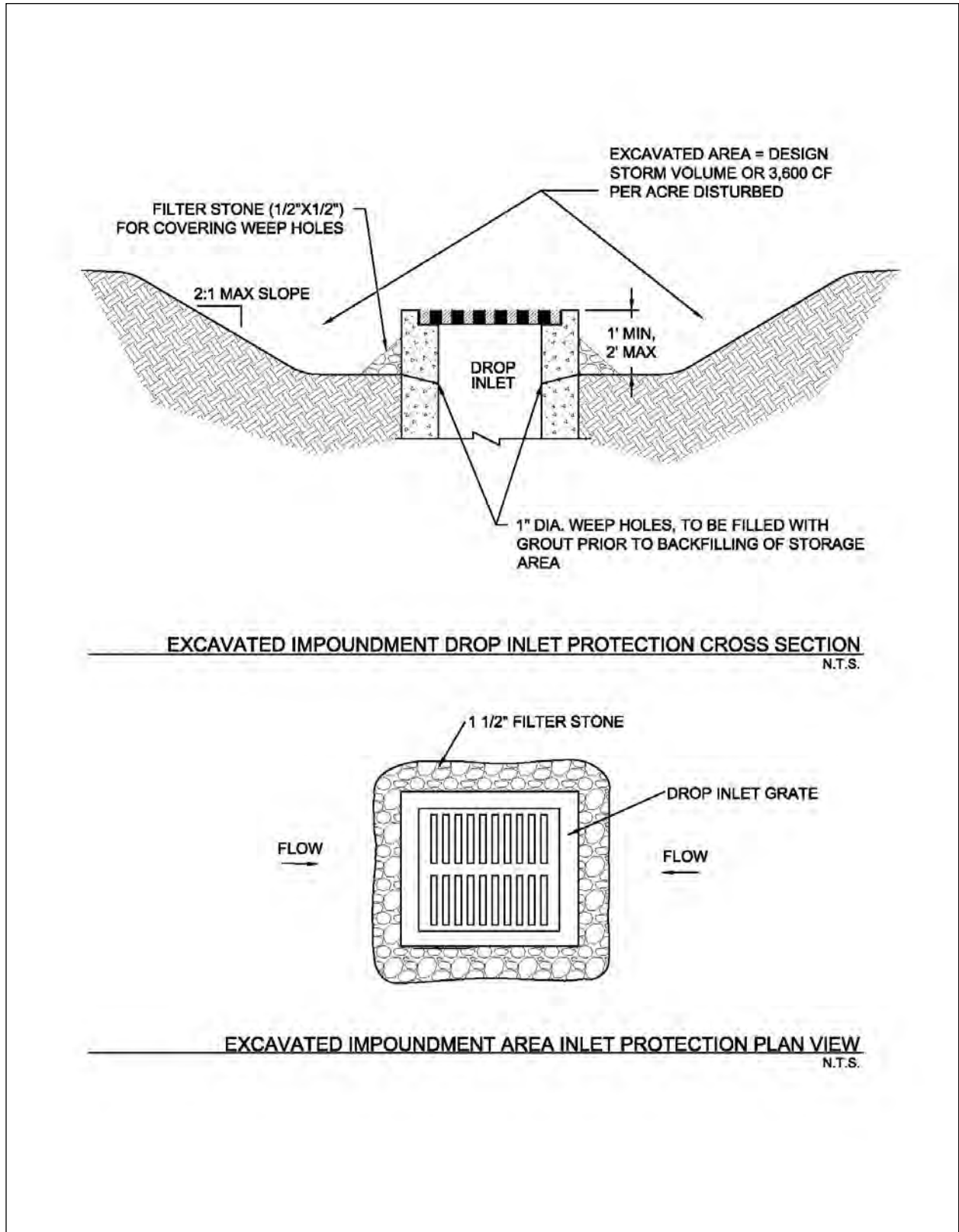


Figure 3.11 Schematics of Excavated Impoundment Area Inlet Protection

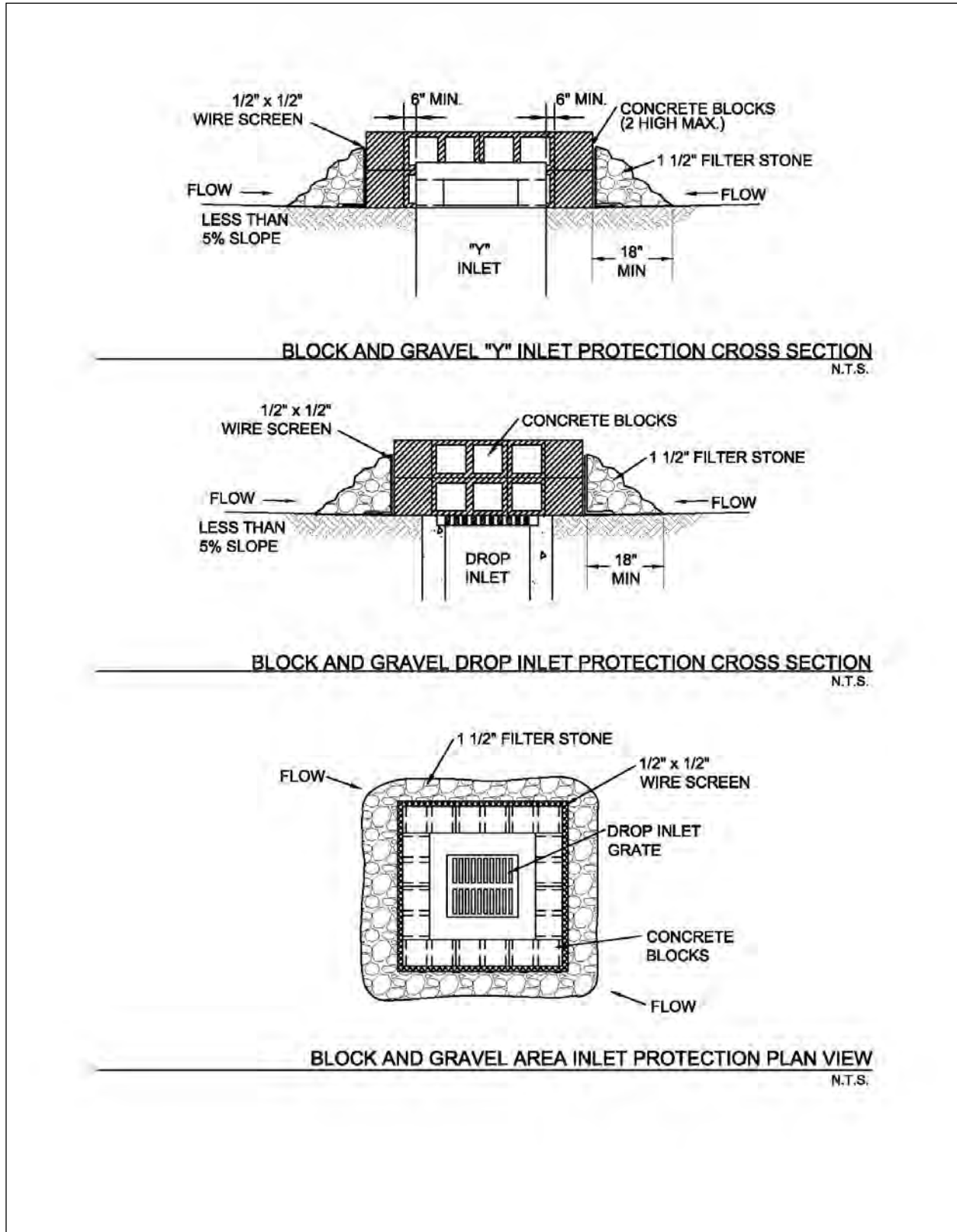


Figure 3.12 Schematics of Block and Gravel Area Inlet Protection

(Source: Modified from City of Plano BMP SP-4)

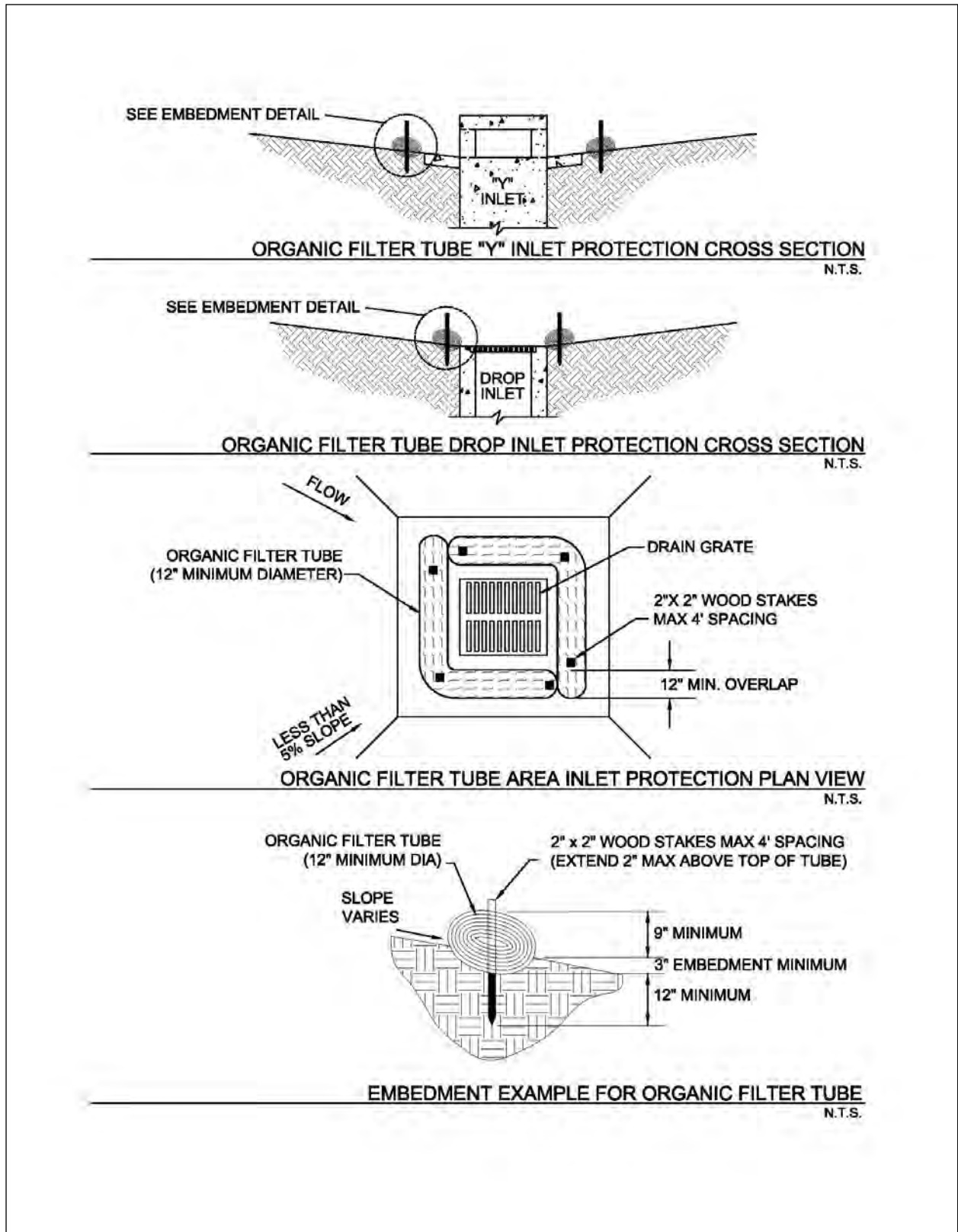
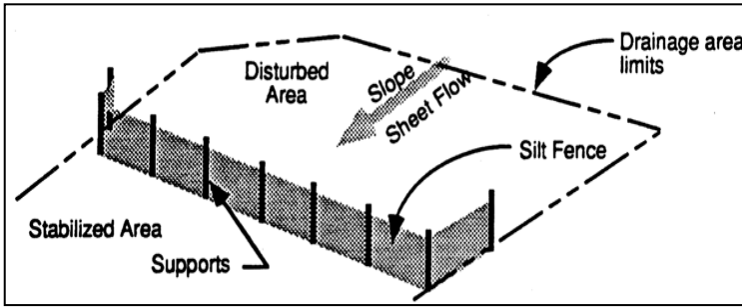


Figure 3.13 Schematics of Organic Filter Tube Area Inlet Protection

3.10 Silt Fence

Sediment Control



Description: A silt fence consists of geotextile fabric supported by wire mesh netting or other backing stretched between metal posts with the lower edge of the fabric securely embedded six-inches in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. A silt fence provides both filtration and time for sediment settling by reducing the velocity of the runoff.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Maximum drainage area of 0.25 acre per 100 linear feet of silt fence
- Maximum 200 feet distance of flow to silt fence; 50 feet if slope exceeds 10 percent
- Minimum fabric overlap of 3 feet at abutting ends; join fabric to prevent leakage
- Turn end of silt fence line upslope a minimum of 10 feet
- Install stone overflow structure at low points or spaced at approximately 300 feet if no apparent low point

ADVANTAGES / BENEFITS:

- Economical means to treat sheet flow
- Most effective with coarse to silty soil types

DISADVANTAGES / LIMITATIONS:

- Limited effectiveness with clay soils due to clogging
- Localized flooding due to minor ponding at the upslope side of the silt fence
- Not for use as check dams in swales or low areas subject to concentrated flow
- Not for use where soil conditions prevent a minimum toe-in depth of 6 inches or installation of support posts to a depth of 12 inches
- Can fail structurally under heavy storm flows, creating maintenance problems and reducing effectiveness

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Repair undercutting, sags and other fence failures
- Remove sediment before it reaches half the height of the fence
- Repair or replace damaged or clogged filter fabric

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.50-0.75

(Depends on soil type)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Effects of ponding or the redirection of flow onto adjacent areas and property*

3.10.1 Primary Use

Silt fence is normally used as a perimeter control on the down slope side of disturbed areas and on side slopes where stormwater may runoff the area. It is only feasible for non-concentrated, sheet flow conditions. If it becomes necessary to place a silt fence where concentrated flows may occur (e.g. where two silt fences join at an angle, or across minor channels or gullies), it will be necessary to reinforce the silt fence at that area by a rock berm or sand bag berm, or other structural measures that will support the silt fence.

3.10.2 Applications

Silt fence is an economical means to treat overland, non-concentrated flows for all types of projects. Silt fences are used as perimeter control devices for both site developers and linear (roadway) type projects. They are most effective with coarse to silty soil types. Due to the potential of clogging and limited effectiveness, silt fences should be used with caution in areas that have predominantly clay soil types. In this latter instance, a soils engineer or soil scientist should confirm the suitability of silt fence for that application. Additional controls may be needed to remove fine silts and clay soils suspended in stormwater.

3.10.3 Design Criteria

- Fences are to be constructed along a line of constant elevation (along a contour line) where possible.
- Silt fence can interfere with construction operations; therefore, planning of access routes onto the site is critical.
- Maximum drainage area shall be 0.25 acre per 100 linear feet of silt fence.
- Maximum flow to any 20 foot section of silt fence shall be 1 CFS.
- Maximum distance of flow to silt fence shall be 200 feet or less. If the slope exceeds 10 percent the flow distance shall be less than 50 feet.
- Maximum slope adjacent to the fence shall be 2:1.
- Silt fences shall not be used where there is a concentration of water in a channel, drainage ditch or swale, nor should it be used as a control on a pipe outfall.
- If 50 percent or less soil, by weight, passes the U.S. Standard Sieve No. 200; select the apparent opening size (A.O.S.) to retain 85percent of the soil.
- If 85 percent or more of soil by weight, passes the U.S. Standard Sieve No. 200, silt fences shall not be used unless the soil mass is evaluated and deemed suitable by a soil scientist or geotechnical engineer concerning the erodibility of the soil mass, dispersive characteristics, and the potential grain-size characteristics of the material that is likely to be eroded.
- Stone overflow structures or other outlet control devices shall be installed at all low points along the fence or spaced at approximately 300 feet if there is no apparent low point.
- Filter stone for overflow structure shall be 1 ½ inches washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- Silt fence fabric must meet the following minimum criteria:
 - Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 90-lbs.
 - Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60-lbs.
 - Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280-psi.

- Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 30(max) to No. 100 (min).
- Ultraviolet Resistance, ASTM D4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus, Minimum 70 percent.
- Fence posts shall be steel and may be T-section or L-section, 1.3 pounds per linear foot minimum, and 4 feet in length minimum. Wood posts may be used depending on anticipated length of service and provided they are 4 feet in length minimum and have a nominal cross section of 2 inches by 4 inches for pine or 2 inches by 2 inches for hardwoods.
- Silt fence shall be supported by steel wire fence fabric as follows:
 - 4 inch x 4 inch mesh size, W1.4 /1.4, minimum 14 gauge wire fence fabric;
 - Hog wire, 12 gauge wire, small openings installed at bottom of silt fence;
 - Standard 2 inch x 2 inch chain link fence fabric; or
 - Other welded or woven steel fabrics consisting of equal or smaller spacing as that listed herein and appropriate gauge wire to provide support.
- Silt Fence shall consist of synthetic fabric supported by wire mesh and steel posts set a minimum of 1-foot depth and spaced not more than 6-feet on center.
- A 6 inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel to prevent bypass of runoff under the fence. Fabric shall overlap at abutting ends a minimum of 3 feet and shall be joined such that no leakage or bypass occurs. If soil conditions prevent a minimum toe-in depth of 6 inches or installation of support post to depth of 12 inches, silt fences shall not be used.
- Sufficient room for the operation of sediment removal equipment shall be provided between the silt fence and other obstructions in order to properly maintain the fence.
- The last 10 feet (or more) at the ends of a line of silt fence shall be turned upslope to prevent bypass of stormwater. Additional upslope runs of silt fence may be needed every 200 to 400 linear feet, depending on the traverse slope along the line of silt fence.

3.10.4 Design Guidance and Specifications

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.5 Silt Fence and in the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (TxDot 2004) Item 506.2.J and Item 506.4.C.9.

The American Society for Testing and Materials has established standard specifications for silt fence materials (ASTM D6461) and silt fence installation (ASTM D6462).

3.10.5 Inspection and Maintenance Requirements

Silt fence should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for buildup of excess sediment, undercutting, sags, and other failures. Sediment should be removed before it reaches half the height of the fence. In addition, determine the source of excess sediment and implement appropriate measures to control the erosion. Damaged or clogged fabric must be repaired or replaced as necessary.

