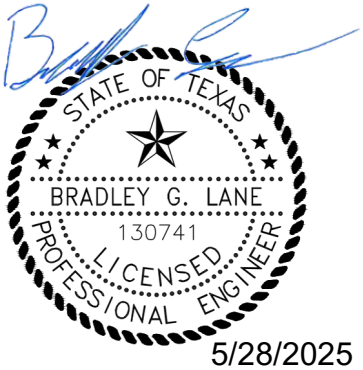
CLUCK CREEK BUSINESS SUBDIVISION
SOAPY FALLS EXPRESS CAR WASH
710 S. BELL BOULEVARD, CEDAR PARK, TEXAS 78613
MODIFICATION TO A PREVIOUSLY APPROVED CONTRIBUTING ZONE PLAN

Prepared For:

Thirty Three South Bell Investments LLC d/b/a Soapy Falls Cedar Park
652 Scenic Drive
Irving, Texas 75039
(972) 832-9883

Prepared By:



5/28/2025

TRE & Associates, LLC
TBPE Firm #13987
110 Mesa Park Drive, Suite 200
El Paso, Texas 79912
(915) 852-9093
6101 W. Courtyard Drive, Bldg. One, Ste. 100
Austin, Texas 78730
(512) 358-4049

TRE Project No. 2143-12649

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Cluck Creek Business Subdivision						**2. Regulated Entity No.: RN110895620**			
3. Customer Name: Thirty Three South Bell Investments LLC d/b/a Soapy Falls Cedar Park						**4. Customer No.: N/A**			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**		1.7633 of 14.69	
9. Application Fee:	$4,000		**10. Permanent BMP(s):**			Sedimentation/Filtration Pond			
11. SCS (Linear Ft.):	0		**12. AST/UST (No. Tanks):**			0			
13. County:	Williamson		**14. Watershed:**			South Brushy Creek			

Application Distribution

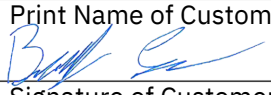
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Bradley G. Lane, P.E.
Print Name of Customer/Authorized Agent
 Signature of Customer/Authorized Agent Date

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

Modification of a Previously Approved Contributing Zone Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Modification of a Previously Approved Contributing Zone Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Bradley G. Lane, P.E.

Date: 5/28/2025

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Cluck Creek Business Subdivision
   Original Regulated Entity Name: Cluck Creek Business Subdivision
   Assigned Regulated Entity Number(s) (RN): RN110895620
   Edwards Aquifer Protection Program ID Number(s): 11001813
   ☐ The applicant has not changed and the Customer Number (CN) is: _____
   ☒ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):

☐ Any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
☒ Any change in the nature or character of the regulated activity from that which was originally approved;
☐ A change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
☒ Any development of land previously identified in a contributing zone plan as undeveloped.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

CZP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	14.69	1.7633
Type of Development	General Business	General Business
Number of Residential Lots	N/A	N/A
Impervious Cover (acres)	3.29	1.07
Impervious Cover (%)	22.39	61
Permanent BMPs	Sed/Fil Pond	Sed/Fil Pond
Other	N/A	N/A

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	N/A	N/A
Other	N/A	N/A

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	N/A	N/A
Other	N/A	N/A

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved,

including previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Projec**t. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☒ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☐ Acreage has not been added to or removed from the approved plan.
   ☒ Acreage has been added to or removed from the approved plan and is discussed in *Attachment B: Narrative of Proposed Modification*.

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

Engineering Solutions

ATTACHMENT A
ORIGINAL CONTRIBUTING ZONE PLAN APPROVAL LETTER, DATED JANUARY 28, 2020

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 28, 2020

Mr. Kevin Hunter
CSW Bell, LLC.
1703 West 5th Street, Suite 850
Austin, Texas 78703 - 5357

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: CSW Bell Boulevard; Located at 800 S Bell Blvd, Cedar Park, Texas

TYPE OF PLAN: Request for the approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer

Regulated Entity No. RN110895620; Additional ID No. 11001813

Dear Mr. Hunter:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP for the above-referenced project submitted to the Austin Regional Office by Kimley-Horn and Associates, Inc. on behalf of CSW Bell, LLC. on November 15, 2019. Final review of the CZP was completed after additional materials were received on January 13, 2020 and January 27, 2020. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 14.69 acres. It will include construction of four retail lots, driveways, sidewalk and drainage improvements. The impervious cover will be 3.29 acres (22.39 percent). Project wastewater will be disposed of by conveyance to the existing Cedar Park Wastewater Treatment Plant owned and operated by the City of Cedar Park.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one sedimentation filtration basin, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for the whole project is 2,863 pounds of TSS generated from the 3.29 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

SPECIAL CONDITIONS

I. The permanent pollution abatement measure shall be operational prior to first occupancy or use of facilities within the measure's respective drainage areas.

II. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
5. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
6. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
7. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges

COPY

from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

8. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
10. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
11. 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.
12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
13. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 5, above.

After Completion of Construction:

14. 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 Austin Regional Office within 30 days of site completion.
15. 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. A copy of the transfer of responsibility must be filed with the executive director through the Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone 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.
17. A Contributing Zone Plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact the Edwards Aquifer Protection Program Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/ng

Enclosures: Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Joel Wixson, P.E., Kimley-Horn and Associates, Inc.

TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT B

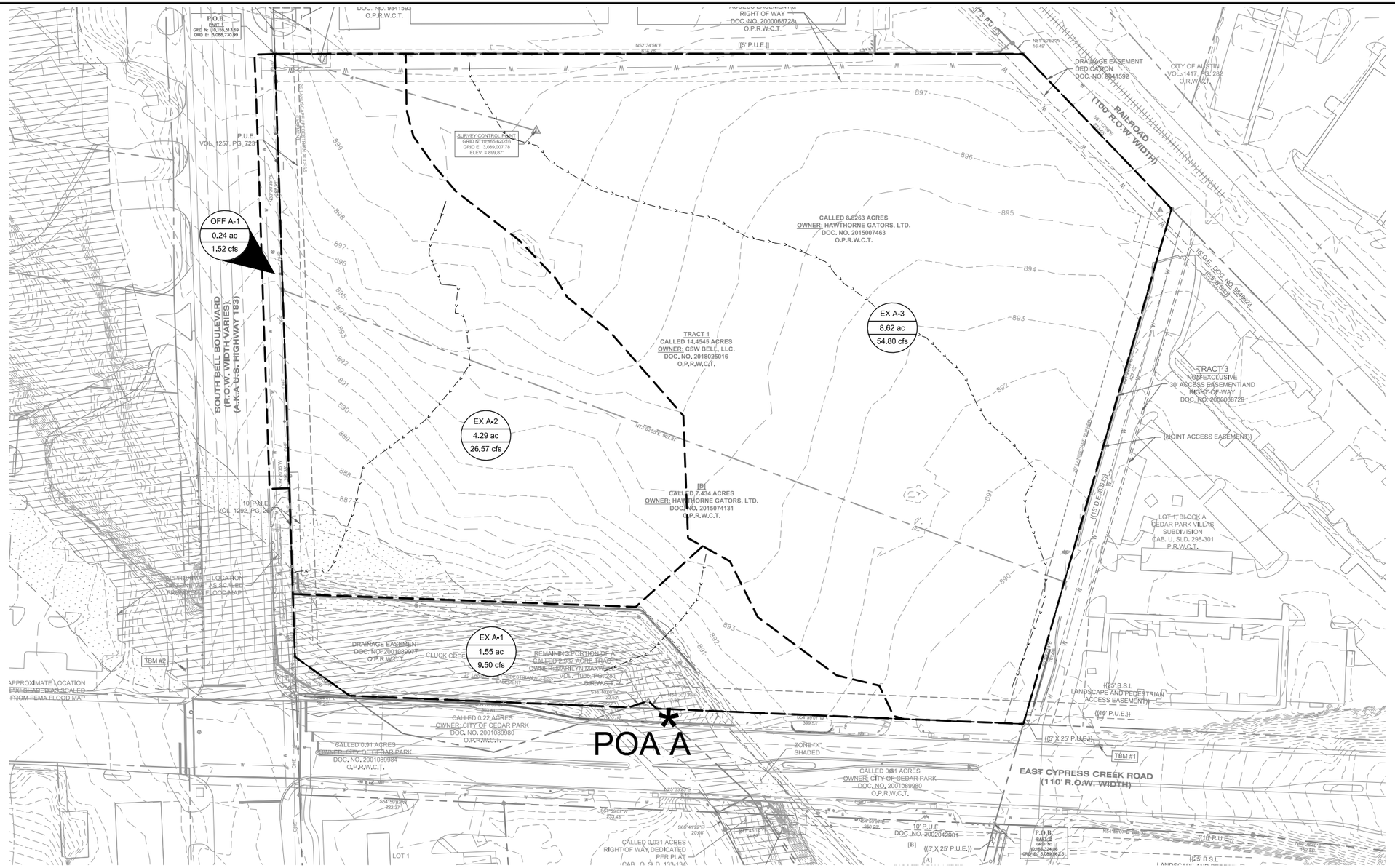
NARRATIVE OF PROPOSED MODIFICATION

This project pertains to the existing car wash site located at 710 S. Bell Blvd. Cedar Park, TX 78613. The site is platted as Lot 1, Block A within the Cluck Creek Commercial Subdivision and has a total area of 1.7633 acres. The plan modification includes the addition of a drive aisle and associated canopy totaling approximately 4,747 SF of new impervious cover. This addition will increase the site's total impervious cover from 41,742.6 SF (54.8%) to 46,489.6 SF (61%). The entirety of the site ultimately drains to an existing sedimentation/filtration pond located to the southeast where the stormwater is detained and treated for water quality. The existing water quality pond was approved in the original Contributing Zone Plan (CZP) associated with the Cluck Creek Commercial Subdivision (Edwards Aquifer Permit #11001813).

Per the originally approved CZP, the water quality pond was designed to accept a maximum impervious cover of 53,973 SF (76.6%) from the site (Lot 1). Since the site's total impervious cover is proposed to be less than what was assumed in the originally approved CZP, no updates or changes to the existing water quality pond are proposed in this modification.

TRE & ASSOCIATES
Engineering Solutions

ATTACHMENT C
CURRENT SITE PLAN OF THE APPROVED PROJECT



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR

EXISTING CONDITIONS

EX A-1 | EX A-2 | EX A-3 | OFF A-1 → POA A

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - EXISTING

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW								TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
						P-2yr24hr 3.44 IN				Grass Surface				Channel Flow											
						N	L (ft)	S (ft/ft)	Tt(min)	L (ft)	V (fps)	S (ft/ft)	Tt (min)	L (ft)	V (fps)	a ($ft^{\wedge}2$)	Pw (ft)	r	n	S (ft/ft)	Tt(min)					
EX A-1	67341.69	1.55	0.00	0.0%	77.00	0.24	100.00	0.025	**12.59**	430.34	2.87	0.032	**2.50**	0.00	-			-		-	**0.00**	**15.10**	**2.34**	**5.07**	**7.23**	**10.70**
EX A-2	187021.21	4.29	1283.94	0.0%	77.00	0.24	100.00	0.030	**11.70**	81.09	8.09	0.252	**0.17**	0.00	-			-		-	**0.00**	**11.87**	**7.06**	**15.43**	**21.51**	**31.84**
EX A-3	375275.65	8.62	13322.90	3.6%	77.75	0.24	100.00	0.019	**14.05**	950.98	1.74	0.012	**9.13**	0.00	-			-		-	**0.00**	**23.18**	**11.56**	**24.22**	**34.96**	**52.84**
OFF A-1	10244.45	0.24	547.63	5.3%	78.12	0.01	100.00	0.020	**1.34**	0.00	-	-	**0.00**	0.00	-			-		-	**0.00**	**5.00**	**0.49**	**1.04**	**1.37**	**1.98**

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	19.65	42.43	61.81	92.56

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

ADD BENCHMARKS HERE

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

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/3/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