3.10.6 *Example Schematics*

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

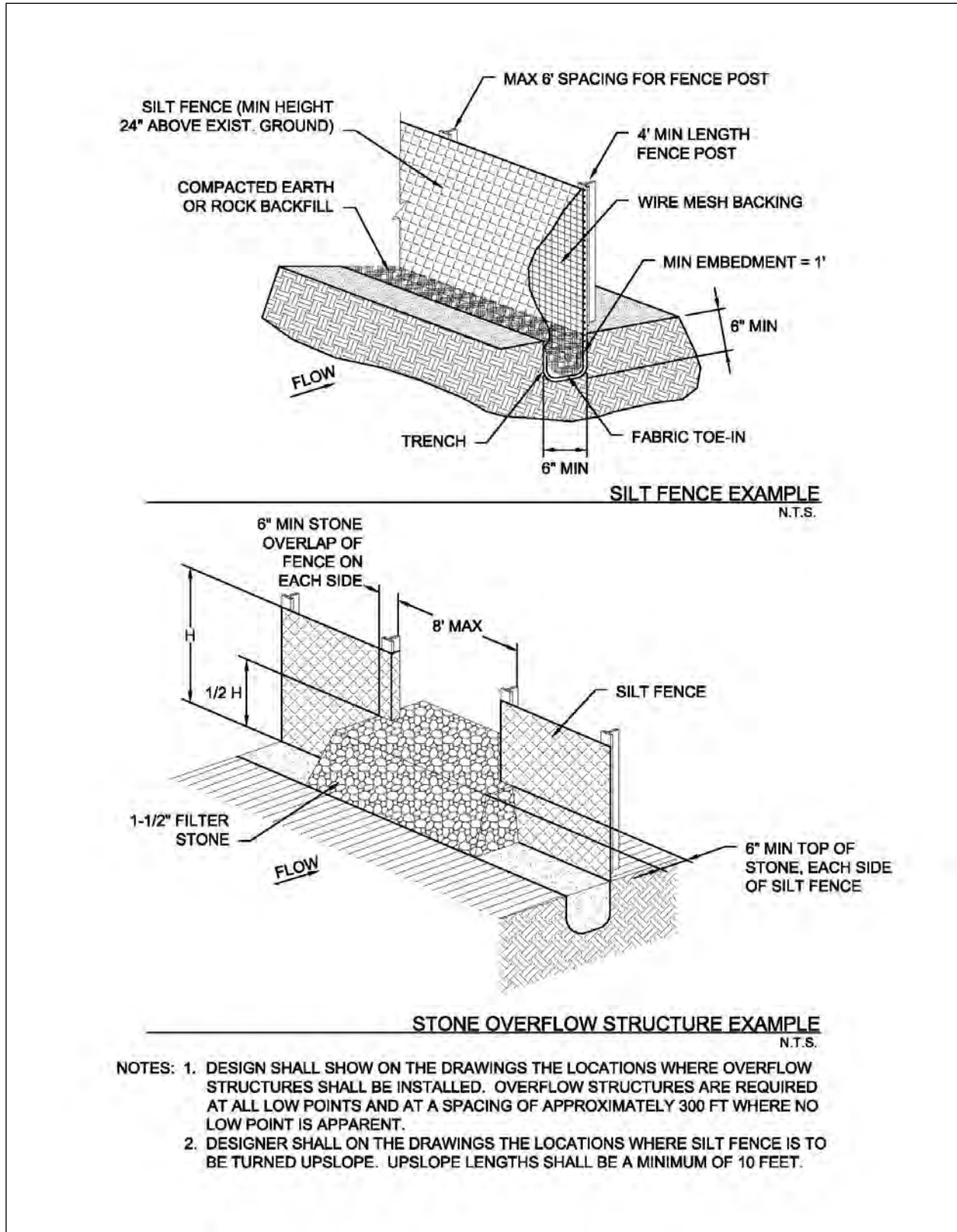
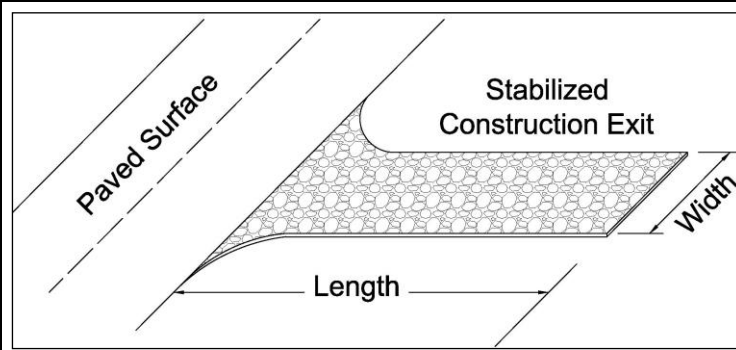


Figure 3.28 Schematics of Silt Fence

3.11 Stabilized Construction Exit

Sediment Control



Description: A stabilized construction exit is a pad of crushed stone, recycled concrete or other rock material placed on geotextile filter cloth to dislodge soil and other debris from construction equipment and vehicle tires prior to exiting the construction site. The object is to minimize the tracking of soil onto public roadways where it will be suspended by stormwater runoff.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Slope exit away from offsite paved surface
- Minimum width and length dependent on size of disturbed area, which correlates to traffic volume
- 6 inches minimum thickness of stone layer
- Stone of 3 to 5 inches in size
- Add a wheel cleaning system when inspections reveal the stabilized exit does not prevent tracking

ADVANTAGES / BENEFITS:

- Reduces tracking of soil onto public streets
- Directs traffic to a controlled access point
- Protects other sediment controls by limiting the area disturbed

DISADVANTAGES / LIMITATIONS:

- Effectiveness dependent on limiting ingress and egress to the stabilized exit
- A wheel washing system may also be required to remove clay soil from tires, particularly in wet conditions

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Replace rock when sediment in the void area between the rocks is visible on the surface
- Periodically re-grade and top dress with additional stone to maintain efficiency

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization**
- Final Stabilization
- Waste Management
- Housekeeping Practices

Fe=N/A

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- None

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

3.11.1 Primary Use

Stabilized construction exits are used to remove soil, mud and other matter from vehicles that drive off of a construction site onto public streets. Stabilized exits reduce the need to remove sediment from streets. When used properly, they also control traffic by directing vehicles a single (or two for larger sites) location. Controlling traffic onto and off of the site reduces the number and quantity of disturbed areas and provides protection for other sediment controls by decreasing the potential for vehicles to drive over the control.

3.11.2 Applications

Stabilized construction exits are used on all construction sites with a disturbed area of one acre or larger and are a recommended practice for smaller construction sites. A stabilized exit is used on individual residential lots until the driveway is placed. Stabilized construction exits may be used in conjunction with wheel cleaning systems as described in [Section 3.16 Wheel Cleaning Systems](#).

3.11.3 Design Criteria

- Limit site access to one route during construction, if possible; two routes for linear and larger projects.
- Prevent traffic from avoiding or shortcutting the full length of the construction exit by installing barriers. Barriers may consist of silt fence, construction safety fencing, or similar barriers.
- Design the access point(s) to be at the upslope side of the construction site. Do not place construction access at the lowest point on the construction site.
- Stabilized construction exits are to be constructed such that drainage across the exit is directed to a controlled, stabilized outlet onsite with provisions for storage, proper filtration, and removal of wash water.
- The exit must be sloped away from the paved surface so that stormwater from the site does not discharge through the exit onto roadways.
- Minimum width of exit shall be 15 feet.
- The construction exit material shall be a minimum thickness of 6 inches. The stone or recycled concrete used shall be 3 to 5 inches in size with little or no fines.
- The geotextile fabric must meet the following minimum criteria:
 - Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 300 lbs.
 - Puncture Strength, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 120 lbs.
 - Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 600 psi.
 - Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 40 (max).
- Rock by itself may not be sufficient to remove clay soils from wheels, particularly in wet conditions. When necessary, vehicles must be cleaned to remove sediment prior to entering paved roads, streets, or parking lots. Refer to [Section 3.16 Wheel Cleaning Systems](#) for additional controls.
- Using water to wash sediment from streets is prohibited
- Minimum dimensions for the stabilized exit shall be as follows:

<i>Disturbed Area</i>	<i>Min. Width of Exit</i>	<i>Min. Length of Exit</i>
< 1 Acre	15 feet	20 feet
≥ 1 Acre but < 5 Acres	25 feet	50 feet
≥ 5 Acres	30 feet	50 feet

- If a wheel cleaning system is used, the width of the stabilized exit may be reduced to funnel traffic into the system. Refer to [Section 3.16 Wheel Cleaning](#).

3.11.4 Design Guidance and Specifications

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.10 Stabilized Construction Entrance and in the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (TxDOT 2004) Item 506.2.E and Item 506.4.C.5.

3.11.5 Inspection and Maintenance Requirements

Construction exits should be inspected regularly (at least as often as required by the TPDES Construction General Permit). The stabilized construction exit shall be maintained in a condition that prevents tracking or flow of sediment onto paved surfaces. Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the exit from diminishing. The rock shall be re-graded when ruts appear. Additional rock shall be added when soil is showing through the rock surface.

Additional controls are needed if inspections reveal a properly installed and maintained exit, but tracking of soil outside the construction area is still evident. Additional controls may be daily sweeping of all soil spilled, dropped, or tracked onto public rights-of-way or the installation of a wheel cleaning system.

3.11.6 Example Schematics

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

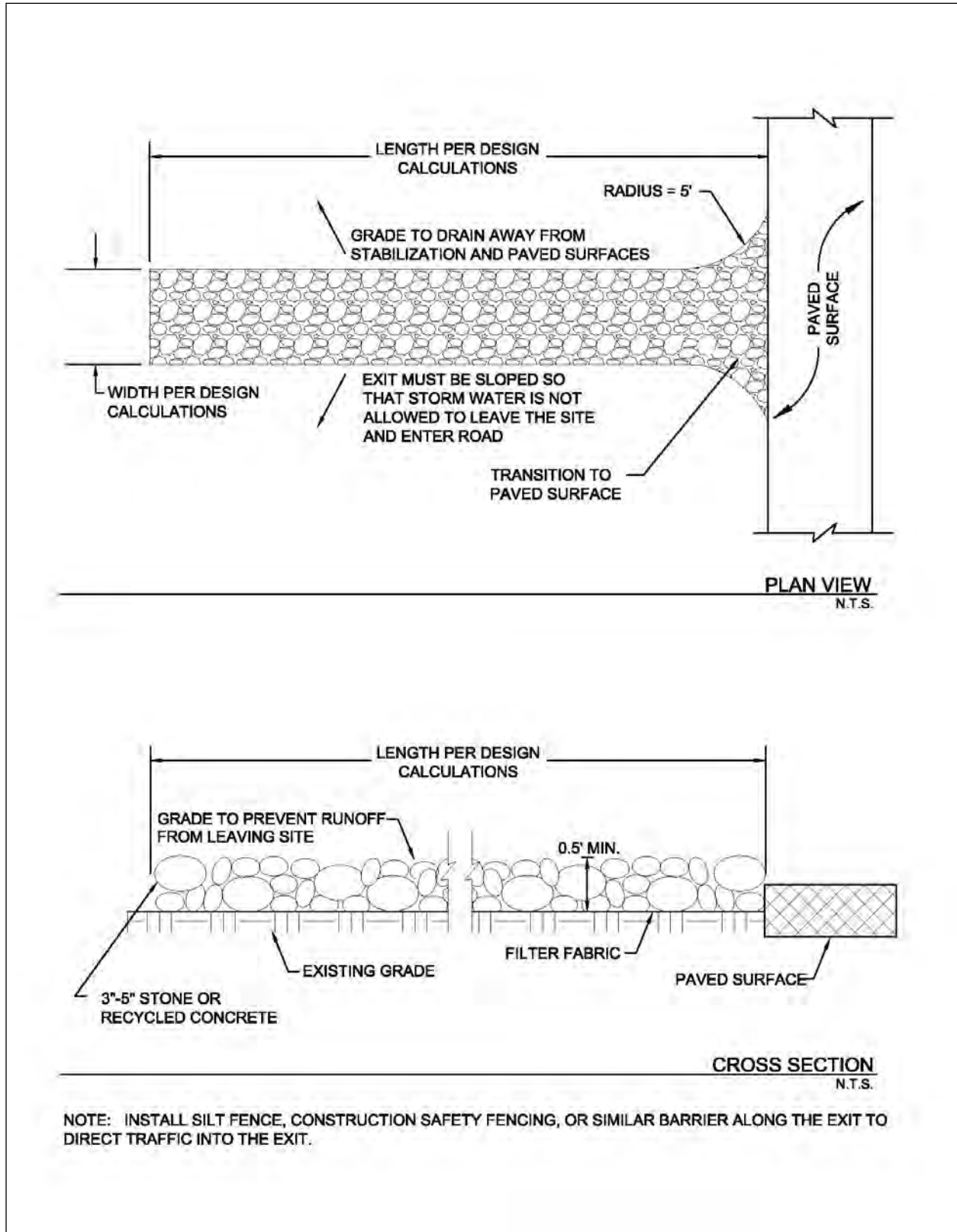
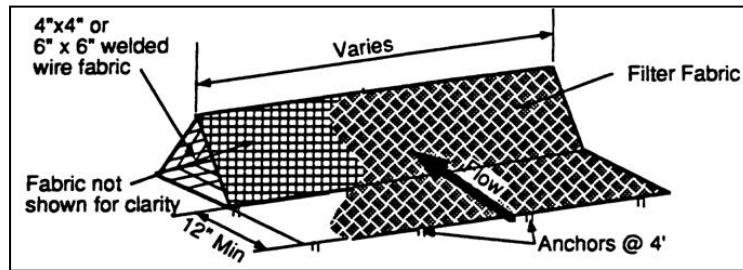


Figure 3.29 Schematics of Stabilized Construction Exit

3.13 Triangular Sediment Filter Dike

Sediment Control



Description: A triangular sediment filter dike is a self-contained silt fence consisting of filter fabric wrapped around welded wire fabric and shaped into a triangular cross section. While similar in use to a silt fence, the dike is reusable, sturdier, transportable, and can be used on paved areas or in situations where it is impractical to install embedded posts for support.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Maximum drainage area of 0.25 acre per 100 linear feet of dike
- Maximum 200 feet distance of flow to filter dike; 50 feet if slope exceeds 10 percent
- Overlap ends of filter material 6 inches to cover dike-to-dike junction; secure with shoat rings

ADVANTAGES / BENEFITS:

- Can be installed on paved surfaces or where the soil type prevents embedment of other controls
- Withstands more concentrated flow and higher flow rates than silt fence

DISADVANTAGES / LIMITATIONS:

- Localized flooding due to minor ponding at the upslope side of the filter dike
- Not effective where there are substantial concentrated flows
- Not effective along contours due to the potential for flow concentration and overtopping

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Remove sediment before it reaches 6 inches in depth
- Clean or replace fabric if clogged
- Repair or replace dike when structural deficiencies are found

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

Fe=0.50-0.75

(Depends on soil type)

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Effects of ponding on adjacent areas and property*

3.13.1 Primary Use

Triangular filter dikes are used in place of silt fence, treating sediment flow at the perimeter of construction areas and at the perimeter of the site. Also, the dikes can serve as stream protection devices by preventing sediment from entering the streams or as check dams in small swales.

Triangular sediment filter dikes are especially useful for construction areas surrounded by pavement, where silt fence, filter berm, or other sediment control installations are impractical.

3.13.2 Applications

Triangular dikes are used to provide perimeter control by detaining sediment on a disturbed site with drainage that would otherwise flow onto adjacent properties. Triangular dikes function as sediment trapping devices when used in areas of sheet flow across disturbed areas or are placed along stream banks to prevent sediment-laden sheet flow from entering the stream. The dikes can be subjected to more concentrated flows and a higher flow rate than silt fence.

Dikes can be used on a variety of surfaces where other controls are not effective. They may be installed on paved surfaces and where the soil type prevents embedment of other sediment controls.

3.13.3 Design Criteria

- Dikes are to be installed along a line of constant elevation (along a contour line).
- Maximum drainage area shall be 0.25 acre per 100 linear feet of dike.
- Maximum flow to any 20 foot section of dike shall be 1 CFS.
- Maximum distance of flow to dike shall be 200 feet or less. If the slope exceeds 10 percent, the flow distance shall be less than 50 feet.
- Maximum slope adjacent to the dike shall be 2:1.
- If 50 percent or less of soil, by weight, passes the U.S. Standard Sieve No. 200, select the apparent opening size (A.O.S.) to retain 85 percent of the soil.
- If 85 percent or more of soil, by weight, passes the U.S. Standard Sieve No. 200, triangular sediment dike shall not be used due to clogging.
- The filter fabric shall meet the following minimum criteria:
 - Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles 90-lbs.
 - Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60-lbs.
 - Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280-psi.
 - Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Siev No. 30 (max) to 100 (min).
 - Ultraviolet Resistance, ASTM D4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus, Minimum 70 percent.
- The internal support for the dike structure shall be 6-gauge 6 inch x 6 inch wire mesh or 6-gauge 4 inch x 4 inch welded wire fabric folded into triangular form eighteen (18) inches on each side.
- Tie-in to the existing grade should be accomplished by:
 - (i) embedding the fabric six-inches below the top of ground on the upslope side;

- (ii) extending the fabric to form a 12 inch skirt on the upstream slope and covering it with 3 to 5 inches of 1½ inch washed filter stone; or
- (iii) entrenching the base of the triangular dike four inches below ground.

For (ii) above, the skirt and the upslope portion of the triangular dike skeleton should be anchored by metal staples on two-foot centers, driven a minimum of six inches into the ground (except where crossing pavement or exposed limestone). When installed on pavement, the washed rock in option (ii) may be replaced by bags filled with 1½ inch washed filter stone placed at 4 foot spacing to anchor the end of the filter fabric to the pavement.

- Filter material shall lap over ends six (6) inches to cover dike-to-dike junction; each junction shall be secured by shoat rings. Where the dike is placed on pavement, two rock bags shall be used to anchor the overlap to the pavement. Additional bags shall be used as needed to ensure continuous contact with the pavement (no gaps).
- Sand bags or large rock should be used as ballast inside the triangular dike section to stabilize the dike against the effects of high flows.
- Sufficient room for the operation of sediment removal equipment shall be provided between the dike and other obstructions in order to properly remove sediment.
- The ends of the dike shall be turned upgrade to prevent bypass of stormwater.
- When used as a perimeter control on drainage areas larger than 0.5 acres, a stone overflow structure, similar to the one shown in [Section 3.10 Silt Fence](#), may be necessary at low points to act as a controlled overflow point in order to prevent localized flooding and failure of the dike.
- If used as check dams in small swales (drainage areas less than 3 acres), the dikes shall be installed according to the spacing and other criteria in [Section 2.1 Check Dam](#).

3.13.4 Design Guidance and Specifications

Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.8 Triangular Sediment Filter Dike.

3.13.5 Inspection and Maintenance Requirements

Triangular sediment filter dikes should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Sediment should be removed before it reaches 6 inches in depth. If the fabric becomes clogged, it should be cleaned or, if necessary, replaced. If structural deficiencies are found, the dike should be immediately repaired or replaced.

The integrity of the filter fabric is important to the effectiveness of the dike. Overlap between dike sections must be checked on a regular basis and repaired if deficient.

3.13.6 Example Schematics

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

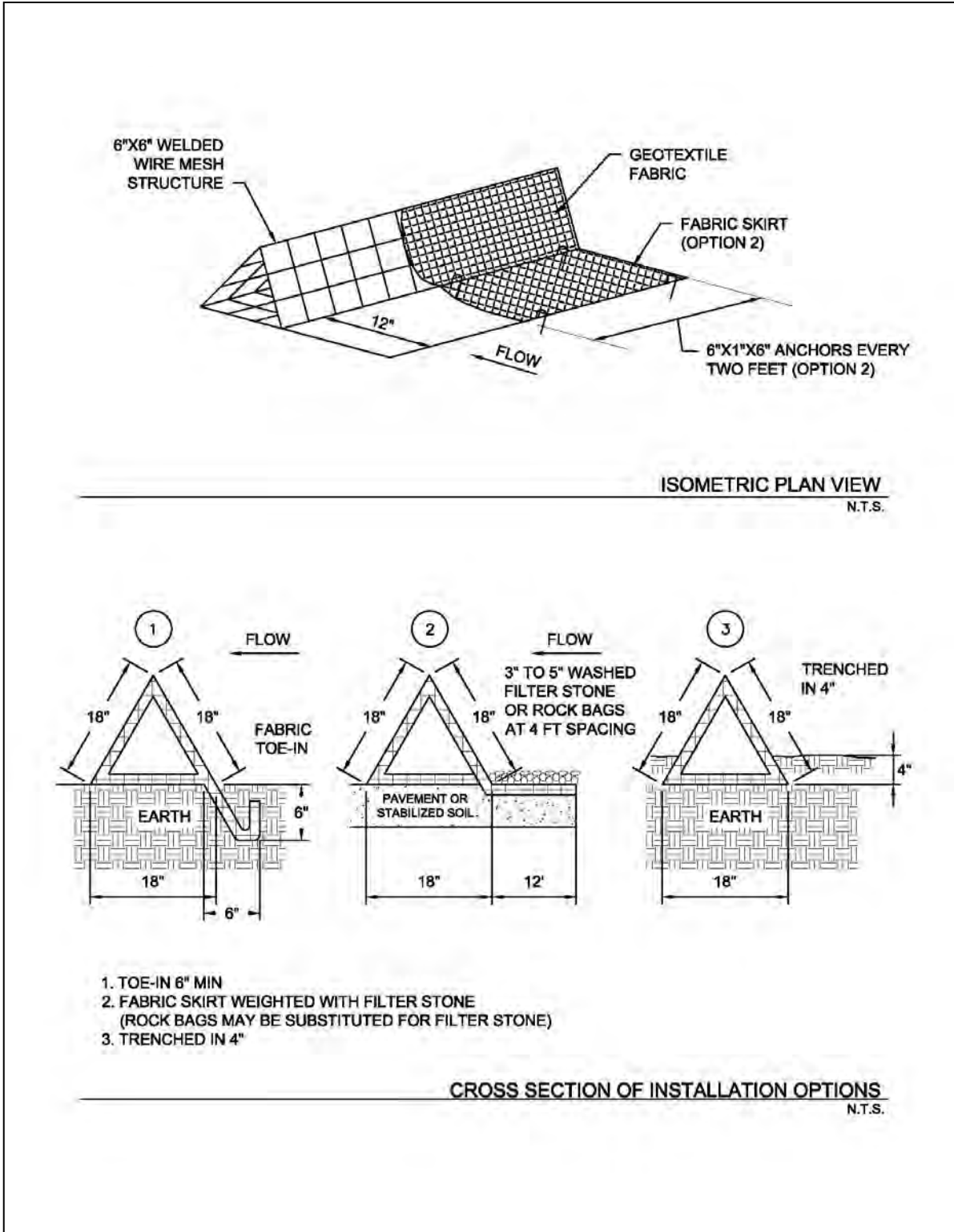


Figure 3.32 Schematics of Triangular Sediment Filter Dike

4.0 Material and Waste Controls

4.1 Chemical Management

Material and Waste Control

Description: Chemical management addresses the potential for stormwater to be polluted with chemical materials and wastes that are used or stored on a construction site. The objective of chemical management is to minimize the potential of stormwater contamination by construction chemicals through appropriate recognition, handling, storage, and disposal practices.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Designate a person responsible for chemical management
- Minimize the amount of chemicals and waste stored onsite
- Provide secondary containment that's 110 percent of the largest container in the containment
- Label all containers
- Prohibit the discharge of washout water
- Train workers in proper procedures
- Provide timely removal of waste materials

LIMITATIONS:

- Not intended to address site-assessment and pre-existing contamination
- Does not address demolition activities and potential pre-existing materials, such as lead and asbestos
- Does not address contaminated soils
- Does not address spill and leak response procedures
- Does not address chemicals associated with vehicle and equipment management

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Check for proper storage and evidence of leaks and spills
- Make sure all containers are labeled
- Check waste containers and dispose of the waste when 90 percent full
- Verify procedures are being followed
- Train new employees and regularly re-train all employees

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization
- Final Stabilization

Waste Management

Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *TCEQ regulations for hazardous waste*

4.1.1 Primary Use

These management practices, along with applicable OSHA, EPA, and TCEQ requirements, are implemented at construction sites to prevent chemicals, hazardous materials, and their wastes from becoming stormwater pollutants.

4.1.2 Applications

Chemical management is applicable on all construction sites where chemicals and hazardous materials are stored or used and could result in pollutants being discharged with stormwater. Many chemicals, such as paints, grease, concrete curing compounds, and pesticide are present at most construction sites. Chemical management is most effective when used in conjunction with controls in [Section 4.8 Spill and Leak Response Procedures](#).

Management of vehicle and equipment maintenance chemicals is applicable to all construction activities. These chemicals are the most common ones on construction sites; plus, there are specific stormwater permit requirements for vehicle and equipment maintenance. For these reasons, the management of chemicals associated with vehicles and equipment are found in [Section 4.10 Vehicle and Equipment Maintenance](#).

Chemical management techniques are based on proper recognition, handling, and disposal practices by construction workers and supervisors. Key elements are education and modification of workers' behavior and provisions for safe storage and disposal. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the procedures are followed.

The following list (not all inclusive) gives examples of targeted chemicals:

- Paints
- Solvents
- Stains
- Wood preservatives
- Cutting oils
- Greases
- Roofing tar
- Pesticides, herbicides, & fertilizers
- Concrete curing compound

It is not the intent of chemical management to supersede or replace normal site assessment and remediation procedures. Significant spills and/or contamination warrant immediate response by trained professionals. Chemical management shall be applied in combination with criteria in [Section 4.8 Spill and Leak Response Procedures](#).

4.1.3 Design Criteria

- Construction plan notes shall require controls for all chemicals, hazardous materials, and their wastes that are potentially exposed to precipitation or stormwater runoff.
- Show the location of chemical and hazardous waste storage and secondary containment on the drawings, or require the contractor to add this information.
- The contractor should be required to designate a site superintendent, foreman, safety officer, or other senior person who is onsite daily to be responsible for implementing chemical management.
- Specify use of the least hazardous chemical to perform a task when alternatives are available. To the extent possible, do not use chemicals that are classified as hazardous materials or that will generate

a hazardous waste. A hazardous material is any compound, mixture, solution, or substance containing a chemical listed on the EPA's *Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act* (EPA 550-B-01-003, October 2001), available at:

<http://www.epa.gov/ceppo/pubs/title3.pdf>

Chemical and Hazardous Material Storage

- As much as possible, minimize the exposure of building materials, building products, landscape materials, fertilizers, pesticides, herbicides, detergents, and other materials to precipitation and stormwater runoff.
- Chemicals and hazardous materials shall be stored in their original, manufacturers' containers, inside a shelter that prevents contact with rainfall and runoff.
- The amount of chemicals and hazardous materials stored onsite shall be minimized and limited to the materials necessary for the current phase of construction.
- Material Safety and Data Sheets (MSDSs) shall be available for all chemicals used or stored onsite.
- Chemical and hazardous materials shall be stored a minimum of 50 feet away from inlets, swales, drainage ways, channels, and other waters, if the site configuration provides sufficient space to do so. In no case shall material and waste sources be closer than 20 feet from inlets, swales, drainage ways, channels, and other waters.
- Use secondary containment controls for all hazardous materials. Containment shall be a minimum size of 110 percent of the largest chemical container stored within the containment.
- If an earthen pit or berm is used for secondary containment, it shall be lined with plastic or other material that is compatible with the chemical being stored.
- Chemical and hazardous material storage shall be in accordance with Federal and State of Texas regulations and with the municipality's fire codes.
- Storage locations shall have appropriate placards for emergency responders.
- Containers shall be kept closed except when materials are added or removed.
- Chemicals shall be dispensed using drip pans or within a lined, bermed area or using other spill/overflow protection measures.

Washout Procedures

- Many chemicals (e.g. stucco, paint, form release oils, curing compounds) used during construction may require washing of applicators or containers after use. The discharge of this wash water is prohibited.
- Wash water shall be collected in containers, labeled, and classified for correct waste disposal.
- A licensed waste hauler shall be used for wash water.

Chemical and Hazardous Waste Handling

- Ensure that adequate waste storage volume is available.
- Ensure that waste collection containers are conveniently located and compatible with the waste chemicals.
- Waste containers shall have lids and be emptied or hauled for disposal when they are 90 percent full or more frequently.
- Segregate potentially hazardous waste from non-hazardous construction waste and debris.

- Do not mix different chemical wastes. First, dangerous reactions may result. Second, all of the waste will be classified as the most hazardous waste in the container and will increase disposal costs.
- Clearly label all chemical and hazardous waste containers to identify which wastes are to be placed in each container.
- Based on information in the Material Safety Data Sheet, ensure that proper spill containment material is available onsite and maintained near the storage area.
- Do not allow potentially hazardous waste to be stored on the site for more than 90 days.
- Enforce hazardous waste handling and disposal procedures.

Disposal Procedures

- Regularly schedule waste removal to minimize onsite storage.
- Use only licensed waste haulers.
- For special and hazardous wastes, use licensed hazardous waste transporter that can classify, manifest and transport the special or hazardous wastes for disposal.
- Where possible, send wastes such as used oil to a recycler instead of a disposal facility.
- No chemical waste shall be buried, burned or otherwise disposed of onsite.

Education

- Instruct workers on safe chemical storage and disposal procedures.
- Instruct workers in identification of chemical pollutants and proper methods to contain them during storage and use.
- Educate workers of potential dangers to humans and the environment from chemical pollutants.
- Educate all workers on chemical storage and disposal procedures.
- Have regular meetings to discuss and reinforce identification, handling and disposal procedures (incorporate in regular safety seminars).
- Establish a program to train new employees.

Quality Control

- Designated personnel shall monitor onsite chemical storage, use, and disposal procedures.
- Educate and if necessary, discipline workers who violate procedures.
- Retain trip reports and manifests that document the recycling or disposal location for all chemical, special, and hazardous wastes that all hauled from the site.

4.1.4 *Design Guidance and Specifications*

National guidance for response procedures are established by the Environmental Protection Agency (EPA) in the Code of Federal Regulations (CFR). Specific sections addressing spills are governed by:

- 40 CFR Part 261 Identification and Listing of Hazardous Waste.
- 40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste.
- 40 CFR Part 263 Standards Applicable to Transporters of Hazardous Waste.
- 49 CFR Parts 171-178 of the Transportation Hazardous Materials Regulations.

Guidance for storing, labeling, and managing hazardous waste in the State of Texas are established by the Texas Commission on Environmental Quality (TCEQ) in the Texas Administrative Code Title 30, Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste.

No specification for chemical management measures is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.1.5 Inspection and Maintenance Requirements

Chemical management measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for proper storage and evidence of leaks or spills. Check that all chemicals, hazardous materials, and wastes are properly stored and labeled. If not stored properly, take corrective action, and reinforce procedures through re-education of employees.

If leaks or spills have occurred, check that proper clean up and reporting procedures have been followed. If procedures have not been followed, take corrective action. Check that all employees have been trained in spill and leak procedures as detailed in [Section 4.8 Spill and Leak Response Procedure](#).

4.2 Concrete Sawcutting Waste Management

Waste Control

Description: Sawcutting of concrete pavement is a routine practice used to control shrinkage cracking immediately following placement of plastic concrete. It is also used to remove curb sections and pavement sections for pavement repairs, utility trenches, and driveways. Sawcutting for joints involves sawing a narrow, shallow groove in the concrete, while sawcutting for removals is usually done full depth through the slab. Water is used to control saw blade temperature and to flush the detritus from the sawed groove. The objective of concrete sawcutting waste management is to prevent the resulting slurry of process water and fine particles with its high pH from becoming a water pollutant.

<p style="text-align: center;"><u>KEY CONSIDERATIONS</u></p> <p>DESIGN CRITERIA:</p> <ul style="list-style-type: none"> ● Prohibit discharge of untreated slurry ● Educate employees on proper procedures ● Continuously vacuum slurry and cuttings during sawcutting operation ● Block inlets to prevent discharges ● Establish an onsite containment area (minimum 1 ft freeboard) if immediate disposal of the vacuumed slurry is not feasible ● Water evaporation and concrete recycling are the recommended disposal methods when slurry is not vacuumed <p>LIMITATIONS:</p> <ul style="list-style-type: none"> ● Only one part of concrete waste management ● Does not address concrete demolition waste <p>MAINTENANCE REQUIREMENTS:</p> <ul style="list-style-type: none"> ● Check for uncollected slurry after all sawcutting operations ● Inspect collection areas and repair containment as needed ● Dispose of sediment and cuttings when collection area volume is reduced by 50 percent ● Train new employees and regularly re-train all employees 	<p style="text-align: center;"><u>APPLICATIONS</u></p> <p>Perimeter Control</p> <p>Slope Protection</p> <p>Sediment Barrier</p> <p>Channel Protection</p> <p>Temporary Stabilization</p> <p>Final Stabilization</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">Waste Management</div> <p>Housekeeping Practices</p>
<p style="text-align: center;"><u>TARGETED POLLUTANTS</u></p> <ul style="list-style-type: none"> ○ Sediment ● Nutrients & Toxic Materials ○ Oil & Grease ○ Floatable Materials ● Other Construction Wastes 	<p style="text-align: center;"><u>IMPLEMENTATION CONSIDERATIONS</u></p> <ul style="list-style-type: none"> ○ Capital Costs ● Maintenance ● Training ○ Suitability for Slopes > 5% <p>Other Considerations:</p> <ul style="list-style-type: none"> ● <i>Coordinate with concrete waste management</i>

4.2.1 Primary Use

Pavement sawcutting is performed on almost all construction projects that include removal or installation of pavement. Properly managing the slurry and cuttings from sawcutting prevents them from affecting surface and ground water resources.

4.2.2 Applications

Concrete sawcutting waste management is applicable on construction activities where sawcutting is part of the work, regardless of the size of the total area disturbed. It is also applicable on repair and maintenance projects that may not be required to implement erosion and sediment controls.

Concrete sawcutting waste management is based on the proper collection and disposal of the slurry and cuttings. Employee education is critical to ensuring correct procedures are followed.

4.2.3 Design Criteria

- Construction plan notes shall include proper concrete sawcutting waste management procedures.
- The contractor should be required to designate the site superintendent, foreman, or other person who is responsible for concrete sawcutting to also be responsible for concrete sawcutting waste management.

Slurry Collection

- During sawcutting operations, the slurry and cuttings shall be continuously vacuumed or otherwise recovered and not be allowed to discharge from the site.
- If the pavement to be cut is near a storm drain inlet, the inlet shall be blocked by sandbags or equivalent temporary measures to prevent the slurry from entering the inlet. Remove the sandbags immediately after completing sawcutting operations, so they do not cause drainage problems during storm events.
- The slurry and cuttings shall not be allowed to remain on the pavement to dry out.

Slurry Disposal

- Develop pre-determined, safe slurry disposal areas.
- Collected slurry and cuttings should be immediately hauled from the site for disposal at a waste facility. If this is not possible, the slurry and cuttings shall be discharged into onsite containment.
- The onsite containment may be an excavated or bermed pit lined with plastic that is a minimum of 10 millimeters thick. Refer to [Section 4.3 Concrete Waste Management](#) for additional design criteria and an example schematic. If the project includes placement of new concrete, slurry from sawcutting may be disposed of in facilities designated for the washout of concrete trucks instead constructing a separate containment.
- The containment shall be located a minimum of 50 feet away from inlets, swales, drainage ways, channels, and other waters, if the site configuration provides sufficient space to do so. In no case shall the collection area be closer than 20 feet from inlets, swales, drainage ways, channels and other waters.
- Several, portable, pre-fabricated, concrete washout, collection basins are commercially available and are an acceptable alternative to an onsite containment pit.
- Remove waste concrete when the containment is half full. Always maintain a minimum of one foot freeboard.

- Onsite evaporation of slurry water and recycling of the concrete waste is the preferred disposal method. When this is not feasible, discharge from the collection area shall only be allowed if a passive treatment system is used to remove the fines. Criteria are in [Section 3.7 Passive Treatment System](#). Mechanical mixing is required in the collection area. The pH must be tested, and discharge is allowed only if the pH does not exceed 8.0. The pH may be lowered by adding sulfuric acid to the slurry water. Dewatering of the collection area after treatment shall follow the criteria in [Section 3.3 Dewatering Controls](#).
- Care shall be exercised when treating the slurry water for discharge. Monitoring must be implemented to verify that discharges from the collection area do not violate groundwater or surface water quality standards.
- Geotextile fabrics such as those used for silt fence should not be used to control sawcutting waste, since the grain size is significantly smaller than the apparent opening size of the fabric.
- Use waste and recycling haulers and facilities approved by the local municipality.

Education

- Supervisors must be made aware of the potential environmental consequences of improperly handling sawcutting slurry and waste.
- Train all workers performing sawcutting operations on the proper slurry and cuttings collection and disposal procedures.

4.2.4 Design Guidance and Specifications

No specification for concrete sawcutting waste management is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.2.5 Inspection and Maintenance Requirements

Concrete sawcutting waste management measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Project personnel should inspect the operations to assure that operators are diligent in controlling the water produced by the sawcutting activities. Pavement should be inspected each day after operations to ensure that waste removal has been adequately performed. Residual waste should be cleaned. Reinforce proper procedures with workers.

Inspect the collection area for signs of unauthorized discharges. Repair containment area as needed. Remove sediment and fines when the collection area volume is reduced by 50 percent.