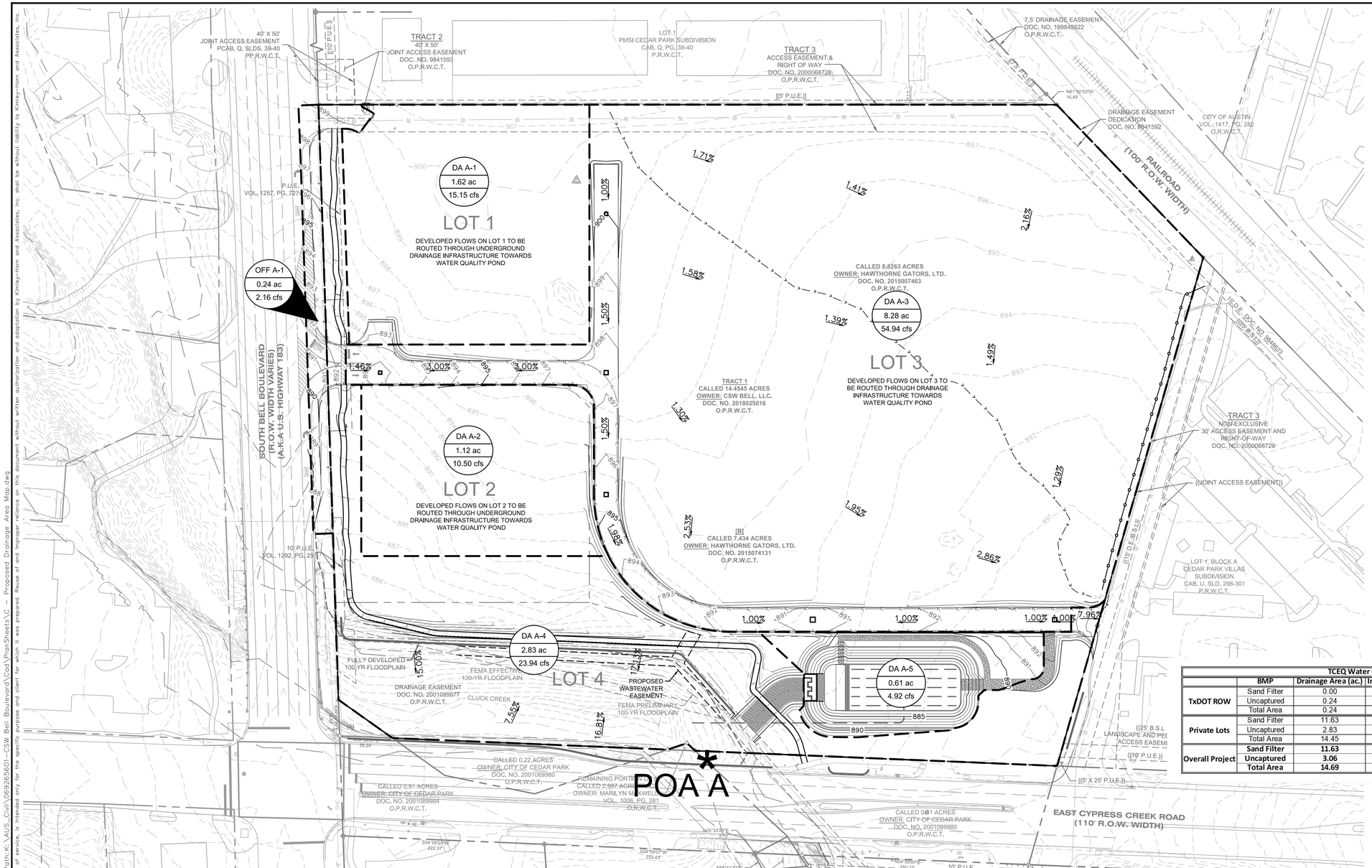
EXISTING DRAINAGE AREA MAP

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
17 OF 25

SD-19-00023



LEGEND

- X-1 / 9.9 ac / 5.5 cfs — AREA DESIGNATOR, AREA IN ACRES, Q100 FLOW IN CFS
- A-1 — INLET NUMBER
- PROPERTY LINE
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED FLOW DIRECTION
- 555 — PROPOSED CONTOUR
- 555 — EXISTING CONTOUR