4.3 Concrete Waste Management

Waste Control

Description: Concrete waste at construction sites comes in two forms: 1) excess fresh concrete mix, including residual mix washed from trucks and equipment, and 2) concrete dust and concrete debris resulting from demolition. Both forms have the potential to impact water quality through stormwater runoff contact with the waste. The objective of concrete waste management is to dispose of these wastes in a manner that protects surface and ground water.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Prohibit the discharge of untreated concrete washout water
- Prohibit dumping waste concrete anywhere except at pre-determined, regulated, recycling or disposal sites
- Provide a washout containment with a minimum of 6 cubic feet of containment volume for every 10 cubic yards of concrete placed
- Minimum 1 foot freeboard on containment
- Minimum 10 mil plastic lining of containment
- Washout water evaporation and concrete recycling are the recommended disposal methods
- Educate drivers and operators on proper disposal and equipment cleaning procedures

LIMITATIONS:

- Does not address concrete sawcutting waste

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Check for and repair any damage to washout containment areas
- Clean up any overflow of washout pits
- Regularly remove and properly dispose of concrete waste

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- None

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

4.3.1 Primary Use

Concrete waste management is used to prevent the discharge of concrete wash water and waste into stormwater runoff. A number of water quality parameters can be affected by the introduction of concrete, especially fresh concrete. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life. Suspended solids in the form of both cement and aggregated dust are also generated from both fresh and demolished concrete waste.

4.3.2 Applications

Concrete waste management is applicable to all construction sites where existing concrete is being demolished or new concrete is being placed, regardless of the size of the total area disturbed. It is also applicable on repair and maintenance projects that may not be required to implement erosion and sediment controls.

4.3.3 Design Criteria

- The discharge of washout water to an inlet, swale, or any portion of the storm drainage system or a natural drainage system (e.g. channel) shall be prohibited.
- Construction plan notes shall state that the discharge of concrete washout to anything except a designated containment area is prohibited.
- Show the location of the concrete washout containment on the drawings, or require the contractor to provide this information.
- The contractor should be required to designate the site superintendent, foreman, or other person who is responsible for concrete placement to also be responsible for concrete waste management.

Unacceptable Waste Concrete Disposal Practices

- Dumping in vacant areas on the job-site.
- Illicit dumping onto off-site lots or any other placed not permitted to receive construction demolition debris.
- Dumping into ditches, drainage facilities, or natural water ways.
- Using concrete waste as fill material or bank stabilization.

Recommended Disposal Procedures

- Identify pre-determined, regulated, facilities for disposal of solid concrete waste. Whenever possible, haul the concrete waste to a recycling facility. Disposal facilities must have a Class IV (or more stringent) municipal solid waste permit from the TCEQ.
- A concrete washout pit or other containment shall be installed a minimum of 50 feet away from inlets, swales, drainage ways, channels, and other waters, if the site configuration provides sufficient space to do so. In no case shall concrete washout occur closer than 20 feet from inlets, swales, drainage ways, channels and other waters.
- Provide a washout area with a minimum of 6 cubic feet of containment volume for every 10 cubic yards of concrete poured. Alternatively, the designer may provide calculations sizing the containment based on the number of concrete trucks and pumps to be washed out.
- The containment shall be lined with plastic (minimum 10 millimeters thick) or an equivalent measure to prevent seepage to groundwater.
- Mosquitoes do not typically breed in the high pH of concrete washout water. However, the concrete washout containment should be managed in a manner that prevents the collection of other water that could be a potential breeding habitat.

- Do not excavate the washout area until the day before the start of concrete placement to minimize the potential for collecting stormwater.
- Do not discharge any water or wastewater into the containment except for concrete washout to prevent dilution of the high pH environment that is hostile to mosquitoes.
- Remove the waste concrete and grade the containment closed within a week of completing concrete placement. Do not leave it open to collect stormwater.
- If water must be pumped from the containment, it shall be collected in a tank, neutralized to lower the pH, and then hauled to a treatment facility for disposal. Alternatively, it may be hauled to a batch plant that has an onsite collection facility for concrete washout water.
- Do **not** pump water directly from the containment to the Municipal Separate Storm Sewer System or a natural drainage way without treating for removal of fine particles and neutralization of the pH.
- Multiple concrete washout areas may be needed for larger projects to allow for drying time and proper disposal of the washout water and waste concrete.
- Portable, pre-fabricated, concrete washout containers are commercially available and are an acceptable alternative to excavating a washout area.
- Evaporation of the washout water and recycling of the concrete waste is the preferred disposal method. After the water has evaporated from the washout containment, the remaining cuttings and fine sediment shall be hauled from the site to a concrete recycling facility or a solid waste disposal facility.
- Remove waste concrete when the washout containment is half full. Always maintain a minimum of one foot freeboard.
- Use waste and recycling haulers and facilities approved by the local municipality.
- When evaporation of the washout water is not feasible, discharge from the collection area shall only be allowed if a passive treatment system is used to remove the fines. Criteria are in [Section 3.7 Passive Treatment System](#). Mechanical mixing is required within the containment for passive treatment to be effective. The pH must be tested, and discharge is allowed only if the pH does not exceed 8.0. The pH may be lowered by adding sulfuric acid to the water. Dewatering of the collection area after treatment shall follow the criteria in [Section 3.3 Dewatering Controls](#).
- Care shall be exercised when treating the concrete washout water for discharge. Monitoring must be implemented to verify that discharges do not violate groundwater or surface water quality standards.
- On large projects that are using a nearby batch plant, a washout facility associated with the plant and under the plant's TPDES Multi-Sector General Permit may be used instead of installing an onsite containment area for truck washout.

Education

- Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).
- Supervisors must be made aware of the potential environmental consequences of improperly handled concrete waste.

Enforcement

- The construction site manager or foreman must ensure that employees and pre-mix companies follow proper procedures for concrete disposal and equipment washing.
- Employees violating disposal or equipment cleaning directives must be re-educated or disciplined if necessary.

Demolition Practices

- Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters.
- Spray water on structures being demolished to wet them before start of demolition operations. Reapply water whenever dust is observed.
- Construct sediment traps or other types of sediment detention devices downstream of demolition activities to capture and treat runoff from demolition wetting operations.

4.3.4 *Design Guidance and Specifications*

No specification for concrete waste management is currently available in the Standard Specifications for Public Works – North Central Texas Council of Governemtns.

4.3.5 *Inspection and Maintenance Requirements*

Concrete waste management controls should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for proper handling of concrete waste. Check concrete washout pits and make repairs as needed. Washout pits should not be allowed to overflow. Maintain a schedule to regularly remove concrete waste and prevent over-filling.

If illicit dumping of concrete is found, remove the waste and reinforce proper disposal methods through education of employees.

4.3.6 *Example Schematics*

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

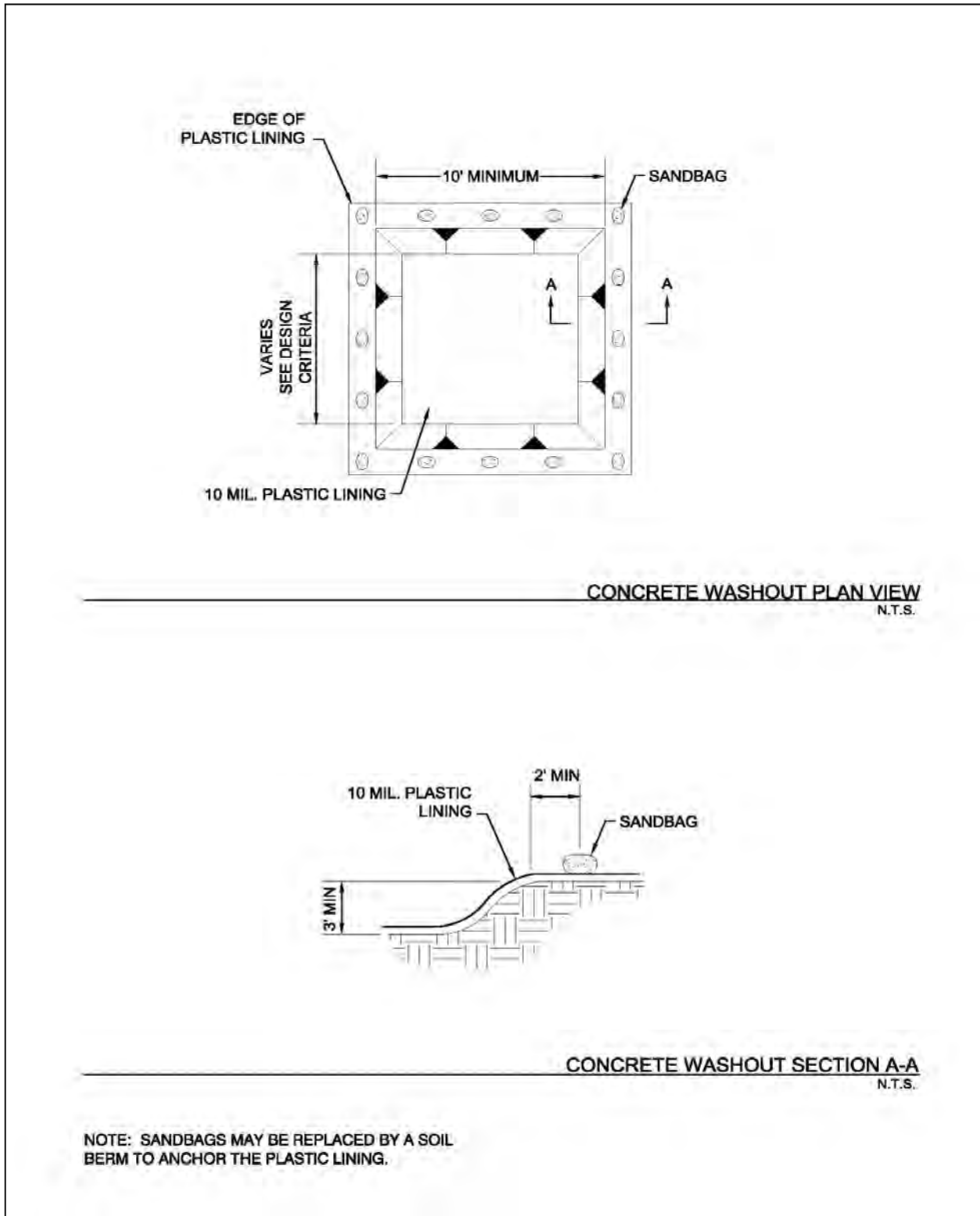


Figure 4.1 Schematics of Concrete Washout Containment

4.4 Debris and Trash Management

Waste Control

<p>Description: Large volumes of debris and trash are often generated at construction sites, including packaging, pallets, wood waste, personal trash, scrap material, and a variety of other wastes. The objective of debris and trash management is to minimize the potential of stormwater contamination from solid waste through appropriate storage and disposal practices. Recycling of construction debris is encouraged to reduce the volume of material to be disposed of and associated costs of disposal.</p>			
<p style="text-align: center;"><u>KEY CONSIDERATIONS</u></p> <p>DESIGN CRITERIA:</p> <ul style="list-style-type: none"> • Implement a job-site waste handling and disposal education and awareness program • Provide sufficient and appropriate waste storage containers • Provide timely removal of stored solid waste materials • Train workers and monitor compliance <p>LIMITATIONS:</p> <ul style="list-style-type: none"> • Only addresses non-hazardous solid waste • One part of a comprehensive construction site waste management program <p>MAINTENANCE REQUIREMENTS:</p> <ul style="list-style-type: none"> • Inspect regularly • Empty waste containers regularly • Clean up loose trash and debris daily • Verify procedures are being followed • Train new employees and regularly re-train all employees 	<p style="text-align: center;"><u>APPLICATIONS</u></p> <p>Perimeter Control</p> <p>Slope Protection</p> <p>Sediment Barrier</p> <p>Channel Protection</p> <p>Temporary Stabilization</p> <p>Final Stabilization</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Waste Management</td> </tr> <tr> <td style="text-align: center;">Housekeeping Practices</td> </tr> </table>	Waste Management	Housekeeping Practices
Waste Management			
Housekeeping Practices			
<p style="text-align: center;"><u>TARGETED POLLUTANTS</u></p> <ul style="list-style-type: none"> ○ Sediment ● Nutrients & Toxic Materials ○ Oil & Grease ● Floatable Materials ● Other Construction Wastes 	<p style="text-align: center;"><u>IMPLEMENTATION CONSIDERATIONS</u></p> <ul style="list-style-type: none"> ● Capital Costs ● Maintenance ● Training ○ Suitability for Slopes > 5% <p>Other Considerations:</p> <ul style="list-style-type: none"> • <i>None</i> 		

4.4.1 Primary Use

Debris and trash management is used to minimize floatables and other wastes in stormwater. By controlling the trash and debris onsite, stormwater quality is improved and the need for extensive clean up upon completion of the project is reduced.

4.4.2 Applications

Debris and trash management is applicable on all construction sites where workers are present. Even if the only construction activity is earthwork, workers will still have drink bottles, lunch bags, and other wastes that must be managed.

Solid waste management for construction sites is based on proper storage and disposal practices by construction workers and supervisors. Key elements of the program are education and modification of improper disposal habits. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the procedures are followed.

The following are lists describing the type of targeted materials.

- Construction (and Demolition) Debris:
 - Dimensional lumber
 - Miscellaneous wood (pallets, plywood, etc)
 - Copper (pipe and electrical wiring)
 - Miscellaneous metal (studs, pipe, conduit, sheathing, nails, etc)
 - Insulation
 - Brick and mortar
 - Shingles
 - Roofing materials
 - Gypsum board
- Trash:
 - Paper and cardboard (packaging, containers, wrappers)
 - Plastic (packaging, bottles, containers)
 - Styrofoam (cups, packing, and forms)
 - Food and beverage containers
 - Food waste

4.4.3 Design Criteria

- Construction plan notes shall include proper debris and trash management procedures.
- Show the location of waste storage containers on the drawings, or require the contractor to add this information.
- The contractor should be required to designate a site superintendent, foreman, safety officer, or other senior person who is onsite daily to be responsible for implementing debris and trash management.

Storage Procedures

- All waste sources and storage areas shall be located a minimum of 50 feet away from inlets, swales, drainage ways, channels and other waters, if the site configuration provides sufficient space to do so.

In no case shall material and waste sources be closer than 20 feet from inlets, swales, drainage ways, channels, and other waters.

- Construction waste and trash shall be stored in a manner that minimizes its exposure to precipitation and stormwater runoff.
- Whenever possible, minimize production of debris and trash.
- Instruct construction workers in proper debris and trash storage and handling procedures.
- Segregate potentially hazardous waste from non-hazardous construction site debris. Hazardous waste shall be managed according to the criteria in *Section 4.1 Chemical Management*.
- Segregate recyclable or re-usable construction debris from other waste materials. A goal of re-using or recycling 50 percent of the construction debris and waste is recommended.
- Keep debris and trash under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff and prevents light materials from blowing out.
- Check the municipality's storage requirements. Some municipalities have specific requirements for the size and type of waste containers for construction sites.
- Do not allow trash containers to overflow. Do not allow waste materials to accumulate on the ground.
- Prohibit littering by workers and visitors.
- Police site daily for litter and debris.
- Enforce solid waste handling and storage procedures.

Disposal Procedures

- If feasible, recycle construction and demolition debris such as wood, metal, and concrete.
- Trash and debris shall be removed from the site at regular intervals that are scheduled to empty containers when they are 90 percent full or more frequently.
- General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).
- Use waste and recycling haulers/facilities approved by the local municipality.
- No waste, trash, or debris shall be buried, burned or otherwise disposed of onsite.
- Cleared trees and brush may be burned if authorized by the municipality and proper permits are obtained from the county and/or TCEQ. Chipping of trees and brush for use as mulch is the preferred alternative to burning or offsite disposal.

Education

- Educate all workers on solid waste storage and disposal procedures.
- Instruct workers in identification of solid waste and hazardous waste.
- Have regular meetings to discuss and reinforce disposal procedures (incorporate in regular safety seminars).
- Clearly mark on all debris and trash containers which materials are acceptable.

Quality Control

- Foreman and/or construction supervisor shall monitor onsite solid waste storage and disposal procedures.
- Check the site, particularly areas frequented by workers during lunch and breaks, for loose trash and debris and the end of each work day.

- Discipline workers who repeatedly violate procedures.

4.4.4 Design Guidance and Specifications

No specification for debris and trash management measures is found currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.4.5 Inspection and Maintenance Requirements

Debris and trash management measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit). If waste containers are overflowing, call the waste hauler immediately for a pick-up. If loose trash and debris are found around the site, reinforce proper waste management procedures through education of workers.

Construction sites must maintain separate waste containers clearly marked for non-hazardous, hazardous and recyclable waste. Check solid waste containers for chemical, special, or hazardous wastes that are improperly placed in them. These wastes shall be removed and handled according to criteria in [Section 4.1 Chemical Management](#).

The site should be checked for loose litter and debris at the end of each working day.

4.5 Hyper-Chlorinated Water Management

Waste Control

Description: Hyper-chlorinated water is routinely used to disinfect new waterlines and appurtenances. Chlorine protects humans from pathogens in water, but it is toxic to aquatic ecosystems. The objective of hyper-chlorinated water management is to discharge the water in a manner that protects surface water and related aquatic ecosystems.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Educate employees on proper procedures
- Discharge to sanitary sewer if the system operator approves
- Discharge water onsite for natural chlorine attenuation
- Use appropriate dosage for chemical de-chlorination based on chemical used and chlorine concentration
- Chlorine concentration must be less than 4 ppm before leaving the site
- Use velocity dissipation devices for discharges
- Always monitor receiving waters for negative effects

LIMITATIONS:

- Discharge to sanitary sewer limited by sewer capacity
- Discharges limited to areas without vegetation that is to be preserved
- Wet, cool, and overcast days limits chlorine attenuation and removal

MAINTENANCE REQUIREMENTS:

- Monitor continuously during discharge
- Check for and repair any erosion caused by discharge
- Sample and test receiving water hourly for chlorine

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *None*

4.5.1 Primary Use

Hyper-chlorinated water is used to disinfect new water lines.

4.5.2 Applications

Construction sites that install new water lines or repair or replace existing water lines should use hyper-chlorinated water management measures.

4.5.3 Design Criteria

- Drawing notes shall include procedures for the proper discharge of hyper-chlorinated water from waterline disinfection.
- The contractor should be required to designate the site superintendent, foreman, or other person who is responsible for water line disinfection to also be responsible for hyper-chlorinated water management.
- Educate employees about the environmental hazards of high chlorine concentrations and the proper procedures for handling hyper-chlorinated water.
- Hyper-chlorinated water shall not be discharged to the environment unless the chlorine concentration is reduced to 4 ppm or less by chemically treating to dechlorinate or by onsite retention until natural attenuation occurs.
- Water with a measurable chlorine concentration of less than 4 ppm is considered potable and an authorized discharge; however, large volumes of water with chlorine at this concentration can still be toxic to aquatic ecosystems. Do not discharge water that has been de-chlorinated to 4 ppm directly to surface water. It shall be discharged onto vegetation or through a conveyance system for further attenuation of the chlorine before it reaches surface water.
- Discharges of high flow rate and velocities shall be directed to velocity dissipation devices.

Discharge to Sanitary Sewers

- The preferred method of disposal for hyper-chlorinated water is discharge into a sanitary sewer system.
- Permission from the sanitary sewer operator **must** be obtained to discharge to the sanitary sewer.
- Limitations on discharges to the sanitary sewer are the capacity of the sanitary sewer and the availability of a sewer manhole near the construction site.
- The designer shall verify that the sanitary sewer is capable of receiving the flow rate that will result from dewatering the disinfected line within the required time.
- Consideration should be given to timing the discharge with the daily low flow period for the sanitary sewer system.

Onsite Discharge

- Hyper-chlorinated water may be applied to the construction site if it can be done without causing a discharge. The feasibility of this option is dependent on the volume of water, the size of the construction site, and the conditions of the site. Site application should not be done when the soil moisture content is high due to recent storm events.
- Chlorine can burn vegetation, so it should not be used to water vegetation that is being used for stabilization, vegetated filters or buffers, or other vegetation to be preserved.
- Hyper-chlorinated water may be discharged to an onsite retention area until natural attenuation occurs. The area may be a dry stormwater retention basin, or a portion of the site may be graded to form a temporary pit or bermed area.

- Natural attenuation of the chlorine may be aided by aeration. Air can be added to the water by directing the discharge over a rough surface (e.g. riprap) before it enters the temporary retention area or an aeration device (e.g. circulation pump) can be placed in the retention area.
- Onsite discharge may require several hours to a few days before the water is safe to discharge. The rate at which chlorine will attenuate is affected by soil conditions and weather conditions. Attenuation will occur quickest during warm, sunny, dry periods.
- If the hyper-chlorinated water is retained in a pit or basin, and then pumped to discharge, pumping shall follow the criteria in [Section 3.3 Dewatering Controls](#).

Chemical Dechlorination

- If non-chemical means of dechlorination are not feasible, chemical methods may be used to neutralize the chlorine before discharging the hyper-chlorinated water.
- Vitamin C in the form of ascorbic acid or sodium ascorbate is the preferred dechlorination agent.
- Consider the National Fire Protection Association (NFPA) rating when selecting a dechlorination chemical. The NFPA rating is given by a series of three numbers ranging from 0 to 4, with 0 being no risk and 4 the highest risk. The sequence of numbers rank the health hazard, flammability risk and reactivity risk of the chemical. A NFPA rating of 0,0,0 indicates no risk for all three categories.
- Ensure appropriate personal protective equipment (PPE) is specified for workers depending on the chemical being used to neutralize the chlorine.
- The chemicals listed in Table 4.1 may be used to neutralize chlorine.

Dechlorinating Agent	Dosing Rate (parts Agent : parts Chlorine)	Advantages	Disadvantages
Ascorbic Acid (form of Vitamin C)	2.5:1	<ul style="list-style-type: none"> • Not toxic to aquatic species • Quick reaction time • NFPA rating of 0,0,0 	<ul style="list-style-type: none"> • May lower pH in receiving water
Sodium Ascorbate (form of Vitamin C)	2.8:1	<ul style="list-style-type: none"> • Does not affect pH • Not toxic to aquatic species • Quick reaction time • NFPA rating of 0,0,0 	<ul style="list-style-type: none"> • Greater amount needed than Ascorbic Acid • More expensive
Sodium Thiosulfate	2:1 to 7:1 depending on pH	<ul style="list-style-type: none"> • Less expensive • Readily available • Long history of use (familiarity) 	<ul style="list-style-type: none"> • Must calculate dosage based on pH • Skin, eye, nose and throat irritant • Consumes oxygen in water • May encourage bacterial growth in receiving streams
Calcium Thiosulfate	1:1 to 0.5:1 depending on pH	<ul style="list-style-type: none"> • Less expensive • Not toxic to aquatic species • NFPA rating of 0,0,0 	<ul style="list-style-type: none"> • Must calculate dosage based on pH • Over-dosing produces suspended solids • Over-dosing may increase turbidity in receiving water • May encourage bacterial growth in receiving streams

- The designer shall confirm dosages with the chemical supplier before using the dechlorination agent.

- Chlorine and residual agent concentrations and the pH of the discharged water shall be monitored at least hourly using field tests.
- The treated water should be discharged onto pavement or into a dry conveyance system to allow aeration and reaction time before the dechlorinated water reaches the receiving water. The receiving water should be closely monitored for any signs of negative effects from the discharge.

4.5.4 Design Guidance and Specifications

No specification for hyper-chlorinated water management is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.5.5 Inspection and Maintenance Requirements

Hyper-chlorinated water management measures should be monitored continuously while the hyper-chlorinated water is being discharged. Discharges to a sanitary sewer should be monitored for back-ups or overflows that indicate the discharge is exceeding the sewer's capacity. If these occur, the rate of discharge must be decreased or another discharge method is needed.

Onsite or chemically treated discharge should be monitored for chlorine and residual chemical concentrations. Verify that discharges are not causing erosion, and modify the discharge to use velocity dissipation devices if erosion is occurring. Repair any eroded areas. If water is being pumped from a temporary retention area, verify that appropriate dewatering controls are in place.

For all discharges, frequently inspect the receiving water for any evidence of negative effects. Sample and test the receiving water hourly for chlorine. Stop the discharge immediately if chlorine is detected and modify the discharge procedures before resuming.

4.6 Sandblasting Waste Management

Waste Control

<p>Description: The objective of sandblasting waste management is to minimize the potential of stormwater quality degradation from sandblasting activities at construction sites. The key issues in this program are prudent handling and storage of sandblast media, dust suppression, and proper collection and disposal of spent media. It is not the intent of this control to outline all of the worker safety issues pertinent to this practice. Safety issues should be addressed by construction safety programs as well as local, state, and federal regulations.</p>	
<p style="text-align: center;"><u>KEY CONSIDERATIONS</u></p> <p>DESIGN CRITERIA:</p> <ul style="list-style-type: none"> ● Prohibit discharge of sandblasting waste ● Provide site specific fugitive dust control and containment equipment ● Educate employees on proper procedures ● Provide proper sandblast equipment for the job ● Ensure compliance by supervisors and workers <p>LIMITATIONS:</p> <ul style="list-style-type: none"> ● Does not address hazardous materials that may be present in the waste ● Does not address spill and leak response procedures <p>MAINTENANCE REQUIREMENTS:</p> <ul style="list-style-type: none"> ● Inspect regularly ● Contain and dispose of sandblast grit ● Train new employees and regularly re-train all employees 	<p style="text-align: center;"><u>APPLICATIONS</u></p> <p>Perimeter Control</p> <p>Slope Protection</p> <p>Sediment Barrier</p> <p>Channel Protection</p> <p>Temporary Stabilization</p> <p>Final Stabilization</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> <p>Waste Management</p> </div> <p>Housekeeping Practices</p>
<p style="text-align: center;"><u>TARGETED POLLUTANTS</u></p> <ul style="list-style-type: none"> ○ Sediment ● Nutrients & Toxic Materials ○ Oil & Grease ○ Floatable Materials ● Other Construction Wastes 	<p style="text-align: center;"><u>IMPLEMENTATION CONSIDERATIONS</u></p> <ul style="list-style-type: none"> ● Capital Costs ● Maintenance ● Training ○ Suitability for Slopes > 5% <p>Other Considerations:</p> <ul style="list-style-type: none"> ● <i>OSHA requirements</i> ● <i>Special procedures for sandblasting operations on structures known to contain hazardous materials</i> ● <i>Possible site assessment or remediation required if hazardous materials present</i>

4.6.1 Primary Use

Sandblasting is typically used to clean a surface or prepare a surface for coatings. Since the sandblasting media consists of fine abrasive granules, it can be easily transported by running water. Sandblasting activities typically create a significant dust problem that must be contained and collected to prevent off-site migration of fines. Particular attention must be paid to sandblasting work on bridges, box culverts, and head walls that span or are immediately adjacent to streams and waterways.

4.6.2 Applications

This control should be implemented when sandblasting operations will occur on a construction site.

If a discharge of sandblasting waste occurs, it shall be considered a spill and handled according to the criteria in [Section 4.8 Spill and Leak Response Procedures](#).

4.6.3 Design Criteria

- Construction plan notes shall include proper sandblasting waste management procedures.
- The contractor should be required to designate the site superintendent, foreman, or other person who is responsible for sandblasting to also be responsible for sandblasting waste management.
- Prohibit the discharge of sandblasting waste.

Operational Procedures

- Use only inert, non-degradable sandblast media.
- Use appropriate equipment for the job; do not over-blast.
- Wherever possible, blast in a downward direction.
- Install a windsock or other wind direction instrument.
- Cease blasting activities in high winds or if wind direction could transport grit to drainage facilities.
- Install dust shielding around sandblasting areas.
- Collect and dispose of all spent sandblast grit, use dust containment fabrics and dust collection hoppers and barrels.
- Non-hazardous sandblast grit may be disposed in permitted construction debris landfills or permitted sanitary landfills.
- If sandblast media cannot be fully contained, construct sediment traps downstream from blasting area where appropriate.
- Use sand fencing where appropriate in areas where blast media cannot be fully contained.
- If necessary, install misting equipment to remove sandblast grit from the air prevent runoff from misting operations from entering drainage systems.
- Use vacuum grit collection systems where possible.
- Keep records of sandblasting materials, procedures, and weather conditions on a daily basis.
- Take all reasonable precautions to ensure that sandblasting grit is contained and kept away from drainage structures.

Educational Issues

- Educate all onsite employees of potential dangers to humans and the environment from sandblast grit.

- Instruct all onsite employees of the potential hazardous nature of sandblast grit and the possible symptoms of over-exposure to sandblast grit.
- Instruct operators of sandblasting equipment on safety procedures and personal protection equipment.
- Instruct operators on proper procedures regarding storage, handling and containment of sandblast grit.
- Instruct operators and supervisors on current local, state and federal regulations regarding fugitive dust and hazardous waste from sandblast grit.
- Have weekly meetings with operators to discuss and reinforce proper operational procedures.
- Establish a continuing education program to indoctrinate new employees.

Materials Handling Recommendations

- Sandblast media should always be stored under cover away from drainage structures.
- Ensure that stored media or grit is not subject to transport by wind.
- Ensure that all sandblasting equipment and storage containers comply with current local, state and federal regulations.
- Refer to [Section 4.1 Chemical Management](#) if sandblast grit is known or suspected to contain hazardous components.
- Capture and treat runoff, which comes into contact with sandblasting material or waste.

Quality Assurance

- Foreman and/or construction supervisor should monitor all sandblasting activities and safety procedures.
- Educate and if necessary, discipline workers who violate procedures.
- Take all reasonable precautions to ensure that sandblast grit is not transported off-site or into drainage facilities.

4.6.4 Design Guidance and Specifications

No specification for sandblasting waste management is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.6.5 Inspection and Maintenance Requirements

Sandblasting waste management measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Verify that sandblasting grit is contained and disposed of properly. Check for downstream locations and the off-site perimeter for evidence of discharges or off-site transport by wind.

Check that daily records of sandblasting activities are current. Hold weekly meetings with operators to reinforce proper procedures. Regularly re-educate employees on potential dangers and hazards, safety procedures and proper handling.

4.7 Sanitary Waste Management

Waste Control

Description: The objective of sanitary waste management is to provide for collection and disposal of sanitary waste in a manner that minimizes the exposure to precipitation and stormwater. This is most often accomplished by providing portable facilities for construction site workers.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Provide sanitary facilities at the rate of one toilet per 10 workers for a 40-50 hour work week
- Locate portable toilets a minimum of 50 feet away from storm drain inlets, conveyance channels or surface waters
- If unable to meet the 50 foot requirement, locate portable toilets at least 20 feet away and provide secondary containment
- Show location of portable toilets on the drawings
- Have a plan to clean up spills

LIMITATIONS:

- Multiple facilities and/or facilities in several locations may be needed to adequately serve a construction site
- Facilities are subject to vandalism if not within a secured construction site

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Check for proper servicing, leaks and spills
- Service toilets at the frequency recommended by the supplier

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

Perimeter Control

Slope Protection

Sediment Barrier

Channel Protection

Temporary Stabilization

Final Stabilization

Waste Management

Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *None*

4.7.1 Primary Use

Sanitary facilities are used to properly store and dispose of sanitary wastes that are generated onsite.

4.7.2 Applications

Sanitary facilities should be available to workers at all construction sites. If permanent facilities are not available, portable toilets are placed at the construction site.

4.7.3 Design Criteria

- Construction plan notes shall include requirements for the contractor to provide an appropriate number of portable toilets based on the number of employees using the toilets and the hours they will work. The typical standard is one portable toilet per 10 workers for a 40-50 hour work week.
- The location of portable toilets shall be shown on the drawings.
- Sanitary facilities shall be placed a minimum of 50 feet away from storm drain inlets, conveyance channels or surface waters. If unable to meet the 50 foot requirement due to site configuration, portable toilets shall be a minimum of 20 feet away from storm drain inlets, conveyance channels or surface waters and secondary containment shall be provided in case of spills.
- The location of the portable toilets shall be accessible to maintenance trucks without damaging erosion and sediment controls or causing erosion or tracking problems.
- Sanitary facilities shall be fully enclosed and designed in a manner that minimizes the exposure of sanitary waste to precipitation and stormwater runoff.
- When high winds are expected, portable toilets shall be anchored or otherwise secured to prevent them from being blown over.
- The company that supplies and maintains the portable toilets shall be notified immediately if a toilet is tipped over or damaged in a way that results in a discharge. Discharged solid matter shall be vacuumed into the septic truck by the company that maintains the toilets. A solution of 10 parts water to 1 parts bleach shall be applied to all ground surfaces contaminated by liquids from the toilet.
- The operator of the municipal separate storm sewer system (MS4) shall be notified if a discharge from the portable toilets enters the MS4 or a natural channel.

4.7.4 Design Guidance and Specifications

No specification for sanitary facilities is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.7.5 Inspection and Maintenance Requirements

Sanitary facilities should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for proper servicing, leaks and spills. Portable toilets shall be regularly serviced at the frequency recommended by the supplier for the number of people using the facility.

4.8 Spill and Leak Response Procedures

Waste Control

Description: Spill and leak response procedures address the management of spills and leaks that may occur at the construction site. The objective of the spill and leak response procedures is to minimize the discharge of pollutants from unplanned releases of chemicals, fuel, motor vehicle fluids, hazardous materials or wastes through appropriate recognition and response procedures.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Develop procedures based on the Material Safety and Data Sheets for substances onsite
- Maintain spill kits for petroleum products and other chemicals frequently onsite
- Post emergency contact numbers
- Designate a spill response coordinator
- Train employees
- Review reporting requirements for onsite chemicals

LIMITATIONS:

- Procedures susceptible to being forgotten because they are seldom or never used
- Larger spills and spills of extremely hazardous materials require special equipment and should be handled by professionals
- Not applicable to long-term contamination remediation

MAINTENANCE REQUIREMENTS:

- Review procedures regularly
- Verify spill kits, MSDSs, and emergency contacts are readily available
- Train new employees and regularly re-train all employees

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization
- Final Stabilization
- Waste Management
- Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *OSHA, EPA and TCEQ regulations*

4.8.1 Primary Use

Spill and leak procedures are used to minimize the impact of accidental releases on surface water. Pollutants that are of concern for spill and leaks include chemicals, hazardous materials, fuel, motor vehicle fluids, washout waters, and wastes. Spill and leak response is a secondary control. Proper procedures for managing these pollutants should be the primary control and are the best way to prevent the need for spill and leak response.

4.8.2 Applications

Spill and leak response procedures are applicable on all construction sites where chemicals, hazardous materials, fuels, etc. are stored or used. They are most important when the construction site is adjacent or near to a floodplain, wetland, stream, or other waters.

4.8.3 Design Criteria

General

- An effective spill and leak response depends on proper recognition and response practices by construction workers and supervisors. Key elements are education and training.
- Records of releases that exceed the Reportable Quantity (RQ) for oil and hazardous substances should be maintained in accordance with the Federal and State regulations.
- Emergency contact information and spill response procedures shall be posted in a readily available area for access by all employees and subcontractors.
- Spill containment kits should be maintained for petroleum products and other chemicals that are regularly onsite. Materials in kits should be based on containment guidelines in the Material Safety and Data Sheets (MSDSs) for the substance most frequently onsite.
- Spill kits are intended for response to small spills, typically less than 5 gallons, of substances that are not extremely hazardous.
- Significant spills or other releases warrant immediate response by trained professionals.
- Suspected job-site contamination should be immediately reported to regulatory authorities and protective actions taken.

Coordinator

- The contractor should be required to designate a site superintendent, foreman, safety officer, or other senior person who is onsite daily to be the Spill and Leak Response Coordinator.
- The coordinator must have knowledge of and be trained in correct spill and leak response procedures.
- The coordinator shall be responsible for implementing the spill and leak procedures and training all employees and sub-contractors on the site-specific spill and leak procedures. The training should include their responsibility to immediately notify the coordinator if a spill or leak occurs.

Spill Response

- Upon discovery of a spill, employees and subcontractors shall implement the following procedures:
 - Immediately stop work and clear the area by moving upwind of the spill.
 - Remove all ignition sources.
 - Notify the Spill and Leak Response Coordinator.
 - If there is an immediate danger to health or life, contact 911.

- The Spill and Leak Response Coordinator shall perform the following when the spill is not immediately dangerous to health and safety:
 - Consult the MSDS for safety and response procedures.
 - If it can be done safely, use onsite spill kits and soil to contain the spill.
 - Notify a hazardous response company to remove and properly dispose of the spilled material and the contaminated containment materials.

Spill Reporting

- The Spill and Leak Response Coordinator is responsible for notifying authorities of spills and leaks. Notification requirements are based on Reportable Quantities as established by the type or material, quantity and location (onto land or into water in the state) of the release.
- Reportable Quantities (RQ) in the State of Texas are established by the TCEQ in Texas Administrative Code Title 30, Chapter 327 (30 TAC 327) Spill Prevention and Control.
- The Texas RQ for petroleum products and used oil is 25 gallons released onto land or any amount that causes sheen on water.
- Reportable Quantities for all other substances are listed in 30 TAC 327.4, which references the EPA List of Lists (EPA 550-B-01-003) available at: <http://www.epa.gov/ceppo/pubs/title3.pdf>
- The Spill and Leak Response Coordinator shall notify the following:
 - The municipality that operates the local Municipal Separate Storm Sewer System (MS4) if a spill or leak enters public rights-of-way or any type of drainage way or drainage infrastructure within the jurisdiction of the municipality.
 - State of Texas Spill Report Hotline at 1-800-832-8224 if the spill or leak exceeds the RQ; and during regular business hours, the TCEQ Dallas/Fort Worth Regional Office at 817-588-5800.
 - National Spill Response Center at 1-800-424-8802 if the spill or leak exceeds the RQ.