PROPOSED CONDITIONS

DA A-1 | DA A-2 | DA A-3 | DA A-5 | DA A-4 | OFF A-1 → WATER QUALITY POND → POA A

TCEQ Water Quality Calculation Breakdown

	BMP	Drainage Area (ac.)	Impervious Cover (ac.)	Required Treated (lbs.)	Provided Treated (lbs.)
TxDOT ROW	Sand Filter	0.00	0.00	0	0.00
	Uncaptured	0.24	0.13	109	0.00
	Total Area	0.24	0.13	109	0.00
Private Lots	Sand Filter	11.63	2.94	2558	2863.00
	Uncaptured	2.83	0.23	197	0.00
	Total Area	14.45	3.17	2755	2863.00
Overall Project	**Sand Filter**	**11.63**	**2.94**	**2558**	**2863.00**
	Uncaptured	**3.06**	**0.35**	**305**	**0.00**
	Total Area	**14.69**	**3.29**	**2863**	**2863.00**

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - PROPOSED

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW P-2yr24hr 3.44 IN N	L (ft)	S (ft/ft)	Tt(min)	SHALLOW CONCENTRATED FLOW Grass Surface L (ft)	V (fps)	S (ft/ft)	Tt (min)	CHANNEL FLOW Channel Flow L (ft)	V (fps)	a (ft^2)	Pw (ft)	r	n	S (ft/ft)	Tt(min)	TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
DA A-1	70475.53	1.62	53973.09	76.6%	92.38	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.22	9.12	11.23	15.15
DA A-2	48687.87	1.12	39509.08	81.1%	93.48	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	3.67	6.35	7.80	10.50
DA A-3	360515.37	8.28	34494.78	9.6%	76.30	0.24	100.00	0.030	**11.70**	705.45	1.98	0.015	**5.95**	0.00	-			-		-	**0.00**	**17.65**	**11.50**	**25.38**	**36.50**	**54.94**
DA A-4	123225.37	2.83	9929.15	8.1%	78.69	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.93	12.61	16.60	23.94
DA A-5	26734.41	0.61	0.00	0.0%	74.00	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	1.06	2.45	3.31	4.92
OFF A-1	10244.45	0.24	5469.12	53.4%	88.21	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	0.68	1.26	1.57	2.16

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

*For DA A-2 the maximum allowed impervious cover for Lot 2 exceeds the total area of DA A-2 (feasible area of capture for this lot). To be conservative in the analysis the assumed impervious cover for DA A-2 is 100%

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	24.85	49.72	67.10	99.19

		Q_2	Q_{10}	Q_{25}	Q_{100}
EXISTING	POA	19.65	42.43	61.81	92.56
PROPOSED	POA	24.85	49.72	67.10	99.19

Know what's below. Call before you dig.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

TBM #1 - BEING A SQUARE CUT IN THE TOP OF A CURB ON THE NORTH SIDE OF EAST CYPRESS CREEK ROAD, AND BEING +/- 86' NORTHEAST OF THE SOUTHWEST CORNER OF LOT 1, BLOCK "A" OF CEDAR PARK VILLAS SUBDIVISION.
ELEVATION = 893.45'.

TBM #2 - BEING A MAG NAIL IN A SERVICE POLE, IN THE WEST LINE OF SOUTH BELL BOULEVARD (AKA U.S. HIGHWAY 183), AND BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF SAID SOUTH BELL BOULEVARD WITH THE NORTH LINE OF EAST CYPRESS CREEK ROAD.
ELEVATION = 890.90'.