4.8.4 Design Guidance and Specifications

National guidance for response procedures are established by the Environmental Protection Agency (EPA) in the Code of Federal Regulations (CFR). Specific sections addressing spills are governed by:

- 40 CFR Part 68 Chemical Accident Prevention Provisions.
- 40 CFR Part 302 Designation, Reportable Quantities (RQ) and Notification.
- 40 CFR Part 355 Emergency Planning and Notification.

Guidance for emergency response procedures in the State of Texas are established by the Texas Commission on Environmental Quality (TCEQ) in the Texas Administrative Code Title 30, Chapter 327, Spill Prevention and Control.

No specification for construction of this item is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.8.5 Inspection and Maintenance Requirements

Spill and leak response measures should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Verify that spill containment materials are available for small spills. Also verify that emergency contact information is posted. These phone numbers and Material Safety and Data Sheets should be in a location that is readily accessible to workers.

If procedures are lacking, reinforce requirements by re-training employees.

4.9 Subgrade Stabilization Management

Material Control

Description: Lime and other chemicals are used extensively in the North Central Texas region to stabilize pavement subgrades for roadways, parking lots, and other paved surfaces, and as a subgrade amendment for building pad sites. These chemicals are applied to the soil and mixed through disking and other techniques, and then allowed to cure. The objective of subgrade stabilization management is to reduce the potential for runoff to carry the chemicals offsite, where they may impact aquatic life in streams, ponds, and other water bodies.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Educate employees on proper procedures
- Include procedural controls in stabilization specifications
- Limit stabilization operations to that which can be thoroughly mixed and compacted by the end of each workday
- Prohibit vehicle traffic, other than water trucks and mixing equipment, from passing over the area being stabilized until mixing is completed
- Avoid applications when there is a significant probability of rain that will produce runoff
- Roughen areas adjacent and downstream of stabilized areas to intercept lime from runoff
- Provide secondary containment according to [Section 4.1 Chemical Management](#) for stabilizers stored onsite

LIMITATIONS:

- Prevention of contamination is only effective method
- Does not address spill response when discharge occurs

MAINTENANCE REQUIREMENTS:

- Inspect down slope perimeters and outfalls regularly during stabilization operations
- Immediately halt operations if a discharge is found and modify procedures to prevent future discharges

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization
- Final Stabilization
- Waste Management
- Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Chemical management controls for onsite storage of stabilization chemicals*

4.9.1 Primary Use

This measure should be implemented when chemicals are required for soil stabilization. Lime is the most commonly used for stabilization and is considered a chemical. Other agents may also be used for subgrade stabilization depending on the soil and site conditions.

4.9.2 Applications

Chemical stabilization can be used under a variety of conditions. The engineer should determine the applicability of chemical stabilization based on site conditions such as available open space, quantity of area to be stabilized, proximity of nearby water courses and other measures employed at the site. The use of diversion dikes and interceptor swales (see appropriate sections) to divert runoff away from areas to be stabilized can be used in conjunction with these techniques to reduce the potential impact of discharges from chemical stabilization.

Management of stabilization chemicals is based on implementing procedures to prevent a discharge. If a discharge occurs, it shall be considered a spill and handled according to the criteria in [Section 4.8 Spill and Leak Response Procedures](#).

4.9.3 Design Criteria

- Construction plan notes or stabilization shall include procedural controls to minimize the discharge of chemical stabilizers.
- The contractor shall limit the amount of stabilizing agent onsite to that which can be thoroughly mixed and compacted by the end of each workday.
- Stabilizers shall be applied at rates that result in no runoff.
- Stabilization shall not occur immediately before and during rainfall events.
- No traffic other than water trucks and mixing equipment shall be allowed to pass over the area being stabilized until after completion of mixing the chemical.
- Areas adjacent and downstream of stabilized areas shall be roughened to intercept chemical runoff and reduce runoff velocity.
- Geotextile fabrics such as those used for silt fence should not be used to treat chemical runoff, because the chemicals are dissolved in the water and won't be affected by a barrier and the suspended solids are significantly smaller than the apparent opening size of the fabric.
- For areas in which phasing of chemical stabilization is impractical, a curing seal (such as Liquid Asphalt, Grace MC-250, or MC-800) applied at a rate of 0.15 gallons per square yard of surface can be used to protect the base.
- Use of sediment basins with a significant (>36 hour) drawdown time is encouraged to capture any accidental lime or chemical overflows when large areas are being stabilized ([Section 3.9 Sediment Basin](#)).
- Provide containment around chemical storage, loading and dispensing areas.
- If soil stabilizers are stored onsite, they shall be considered hazardous material and shall be managed according to the criteria in [Section 4.1 Chemical Management](#) to capture any accidental lime or chemical overflow.

4.9.4 Design Guidance and Specifications

No specification for subgrade stabilization management is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.9.5 Inspection and Maintenance Requirements

Subgrade stabilization operation should be observed frequently as the operations proceed for evidence of discharges. Inspect the down slope perimeter and all outfalls for evidence of discharges. Pay particularly attention to the outfall of drainage pipes connected to inlets within the area being stabilized. If a discharge is found, immediately halt stabilization operations until additional controls can be implemented.

4.9.6 Example Schematic

The following schematic is an example application of the construction control. It is intended to assist in understanding the control's design and function.

The schematic is **not for construction**. It may serve as a starting point for creating a construction detail, but it must be site adapted by the designer. In addition, dimensions and notes appropriate for the application must be added by the designer.

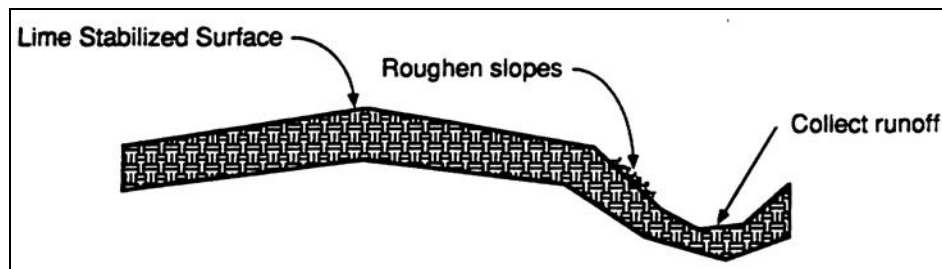


Figure 4.2 Schematic of Controls for Subgrade Stabilization

4.10 Vehicle and Equipment Management

Material and Waste Control

Description: Vehicle and equipment management addresses the practices associated with proper use and maintenance of vehicles and equipment at construction sites. The objective is to minimize the discharge of pollutants from vehicle and equipment operation, fueling, maintenance, and washing.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Prohibit the discharge of maintenance fluids and wash water with soap
- If feasible, prohibit onsite vehicle washing
- If feasible, prohibit onsite maintenance except fueling
- Provide secondary containment that's 110 percent of the largest container in the containment
- Use spill/overflow devices for fueling
- Never leave a fueling operation unattended
- Label all waste containers
- Train workers in proper procedures

LIMITATIONS:

- Cost of maintenance, repairs, and spill prevention equipment
- One part of a comprehensive construction site waste management program
- Does not address spill and leak response procedures

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Check for signs of leaks and spills and take corrective actions
- Place drip pans under leaking vehicles and equipment when parked
- Verify procedures are being followed
- Train new employees and regularly re-train all employees

TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization
- Final Stabilization

Waste Management

Housekeeping Practices

IMPLEMENTATION CONSIDERATIONS

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- None

4.10.1 Primary Use

Vehicle and equipment management is used to minimize the pollutants that enter stormwater from fueling and maintenance activities.

4.10.2 Applications

Vehicle and equipment management is applicable on every construction site. The management controls are most effective when used in conjunction with controls in [Section 4.8 Spill and Leak Response Procedures](#).

The management techniques are based on proper recognition and handling of pollutant sources related to vehicles and equipment. Key elements are education, established procedures, and provisions for safe storage and disposal of wastes. The following list (not all inclusive) gives examples of the targeted materials:

- Fuels
- Lube Oils
- Antifreeze
- Solvents
- Wash water

4.10.3 Design Criteria

- Construction plan notes shall state that the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance is prohibited.
- Construction plan notes shall state that the discharge of soaps or solvents used in vehicle and equipment washing is prohibited.
- On the construction plans, show the location of fuel tanks, motor vehicle fluids storage, and waste storage, including secondary containment, or require the contractor to provide this information.
- Provide secondary containment for fuel, new and waste oil, and other maintenance fluids that are stored onsite. Secondary containment shall have a minimum volume of 110 percent of the largest container within the containment.
- Criteria for the response to spills of motor vehicle fluids are in [Section 4.8 Spill and Leak Response Procedures](#).
- The contractor should be required to designate a site superintendent, foreman, safety officer, or other senior person, who is on the site daily, to be responsible for implementing vehicle and equipment management.

Vehicle Washing

- Minimize the potential for the discharge of pollutants from equipment and vehicle washing by prohibiting these activities onsite, if practical. Vehicles and equipment should be transported to a commercial vehicle wash facility with appropriate discharge controls.
- Designate a wash area if vehicle and equipment washing must be done onsite. Require all washing to be done at this location. The area shall be graded so that all wash water flows to a sediment basin or other sediment control that provides equivalent or better treatment.
- Do not use soap for vehicle and equipment washing. Sediment controls will not remove soap from the wash water.

- Vehicle and equipment wash water may contain oils, greases, and heavy metals. Treatment to remove these pollutants is needed in addition to sediment trapping. Any wash water that has sheen on it must be considered polluted and cannot be discharged from the site without appropriate treatment. State or local discharge permits may be required.

Maintenance

- If possible, prohibit onsite maintenance except for fueling. Otherwise, limit onsite maintenance to routine preventive maintenance.
- Maintenance fluids should be stored in appropriate containers (closed drums or similar) and under cover.
- The ground under vehicles and equipment parked onsite should be inspected for drips and leaks before each use. Drip pans should be placed under parked vehicles and equipment that leak or drip.
- Vehicles and equipment that leak or drip should be removed from the site for repair as soon as possible.
- Vehicles and equipment that become inoperative should be removed from the site for repairs.

Fueling

- Check the municipality's requirements for fuel tanks. Some municipalities have specific requirements for the type of tank and secondary containment. At a minimum, local fire codes apply.
- Fuel should be dispensed using a drip pan or other spill/overflow device or within containment berms or other secondary containment.
- If the containment control is an earthen pit or berm, the containment shall be lined with plastic.
- If an automatic pump is used for fueling, it should be equipped with an overfill protection device.
- Workers performing fueling operations shall be trained in the correct procedures for fueling and spill response.
- Workers performing fueling operations shall be present and observe the fueling at all times. Fueling shall not be left unattended.
- A spill containment kit shall be maintained within 25 feet of the fueling area.

Waste Handling and Disposal

- Ensure that adequate waste storage volume is available.
- All waste containers shall be clearly labeled.
- Handling and disposal of waste from vehicle and equipment maintenance should be according to the criteria in [Section 4.1 Chemical Management](#).

Education

- Instruct workers on procedures for washing, maintaining, and fueling vehicles and equipment.
- Instruct workers in identification of pollutants associated with vehicles and equipment.
- Have regular meetings to discuss and reinforce procedures (incorporate into regular safety briefings).
- Establish a continuing education program to train new employees.

4.10.4 Design Guidance and Specifications

No specification for vehicle and equipment management is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

4.10.5 Inspection and Maintenance Requirements

Vehicle and equipment management controls should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Verify that washing, fueling, storage, and disposal procedures are being followed. Correct workers where needed.

Fueling and maintenance fluid storage areas should be checked for signs of leakage or spills. If evidence is found, corrective actions should be implemented. Reinforce proper procedures through re-education of employees. Inspect areas where vehicles and equipment are parked for signs of leaks. Use drip pans where needed.

7.0 Culverts

Stormwater Control



Description: A short, closed (covered) conduit that conveys stormwater runoff under an embankment, usually a roadway.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Designed for conveyance purposes, not pollutant removal capability
- Normally designed for the “Conveyance” storm event

VELOCITY:

- Maximum velocity of 15 fps for corrugated metal pipe
- Minimum velocity of 2.5 fps, for the “Streambank Protection” storm event

SLOPE:

- Maximum slope of 14% for corrugated metal pipe
- Maximum slope of 10% for concrete pipe
- Maximum drop in a drainage structure is 10 feet.

OTHER:

- Skew not to exceed 45 degrees
- Minimum diameter of 18 inches

MAINTENANCE REQUIREMENTS:

- Reinforced concrete pipe for use (1) under roadway, (2) when pipe slopes are less than 1%, or (3) for all flowing streams.
- RCP and fully coated corrugated metal pipe
- High-density polyethylene (HDPE) may be used as specified in municipal regulations

STORMWATER MANAGEMENT SUITABILITY

- Water Quality Protection
- Streambank Protection
- On-Site Flood Control
- Downstream Flood Control

IMPLEMENTATION CONSIDERATIONS

- Land Requirement
- Capital Cost
- Maintenance Burden

Residential Subdivision Use: Yes

High Density/Ultra-Urban: Yes

Drainage Area: No restrictions.

Soils: No restrictions

L=Low M=Moderate H=High

7.1 General Description

A culvert is a short, closed (covered) conduit that conveys stormwater runoff under an embankment, usually a roadway. The primary purpose of a culvert is to convey surface water, but properly designed it may also be used to restrict flow and reduce downstream peak flows. In addition to the hydraulic function, a culvert must also support the embankment and/or roadway, and protect traffic and adjacent property owners from flood hazards to the extent practicable.

7.2 Pollutant Removal Capabilities

Culverts are designed for stormwater conveyance purposes and do not provide pollutant removal capabilities.

7.3 Design Criteria and Specifications

The design of a culvert should take into account many different engineering and technical aspects at the culvert site and adjacent areas. The following design criteria should be considered for all culvert designs as applicable:

- Frequency Flood;
- Velocity Limitations;
- Buoyancy Protection;
- Length and Slope;
- Debris Control;
- Headwater Limitations;
- Tailwater Considerations;
- Storage;
- Inlets;
- Inlets with Headwalls;
- Wingwalls and Aprons;
- Improved Inlets;
- Material Selection;
- Culvert Skews;
- Culvert Sizes;
- Weep Holes;
- Outlet Protection;
- Erosion and Sediment Control; and
- Environmental Considerations.

There are two types of flow conditions for culverts (see Figure 7.1) that are based upon the location of the control section and the critical flow depth:

- Inlet Control – Inlet control occurs when the culvert barrel is capable of conveying more flow than the inlet will accept. This typically happens when a culvert is operating on a steep slope. The control section of a culvert is located just inside the entrance. Critical depth occurs at or near this location, and the flow regime immediately downstream is supercritical.
- Outlet Control – Outlet control flow occurs when the culvert barrel is not capable of conveying as much flow as the inlet opening will accept. The control section for outlet control flow in a culvert is located at the barrel exit or further downstream. Either subcritical or pressure flow exists in the culvert barrel under these conditions.

Proper culvert design and analysis requires checking for both inlet and outlet control to determine which will govern particular culvert designs.

There are three procedures for designing culverts: manual use of inlet and outlet control equations, nomographs, and the use of computer programs such as HY8. It is recommended that the HY8 computer model or equivalent be used for culvert design. The computer software package HYDRAIN, which includes HY8, uses the theoretical basis from the nomographs to size culverts. In addition, this software can evaluate improved inlets, route hydrographs, consider road overtopping, and evaluate outlet streambed scour. By using water surface profiles, this procedure is more accurate in predicting backwater effects and outlet scour.

Examples of small culverts are shown in Figure 7.2. See *Section 3.3 of the Hydraulics Technical Manual* for detailed culvert design procedures and instruction.

7.4 Inspection and Maintenance Requirements

Culverts located at the end of urban drainage channels are often clogged by refuse dumped into the channel or by trash washed off the city streets. Under such conditions, a debris rack can usually be installed at a low cost to prevent clogging. In designing debris control structures it is recommended that the Federal Highway Administration, Hydraulic Engineering Circular No. 9 entitled *Debris Control Structures* be consulted. This Circular discusses the variety of methods for controlling debris by: (a) intercepting the debris at or above the inlet; (b) deflecting the debris for detention near the inlet; or (c) passing the debris through the structure.

Additionally, to ensure self-cleaning during partial depth flow, a minimum velocity of 2.5 feet per second, for the 2-year flow, when the culvert is flowing partially full is required.

7.5 Example Schematic

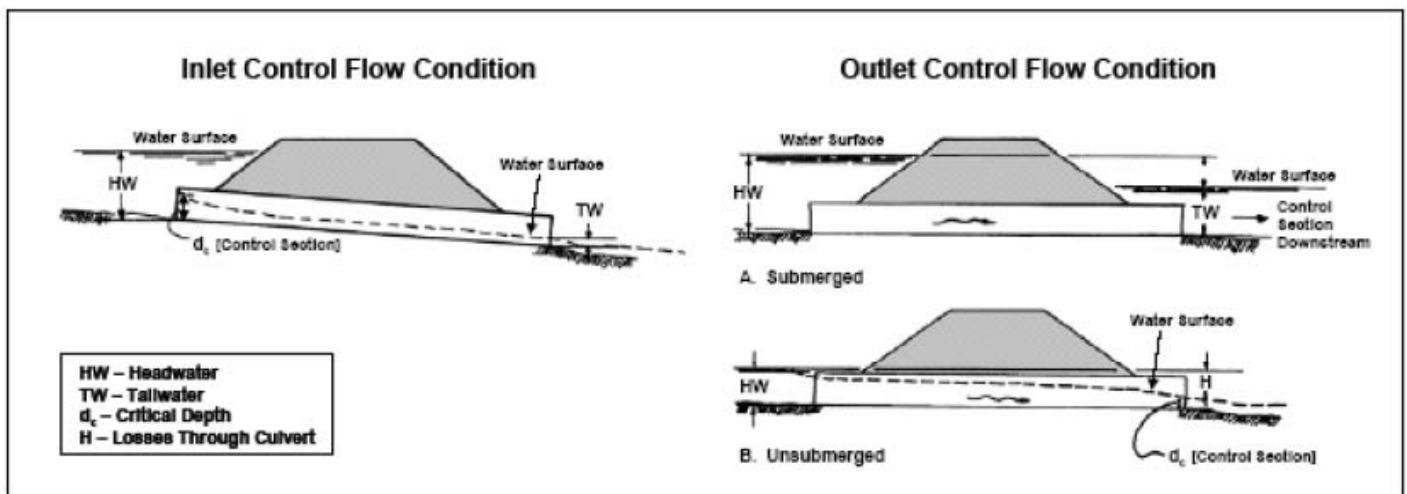


Figure 7.1 Culvert Flow Conditions



Figure 7.2 Culvert Examples

8.0 Inlets

Stormwater Controls



Description: Drainage structure used to collect surface water through grate or curb openings and convey it to pipe systems or direct outlet to culverts.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Designed for conveyance purposes, not pollutant removal capability
- Interception capacity depends on depth of water next to curb.

ADVANTAGES / BENEFITS:

- Aesthetically pleasing, less obvious than most stormwater structures.

DISADVANTAGES / LIMITATIONS:

- Efficiency is typically reduced in order to meet safety standards.

MAINTENANCE REQUIREMENTS:

- Must be inspected and cleaned regularly due to trash and debris build-up.

STORMWATER MANAGEMENT SUITABILITY

- Water Quality Protection
- Streambank Protection
- On-Site Flood Control
- Downstream Flood Control

IMPLEMENTATION CONSIDERATIONS

- Land Requirement
- Capital Cost
- Maintenance Burden

Residential Subdivision Use:

Yes

High Density/Ultra-Urban: Yes

Drainage Area: No restrictions.

Soils: No restrictions

Other Considerations: Overflow parking, driveways and related issues

L=Low M=Moderate H=High

8.1 General Description

Inlets are drainage structures used to collect surface water through grate or curb openings and convey it to pipe systems or direct outlet to culverts. Inlets are typically located in close proximity to impervious areas such as streets and parking lots. Inlets can also be located at a low point in a channel or area that concentrates overland flow (ponding areas).

8.2 Pollutant Removal Capabilities

Although inlets prevent large debris from passing to the storm sewer system, they are designed for stormwater conveyance purposes and do not provide pollutant removal capabilities.

8.3 Design Criteria and Specifications

Inlets used for drainage of surfaces can be divided into three major classes:

- Grate Inlets – These inlets include grate inlets, consisting of an opening in the gutter covered by one or more grates, and slotted inlets, consisting of a pipe cut along the longitudinal axis with a grate or spacer bars to form slot openings.
- Curb-Opening Inlets – These inlets are vertical openings in the curb covered by a top slab.
- Combination Inlets – These inlets usually consist of both a curb-opening inlet and a grate inlet placed in a side-by-side configuration, but the curb opening may be located in part upstream of the grate.

Inlets may be classified as on a *continuous grade* or in a *sump*. The term “continuous grade” refers to an inlet located on the street with a continuous slope past the inlet with water entering from one direction. The “sump” condition exists when the inlet is located at a low point and water enters from both directions. There are specific design criteria for the following types of inlets:

- Grate Inlets on Grade
- Grate Inlets in Sag
- Curb Inlets on Grade
- Curb Inlets in Sump
- Combination Inlets on Grade
- Combination Inlets in Sump

Where significant ponding can occur, in locations such as underpasses and in sag vertical curves in depressed sections, it is good engineering practice to place flanking inlets on each side of the inlet at the low point in the sag. The flanking inlets should be placed so that they will limit spread on low gradient approaches to the level point and act in relief of the inlet at the low point if it should become clogged or if the design spread is exceeded.

When designing an inlet, the grate length, bar configuration, and gutter velocity must be taken into account. Inlet location should not compromise safety or aesthetics. It should not allow for standing water in areas of vehicular or pedestrian traffic, and should take advantage of natural depression storage where possible. Grate inlets subject to traffic should be bicycle safe (horizontal and vertical cross-bars) and provide adequate load-bearing capabilities.

See [Section 3.3 of the Hydraulics Technical Manual](#) for detailed inlet design procedures and instruction.

8.4 Inspection and Maintenance Requirements

Inlets are often blocked by trash washed off the city streets and parking lots. Regular inspection and removal of this debris will result in cleaner, more efficient stormwater conveyance systems. The public might also misunderstand inlets as places to dispose of household wastes. To prevent this and to promote water quality education, some municipalities and non-profit organizations have begun “stamping” inlets or attaching decals with “No Dumping” instructions.



Grate Inlet in Parking Lot



Slotted Inlet



Curb Inlet



Stamp on Inlet



Combination Inlet

Figure 8.1 Example Inlets

9.0 Pipe Systems

Stormwater Control



Description: Pipe conveyances used for transporting runoff from roadway and other inlets to outfalls at structural stormwater controls and receiving waters.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Designed for conveyance purposes, not pollutant removal capability
- All systems should be designed with velocities greater than 2.5 fps with a minimum slope of 0.5%
- Size system under the assumption of full flow, but not pressure flow
- Hydraulic gradient should not produce velocity in excess of 15 fps
- Manning’s Equation recommended for capacity computations

STORMWATER MANAGEMENT SUITABILITY

- Water Quality Protection
- Streambank Protection
- On-Site Flood Control
- Downstream Flood Control

IMPLEMENTATION CONSIDERATIONS

- Land Requirement
- Capital Cost
- Maintenance Burden

Residential Subdivision Use: Yes

High Density/Ultra-Urban: Yes

Drainage Area: No restrictions.

Soils: No restrictions

L=Low M=Moderate H=High

9.1 General Description

Storm drain pipe systems, also known as *storm sewers*, are pipe conveyances used in the minor stormwater drainage system for transporting runoff from roadway and other inlets to outfalls at structural stormwater controls and receiving waters. Pipe drain systems are suitable mainly for medium to high-density residential and commercial/industrial development where the use of natural drainageways and/or vegetated open channels is not feasible.

9.2 Pollutant Removal Capabilities

The stormwater pipe system is designed for conveyance purposes and does not provide pollutant removal capabilities.

9.3 Design Criteria and Specifications

The design of storm drain systems generally follows these steps:

- Step 1 Determine inlet location and spacing.
- Step 2 Prepare a tentative plan layout of the storm sewer drainage system including:
 - a. Location of storm drains
 - b. Direction of flow
 - c. Location of manholes
 - d. Location of existing facilities such as water, gas, or underground cables
- Step 3 Determine drainage areas and compute runoff using the Rational Method
- Step 4 After the tentative locations of inlets, drain pipes, and outfalls (including tailwaters) have been determined and the inlets sized, compute the rate of discharge to be carried by each storm drain pipe and determine the size and gradient of pipe required to care for this discharge. This is done by proceeding in steps from upstream of a line to downstream to the point at which the line connects with other lines or the outfall, whichever is applicable. The discharge for a run is calculated, the pipe serving that discharge is sized, and the process is repeated for the next run downstream. The storm drain system design computation form ([Figure 1.27 of the Hydraulics Technical Manual](#)) can be used to summarize hydrologic, hydraulic, and design computations.
- Step 5 Examine assumptions to determine if any adjustments are needed to the final design.

It should be recognized that the rate of discharge to be carried by any particular section of storm drain pipe is not necessarily the sum of the inlet design discharge rates of all inlets above that section of pipe, but as a general rule is somewhat less than this total. It is useful to understand that the time of concentration is most influential and as the time of concentration grows larger, the proper rainfall intensity to be used in the design grows smaller.

See [Section 1.2 of the Hydraulics Technical Manual](#) for detailed pipe system design procedures and instruction.

9.4 Inspection and Maintenance Requirements

Maintaining stormwater conveyance structures on a regular basis will prevent clogging of the downstream conveyance system and ensure the system functions properly hydraulically to avoid flooding.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect flushed effluent and pump to the sanitary sewer for treatment after sediment removal, if necessary.

Illicit Connections and Discharges

- During routine maintenance of conveyance system and drainage structures field staff should look for evidence of illegal discharges or illicit connections:
 - Is there evidence of spills such as paints, discoloring, etc.
 - Are there any odors associated with the drainage system
 - Record locations of apparent illegal discharges/illicit connections
 - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of up gradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
 - Once the origin of flow is established, require illicit discharger to eliminate the discharge.
- Stencil storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled next to them to warn against uninformed or intentional dumping of pollutants into the storm drainage system.

Illegal Dumping

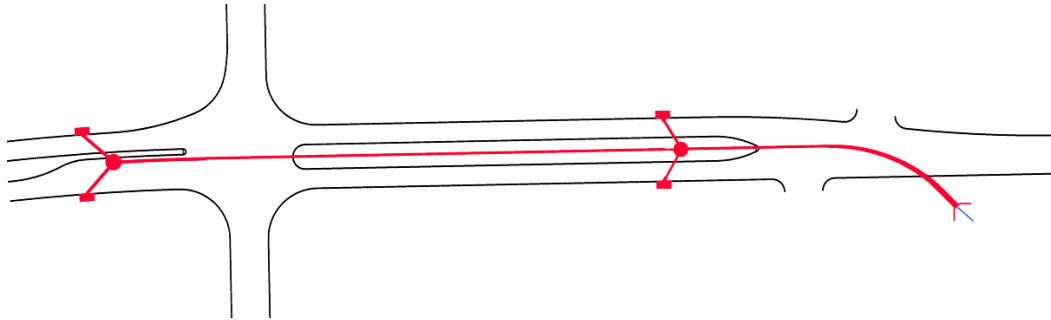
- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
 - Illegal dumping hot spots
 - Types and quantities (in some cases) of wastes
 - Patterns in time of occurrence (time of day/night, month, or year)
 - Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)
 - Responsible parties
- Post “No Dumping” signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.

Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and disposal of flushed effluent to sanitary sewer may be prohibited in some areas.

Maintenance

- Identifying illicit discharges requires teams of at least two people (volunteers can be used), plus administrative personnel, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Requires technical staff to detect and investigate illegal dumping violations, and to coordinate public education.

9.5 Example Schematic



23.0 Green Roof

Structural Stormwater Control



Description: A green roof uses a small amount of substrate over an impermeable membrane to support a covering of plants. The green roof slows down runoff from the otherwise impervious roof surface as well as moderating rooftop temperatures. With the right plants, a green roof will also provide aesthetic or habitat benefits. Green roofs have been used in Europe for decades.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Relatively new in North America
- Potential for high failure rate if poorly designed, poorly constructed, not adequately maintained Minimum length to width ratio for the pond is 1.5:1

ADVANTAGES / BENEFITS:

- Provides reduction in runoff volume
- Higher initial cost when compared to conventional roofs, but potential for lower life cycle costs through longevity

DISADVANTAGES / LIMITATIONS:

- Requires additional roof support
- Requires more maintenance than regular roofs
- Special attention to design and construction needed
- Requires close coordination with plant specialists
- Potential for leakage due to plant roots penetrating membrane.

STORMWATER MANAGEMENT SUITABILITY

- P Water Quality Protection**
- S Streambank Protection**
- On-Site Flood Control**
- Downstream Flood Control**

IMPLEMENTATION CONSIDERATIONS

- L Land Requirement**
- L Capital Cost**
- H Maintenance Burden**

Residential Subdivision Use: No

High Density/Ultra-Urban: Yes

Drainage Area: No restrictions.

Soils: No restrictions.

Other Considerations:

- Hotspot Areas

POLLUTANT REMOVAL

85%	Total Suspended Solids
95/16%	Nutrients - Total Phosphorus / Total Nitrogen removal
25%	Metals - Cadmium, Copper, Lead, and Zinc removal
No Data	Pathogens - Coliform, Streptococci, E. Coli removal

L=Low M=Moderate H=High

23.1 General Description

Green roofs (also referred to as *ecoroofs*, *roof gardens*, or *roof meadows*) are vegetated roofs used in place of conventional roofing, such as gravel-ballasted roofs. They are used as part of sustainable development initiatives, along with narrow streets, permeable pavement, and various infiltration devices. There are two main types of green roofs. The first is what is called roof gardens or intensive green roofs. They may be thought of as a garden on the roof. They have a greater diversity of plants, including trees and shrubs, but require deeper soil, increased load bearing capacity, and require more maintenance. The second has been referred to as roof meadows or extensive green roofs. The vegetation is limited and similar to an alpine meadow, requiring less soil depth and minimal maintenance. Due to the considerably greater costs and structural design requirements, only the second type of green roof, the roof meadow or extensive type is discussed in this manual.

The extensive green roof is designed to control low-intensity storms by intercepting and retaining or storing water until the peak storm event has passed. The plants intercept and delay runoff by capturing and holding precipitation in the foliage, absorbing water in the root zone, and slowing the velocity of direct runoff by increasing retardance to flow and extending the flowpath through the vegetation. Water is also stored and evaporated from the growing media. Green roofs can capture and evaporate up to 100 percent of the incident precipitation, depending on the roof design and the storm characteristics.

Monitoring in Pennsylvania, for instance, showed reductions of approximately 2/3 in runoff from a green roof (15.5 inches runoff from 44 inches of rainfall). Furthermore, runoff was negligible for storm events of less than 0.6 inches. A study done for Portland, Oregon, indicated a reduction in stormwater discharges from the downtown area of between 11 and 15% annually if half of the roofs in the downtown area were retrofitted as green roofs.

Green roofs also:

- reduce the temperature of runoff,
- reduce the “heat island” effect of urban buildings,
- help insulate the building,
- improve visual aesthetics,
- protect roofs from weather,
- improve building insulation,
- reduce noise,
- and provide habitat for wildlife.

As with a conventional roof, a green roof must safely drain runoff from the roof. It may be desirable to drain the runoff to a rainwater harvesting system such as (rainbarrels or cisterns), or other stormwater facilities such as planters and swales.

Significant removals of heavy metals by green roofs have been reported, but there is not enough evidence to include removal rates at this time.

23.2 Design Criteria and Specifications

For either new installations or retrofits, an architect or structural engineer must be consulted to determine whether the building can provide the structural support needed for a green roof.

Generally, the building structure must be adequate to hold an additional 10 to 25 pounds per square foot (psf) saturated weight, depending on the vegetation and growth medium that will be used. (This is in addition to snow load requirements.) An existing rock ballast roof may be structurally sufficient to hold a 10-12 psf green roof, since ballast typically weighs 10-12 psf.

Green roofs can be used on flat or pitched roofs up to 40 percent. Although, on a roof slope greater than 20 degrees, the green roof installer needs to ensure that the plant layer does not slip or slump through its

own weight, especially when it becomes wet. Horizontal strapping, wood, plastic, or metal, may be necessary. Some commercial support grid systems are also available for this purpose.

A green roof typically consists of several layers, as shown in Figure 23.1. A waterproof membrane is placed over the roof's structure. A root barrier is placed on top of the membrane to prevent roots from penetrating the membrane and causing leaks. A layer for drainage is installed above this, followed by the growth media. The vegetation is then planted to form the top layer. Details of the various layers are given below.

Waterproof membranes are made of various materials, such as synthetic rubber (EPDM), hypolan (CPSE), reinforced PVC, or modified asphalts (bitumens). The membranes are available in various forms, liquid, sheets, or rolls. Check with the manufacturer to determine their strength and functional characteristics of the membrane under consideration.

Root barriers are made of dense materials or are treated with copper or other materials that inhibit root penetration, protecting the waterproof membrane from being breached. A root barrier may not be necessary for synthetic rubber or reinforced PVC membranes, but will likely be needed for asphalt mixtures. Check with the manufacturer to determine if a root barrier is required for a particular product.

The drainage layer of a green roof is usually constructed of various forms of plastic sheeting, a layer of gravel, or in some cases, the growth medium.

The growth medium is generally 2 to 6 inches thick and made of a material that drains relatively quickly. Commercial mixtures containing coir (coconut fiber), pumice, or expanded clay are available. Sand, gravel, crushed brick, and peat are also commonly used. Suppliers recommend limiting organic material to less than 33% to reduce fire hazards. The City of Portland, Oregon has found a mix of 1/3 topsoil, 1/3 compost, and 1/3 perlite may be sufficient for many applications. Growth media can weigh from 16 to 35 psf when saturated depending on the type (intensive/extensive), with the most typical range being from 10-25 psf.

When dry, all of the growth media are light-weight and prone to wind erosion. It is important to keep media covered before planting and ensure good coverage after vegetation is established.

Selecting the right vegetation is critical to minimize maintenance requirements. Due to the shallowness of the growing medium and the extreme desert-like microclimate on many roofs, plants are typically alpine, dryland, or indigenous. Ideally, the vegetation should be:

- Drought-tolerant, requiring little or no irrigation after establishment
- Self-sustaining, without fertilizers, pesticides, or herbicides
- Able to withstand heat, cold, and high winds
- Shallow root structure
- Low growing, needing little or no mowing or trimming
- Fire resistant
- Perennial or self propagating, able to spread and cover blank spots by itself

Visit www.txsmartscape.com to look up plants meeting the above criteria.

A mix of sedum/succulent plant communities is recommended because they possess many of these attributes. Certain wildflowers, herbs, forbs, grasses, mosses, and other low groundcovers can also be used to provide additional habitat benefits or aesthetics; however, these plants need more watering and maintenance to survive and keep their appearance.

Green roof vegetation is usually established by one or more of the following methods: seeding, cuttings, vegetation mats, and plugs/potted plants.

- Seeds can be either hand sown or broadcast in a slurry (hydraseeded). Seeding takes longer to establish and requires more weeding, erosion control, and watering than the other methods.

- Cuttings or sprigs are small plant sections. They are hand sown and require more weeding, erosion control, and watering than mats.
- Vegetation mats are sod-like mats that achieve full plant coverage very quickly. They provide immediate erosion control, do not need mulch, and minimize weed intrusion. They generally require less ongoing maintenance than the other methods.
- Plugs or potted plants may provide more design flexibility than mats. However, they take longer to achieve full coverage, are more prone to erosion, need more watering during establishment, require mulching, and more weeding.

Green roof vegetation is most easily established during the spring or fall.

Irrigation is necessary during the establishment period and possibly during drought conditions, regardless of the planting method used. The goal is to minimize the need for irrigation by paying close attention to plant selection, soil, and various roof characteristics.

Installation costs for green roofs generally run from \$10 to \$25 per square foot, as compared to \$3 to \$20 per square foot for a conventional roof. However, the longer lifespan of a green roof (reportedly 40 years or up to twice as long as a conventional roof) and lower maintenance costs offset this.

Provide controlled overflow point(s) to prevent overloading of roof.