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER 01/23/2020

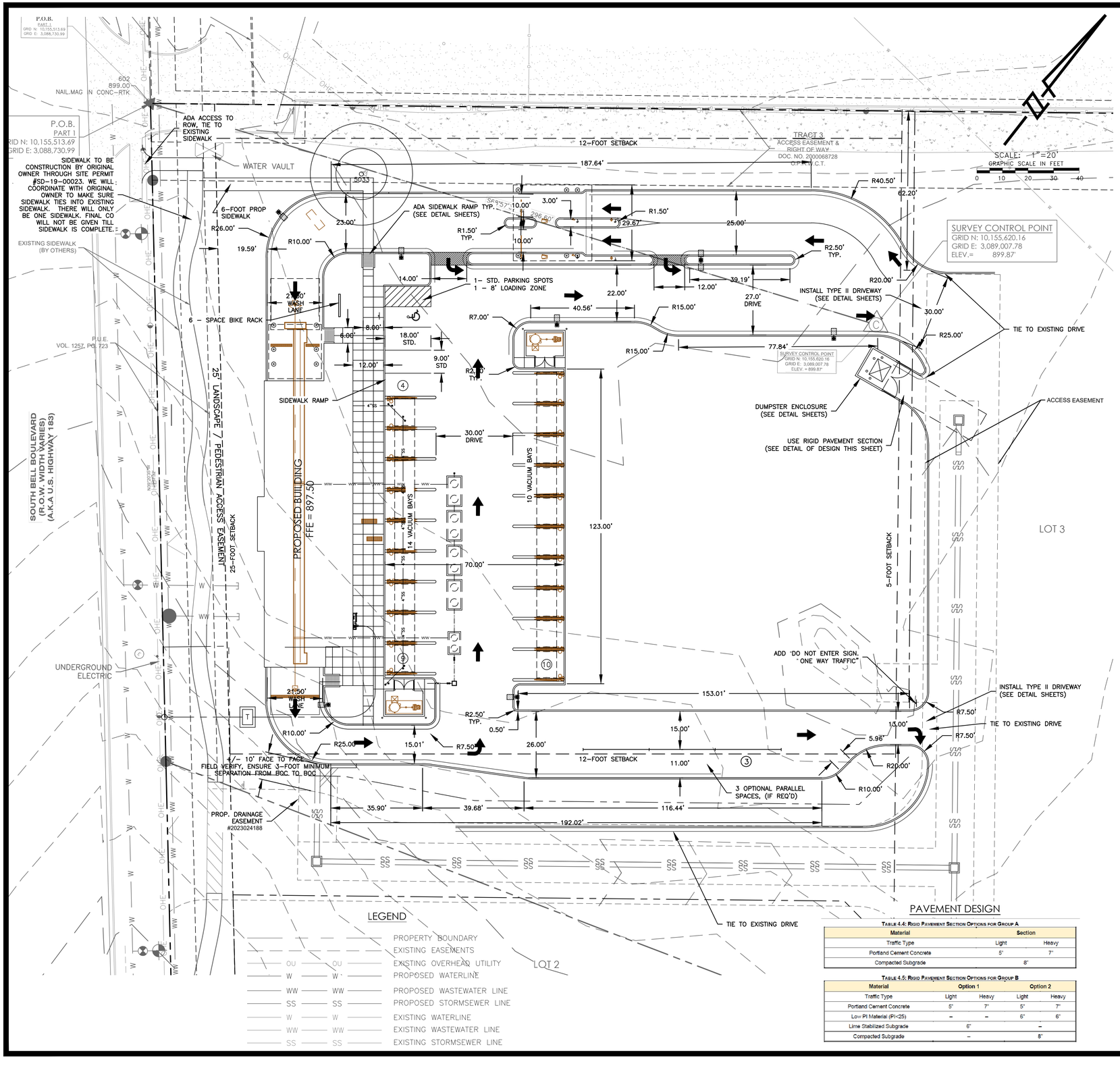
KHA PROJECT 069265601
DATE JANUARY 2020
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

PROPOSED DRAINAGE AREA MAP

CSW BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
19 OF 26

SD-19-00023



NOTES:

1. TREES AND TOPOGRAPHY BASED UPON SURVEY BY CHAPPARAL PROFESSIONAL LAND SURVEYING, INC. ON JUNE 18, 2015. NO WARRANTY IS EXPRESSED OR IMPLIED AS TO THEIR ACCURACY.
2. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14' VERTICAL CLEARANCE.
3. ESTABLISH FIRE ZONES AS SHOWN ON SITE BY PAINTING CURB RED. STENCIL THE WORDS, "FIRE ZONE/TOW-AWAY ZONE", WINH ITE LETTER SAT LEAST 3 INCHES HIGH AT 35-FOOT INTERVALS ALONG THE CURB. ALSO, SIGNS SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE. ALTERNATE MARKING OF THE FIRE LANES MAY BE APPROVED BY THE FIRE CHIEF PROVIDED THE FIRE LANES ARE CLEARLY IDENTIFIED AT BOTH ENDS AND AT INTERVALS NOT TO EXCEED 35 FEET. SEC. 901.4.2
4. ALL PARKING SPACES SHALL HAVE MINIMUM 7'-0" VERTICAL CLEARANCE.
5. WARNING SIGNS ARE REQUIRED TO BE PLACED UNDER THE OVERHEAD ELECTRIC LINES TO MAKE ALL PERSONNEL AWARE OF THE ELECTRIC HAZARD.
6. EVERY HANDICAP ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY A SIGN CENTERED 5 FEET ABOVE THE PARKING SURFACE, AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED, OR EQUIVALENT LANGUAGE. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE AND SHALL MEET THE CRITERIA SET FORTH IN UBC, 3108(C) AND ANSI A1171-1986-4.6.2.
7. CONTRACTOR TO COORDINATE WITH PROJECT ARBORIST TO TRIM TREES TO ENSURE VISIBILITY NEAR PARKING AREAS.
8. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. CAUTION: DO NOT PLACE THE STAGING AREA IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES.
10. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
11. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
12. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
13. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN.
14. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50.
15. GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT.
16. ALL LANDSCAPED AREAS ARE TO BE PROTECTED BY SIX-INCH WHEEL CURBS, WHEELSTOPS, OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7.
17. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6CONCRETE CURB ARE REQUIRED. IF A STANDA RCDU R6B AND GUTTER ARE NOT PROVIDED FOR ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7 F, ROTECTION OF LANDSCAPE ARE AS
18. RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A SEPARATE BUILDING PERMIT. [IBC CODE 105.2]
19. SEE ARCHITECTURAL PLANS FOR CANOPY, BUILDING AND ENCLOSURE DESIGN.

LIGHT NOTE:

1. LIGHT SOURCES SHALL BE COMPLETELY CONCEALED WITHIN OPAQUE HOUSINGS AND SHALL NOT BE VISIBLE FROM ADJACENT STREETS OR PROPERTIES. ALL EXTERIOR LIGHTING FIXTURES SHALL BE FULL CUT-OFF TYPE FIXTURES. LIGHTING FIXTURES SHALL BE NO MORE THAN TWENTY-FIVE (20) FEET IN HEIGHT AS MEASURED FROM ADJACENT, FINISHED GRADE.

PARKING TABLE:

PARKING REQ. FOR CARWASH	(1 SPACE FOR 200SF of GFA)
VACUUMS REQ. FOR CARWASH	(1SPACE FOR EVERY VACUUM)
REQUIRED PARKING:	
CARWASH: 330 SQFT /200 SF	= 2 SPACES
VACUUMS: 1 VAC/SPACE	= 19 SPACES

PROPOSED PARKING:
STANDARD PARKING: 3 SPACES
ADA PARKING: 1 SPACE
VACUUM PARKING: 19 SPACES
SUBTOTAL PROPOSED PARKING: 23 SPACES

BICYCLE PARKING PROPOSED: 3 SPACES

3 - PARALLEL SPACES (IF REQUIRED)

LEGEND

- PROPERTY BOUNDARY
- EXISTING EASEMENTS
- OU — OU — EXISTING OVERHEAD UTILITY
- W — W — PROPOSED WATERLINE
- WW — WW — PROPOSED WASTEWATER LINE
- SS — SS — PROPOSED STORMSEWER LINE
- W — W — EXISTING WATERLINE
- WW — WW — EXISTING WASTEWATER LINE
- SS — SS — EXISTING STORMSEWER LINE

PAVEMENT DESIGN

TABLE 4.4: RIGID PAVEMENT SECTION OPTIONS FOR GROUP A

Material	Section	
Traffic Type	Light	Heavy
Portland Cement Concrete	5"	7"
Compacted Subgrade	8"	

TABLE 4.5: RIGID PAVEMENT SECTION OPTIONS FOR GROUP B

Material	Option 1		Option 2	
Traffic Type	Light	Heavy	Light	Heavy
Portland Cement Concrete	5"	7"	5"	7"
Low PI Material (PI<25)	–	–	6"	6"
Lime Stabilized Subgrade	6"		–	
Compacted Subgrade	–		8"	