23.3 Inspection and Maintenance Requirements

Activity	Schedule
Watering to help establish vegetation	As needed
Replant to cover bare spots or dead plants	Monthly
Weeding (as needed, based on inspection)	Two or three times yearly
Water and mowing to prevent fire hazards (if grasses or similar plants are used)	As needed
Inspect drains for clogging	Twice per year
Inspect the roof for leakage	Annually, or as needed
If leaks occur, remove and stockpile vegetation, growth media, and drainage layer. Replace membrane and root barrier, followed by stockpiled material.	Upon failure

23.4 Example Schematic

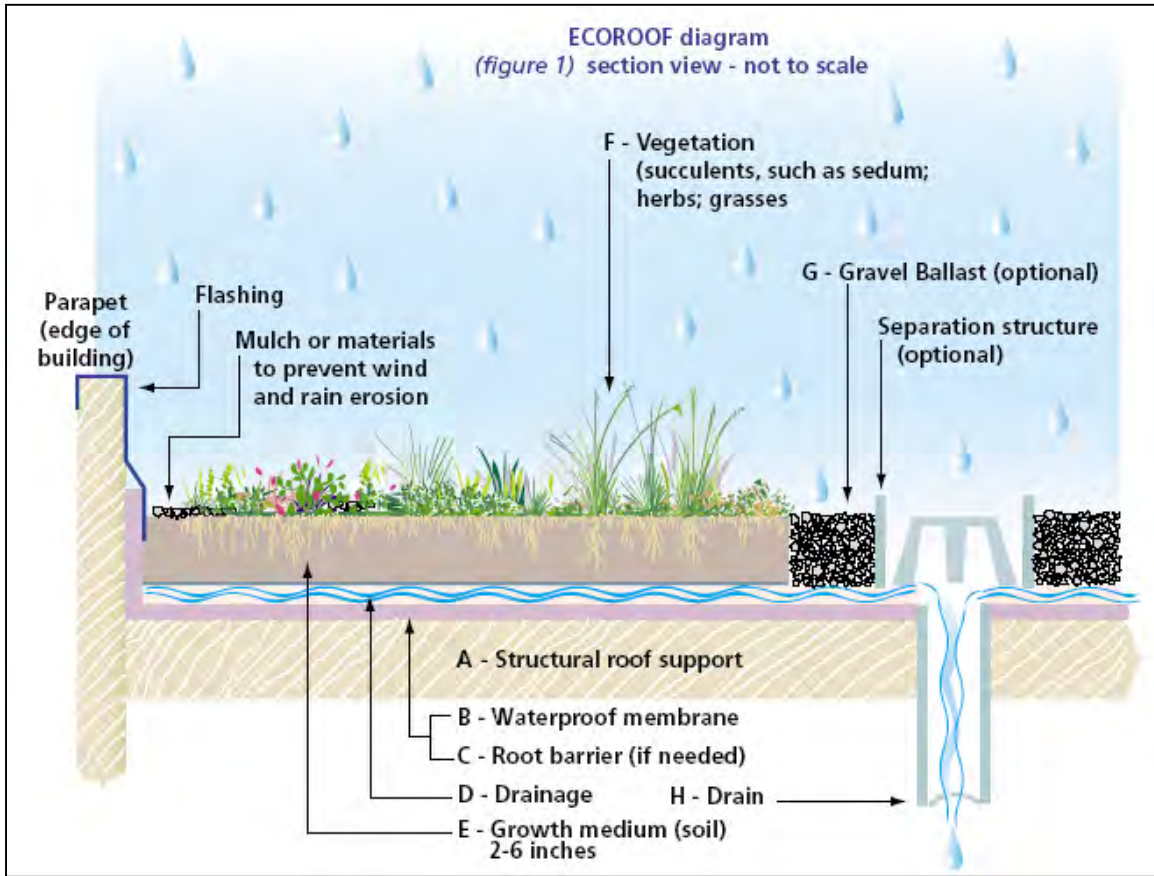


Figure 23.1 Green Roof Cross Section (from City of Portland, Oregon)

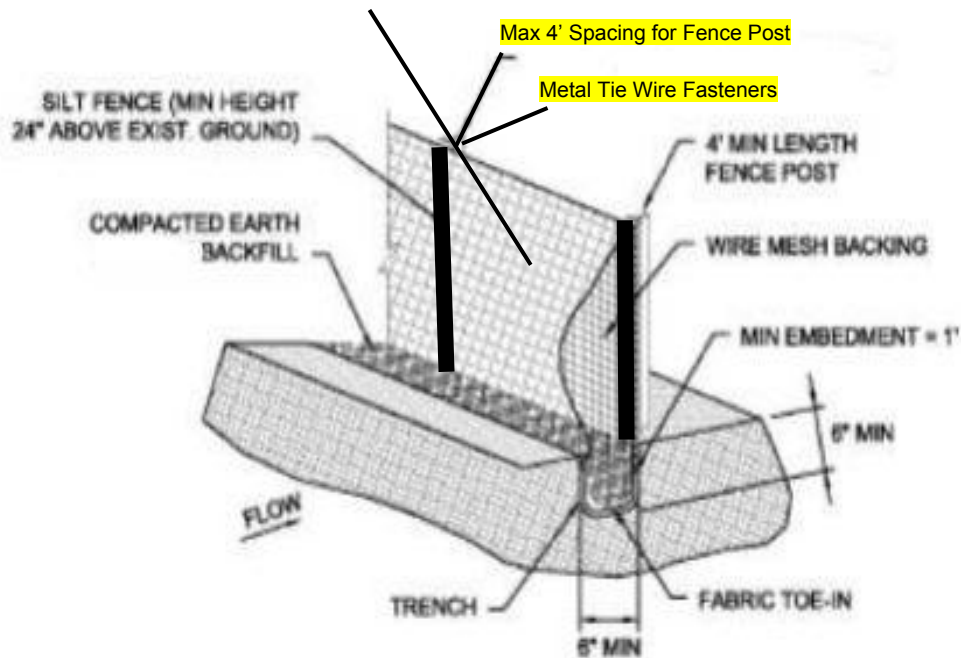
Silt Fence Cross-Check Structure

Notes:

1. Redesigned control to be used in areas of concentrated water flow.
2. Operator shall show on the drawings the locations, installation and maintenance dates where the structures shall be installed.
3. Option: Alternate BMP structures to be utilized: Rock Check Dam, Organic Filter Tube.

Redesigned Features

Durable 77 Gram UV-stabilized woven geotextile



Appendix 4

Engineer's Civil Sheets:

Erosion Control Plan Sheet C4.0,C4.1

Erosion Control Detail Sheet C4.2

GENERAL NOTES

1. ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
3. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF WALL.
4. EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MUNICIPAL AND FRANCHISE UTILITY COMPANIES AND LOCATING ALL UTILITIES IN THE FIELD.
5. ALL LOT LINES BASED ON BEST AVAILABLE DATA. THE CONTRACTOR SHALL NOTIFY ENGINEER IN THE EVENT OF ANY DISCREPANCY THAT WOULD ALTER THE GRADING FLOW AS DESIGNED, OR ANY FEATURE THAT IMPACTS THE ABILITY TO CONSTRUCT THE DESIGN AS SHOWN ON THIS PLAN. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY WILLIAMSON COUNTY.
6. CONTRACTOR/OWNER SHALL COORDINATE WITH WILLIAMSON COUNTY TO OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.

CONSTRUCTION NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO WILLIAMSON COUNTY AND/OR THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WHICHEVER IS MORE RESTRICTIVE.
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE LOCATION.
3. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
4. CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.

EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES MUST BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER.
3. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFFSITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ONSITE.
4. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
5. SEDIMENT THAT IS ERODED FROM THE SITE AND DEPOSITED INTO ADJACENT PROPERTIES OR PUBLIC RIGHT-OF-WAY SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN AN APPROPRIATE MANNER.
6. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE SEEDED WITH AN APPROPRIATE ANNUAL GRASS TO PROVIDE PERMANENT VEGETATIVE STABILIZATION.

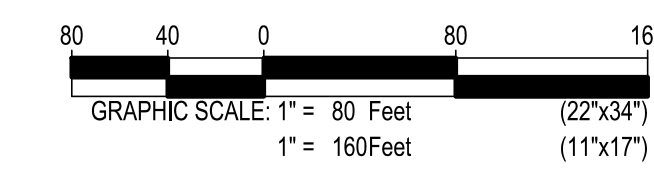
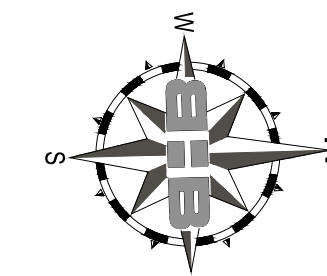
EROSION CONTROL LEGEND

DESCRIPTION	SYMBOL	LOCATION
SILT FENCE		AS SHOWN, SEE PLAN

EROSION CONTROL CONSTRUCTION RESPONSIBILITIES

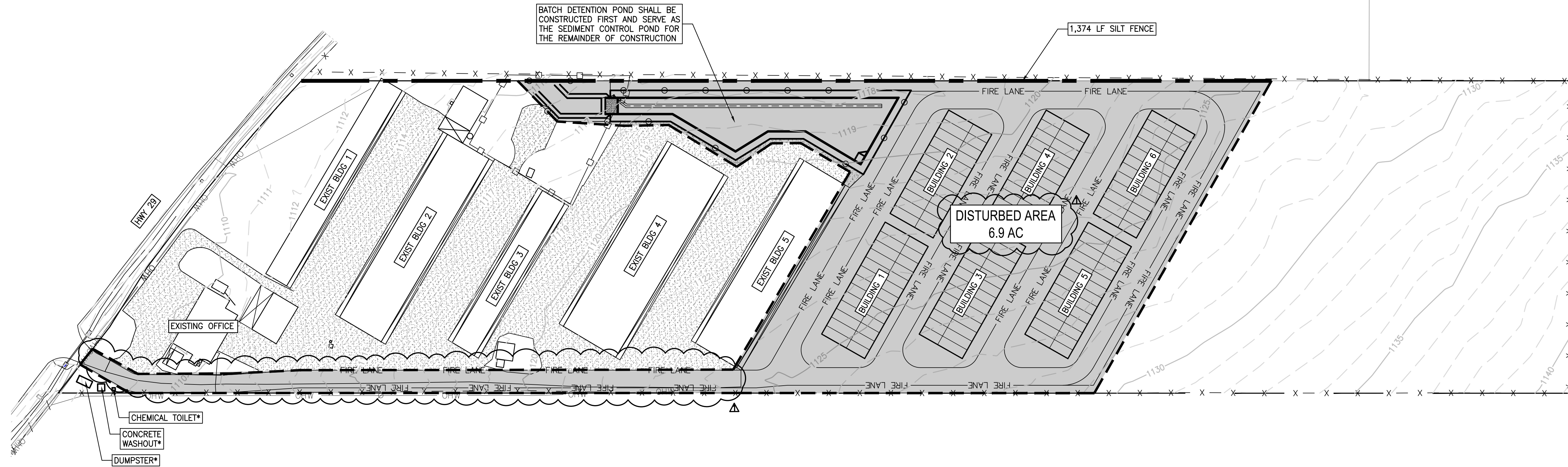
EROSION CONTROL MEASURE	INSTALLATION RESPONSIBILITY	MAINTENANCE RESPONSIBILITY
SILT FENCE	EARTHWORK CONTRACTOR	ALL CONTRACTORS

* NOTE: CONTRACTOR TO DETERMINE LOCATIONS OF DUMPSTER, CONCRETE WASHOUT, AND CHEMICAL TOILET IN THE FIELD. CONTRACTOR TO DETERMINE SIZE OF CONCRETE WASHOUT.



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR -1100-
- EXISTING MINOR CONTOUR -1101-
- EXISTING GRAVEL
- PROPOSED DETENTION POND
- DISTURBED AREA/LOC
- SILT FENCE



BHB
BAIRD, HAMPTON & BROWN
 engineering and surveying
 6300 Riddle Place, Suite 700 Fort Worth, TX 76116
 email: bhb@bhbc.com • 817.338.1277 • bhbc.com
 TEPF Firm #44, #10011300, 10011302, #10194146

A-AFFORDABLE BOAT & RV STORAGE
 WILLIAMSON COUNTY, TX

TEMPORARY EROSION CONTROL PLAN

NO.	DESCRIPTION	DATE
1	FIRE MARSHAL REVIEW COMMENTS 3/6/23	03/20/2023

PROJECT NUMBER: 2022.163.000
 DATE: 3/20/2023 DRAWN BY: CEK
 DESIGN BY: CW CHECKED BY: CW

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3/20/2023 2:42PM E:\2022\000.000\2022.163.000 - Liberty Hill Storage01 Design & Drafting\02 Civil\01 C3D\163 Erosion Control.dwg TEMPOARY EROSION CONTROL PLAN

GENERAL NOTES

- ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
- ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF WALL.
- EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MUNICIPAL AND FRANCHISE UTILITY COMPANIES AND LOCATING ALL UTILITIES IN THE FIELD.
- ALL LOT LINES BASED ON BEST AVAILABLE DATA. THE CONTRACTOR SHALL NOTIFY ENGINEER IN THE EVENT OF ANY DISCREPANCY THAT WOULD ALTER THE GRADING FLOW AS DESIGNED, OR ANY FEATURE THAT IMPACTS THE ABILITY TO CONSTRUCT THE DESIGN AS SHOWN ON THIS PLAN. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY WILLIAMSON COUNTY.
- CONTRACTOR/OWNER SHALL COORDINATE WITH WILLIAMSON COUNTY TO OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.

CONSTRUCTION NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO WILLIAMSON COUNTY AND/OR THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WHICHEVER IS MORE RESTRICTIVE.
- THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE LOCATION.
- CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.

EROSION CONTROL NOTES

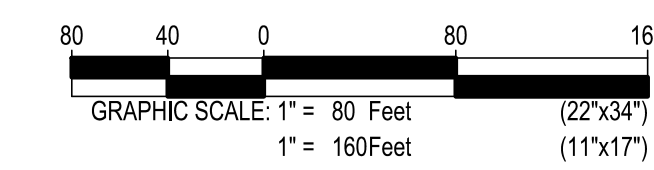
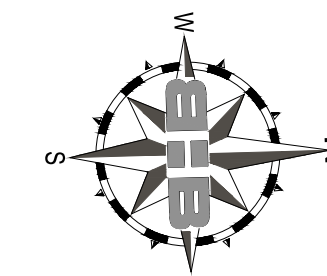
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- IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFFSITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ONSITE.
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- AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE SEEDED WITH AN APPROPRIATE ANNUAL GRASS TO PROVIDE PERMANENT VEGETATIVE STABILIZATION.

EROSION CONTROL LEGEND

DESCRIPTION	SYMBOL	LOCATION
PERMANENT ROCK RIPRAP		AS SHOWN, SEE PLAN
PERMANENT SEEDING		AS SHOWN, SEE PLAN

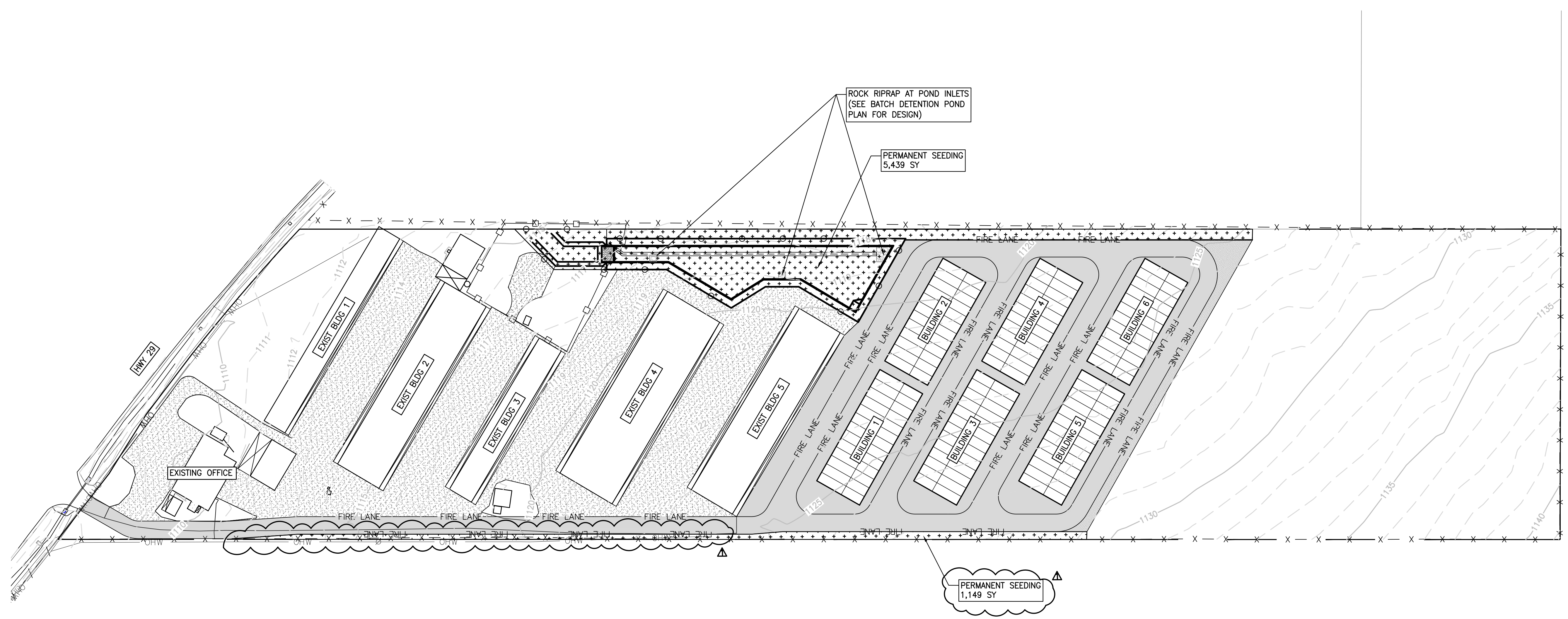
EROSION CONTROL CONSTRUCTION RESPONSIBILITIES

EROSION CONTROL MEASURE	INSTALLATION RESPONSIBILITY	MAINTENANCE RESPONSIBILITY
PERMANENT ROCK RIPRAP	EARTHWORK CONTRACTOR	ALL CONTRACTORS
PERMANENT SEEDING	EARTHWORK CONTRACTOR	ALL CONTRACTORS



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR -1100-
- EXISTING MINOR CONTOUR -1101-
- EXISTING GRAVEL
- PROPOSED ASPHALT
- PROPOSED DETENTION POND
- SEEDING
- ROCK RIPRAP



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 TEPF Firm #44, #1001300, 1001302, #10194146

A-AFFORDABLE BOAT & RV STORAGE
 WILLIAMSON COUNTY, TX

PERMANENT EROSION CONTROL PLAN

NO.	DESCRIPTION	DATE
1	FIRE MARSHAL REVIEW COMMENTS 3/6/23	03/20/2023

STATE OF TEXAS
 CHAD A. WALLACE
 127255
 LICENSED PROFESSIONAL ENGINEER

 3/20/2023

PROJECT NUMBER: 2022.163.000
 DATE: 3/20/2023 DRAWN BY: CEK
 DESIGN BY: CW CHECKED BY: CW

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