Green Civil Design GCD
Engineering & Consulting
Texas Registered Engineering Firm F-17563
301 DENALI PASS, SUITE 3,
CEDAR PARK, TX 78613
(512) 640-6590

STATE OF TEXAS
KERRI K. PENA
90255
LICENSED PROFESSIONAL ENGINEER

7/17/2023

Marc Dickey Collaborative
6410 wilbur drive austin texas 512.297.8651

WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
OVERALL SITE PLAN

SD-21-00045

City of Cedar Park Development Services Department
SD-21-00045
APPROVED
09/28/2023

REVISIONS/ISSUES:

DRAWN BY:

JOB NO. XXXX

SHEET NO. 7 OF 27

Contributing Zone Plan Application

Texas Commission on Environmental Quality

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

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

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

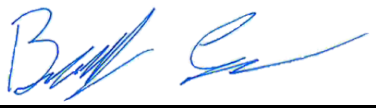
Signature

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

Print Name of Customer/Agent: Bradley G. Lane, P.E.

Date: 5/28/2025

Signature of Customer/Agent:



Regulated Entity Name: Cluck Creek Business Subdivision

Project Information

1. County: Williamson
2. Stream Basin: South Brushy Creek
3. Groundwater Conservation District (if applicable): N/A
4. Customer (Applicant):

   Contact Person: Howard Yao
   Entity: Thirty Three South Bell Investments LLC d/b/a Soapy Falls Cedar Park
   Mailing Address: 652 Scenic Drive
   City, State: Irving, TX Zip: 75039
   Telephone: 972-832-9883 Fax: _____
   Email Address: howard@soapyfalls.com

5. Agent/Representative (If any):

   Contact Person: Bradley G. Lane, P.E.
   Entity: TRE & Associates, LLC
   Mailing Address: 6101 W. Courtyard Drive, Building 1, Suite 100
   City, State: Austin, TX Zip: 78730
   Telephone: 512-358-4049 Fax: _____
   Email Address: blane@tr-eng.com

6. Project Location:

   ☒ The project site is located inside the city limits of Cedar Park.
   ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
   ☐ The project site is not located within any city's limits or ETJ.

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

   710 S. Bell Blvd., Cedar Park, TX 78613

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

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

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

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

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

11. Existing project site conditions are noted below:

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

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

12. The type of project is:

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

13. Total project area (size of site): 14.69 Acres

Total disturbed area: 13.64 Acres

14. Estimated projected population: N/A

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

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	***Sq. Ft.***	***Sq. Ft./Acre***	***Acres***
Structures/Rooftops	16,733.98	÷ 43,560 =	0.384
Parking	117,633.94	÷ 43,560 =	2.701
Other paved surfaces	8,937.84	÷ 43,560 =	0.205
Total Impervious Cover	143,305.76	÷ 43,560 =	3.290

Total Impervious Cover 3.290 **÷ Total Acreage** 14.69 **X 100 =** 22.39**% Impervious Cover**

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

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

For Road Projects Only

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

☒ N/A

18. Type of project:

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

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

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

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

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

21. Pavement Area:

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

☐ N/A

26. Wastewater will be disposed of by:

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

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

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

☒ Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Cedar Park WWTP (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

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

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

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

Total x 1.5 = _____ Gallons

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

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

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

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

Table 3 - Secondary Containment

Length (L)(Ft.)	*Width(W)(Ft.)*	*Height (H)(Ft.)*	*L x W x H = (Ft3)*	*Gallons*

Total: _____ Gallons

30. Piping:

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

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

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

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

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

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

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

Site Plan Requirements

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

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

    Site Plan Scale: 1" = 60'.

35. 100-year floodplain boundaries:

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

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

    The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____.

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

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

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

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

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

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

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

42. ☐ Surface waters (including wetlands).

    ☒ N/A

43. ☒ Locations where stormwater discharges to surface water.

    ☐ There will be no discharges to surface water.

44. ☐ Temporary aboveground storage tank facilities.

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

45. ☐ Permanent aboveground storage tank facilities.

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

46. ☒ Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

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

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

☒ N/A

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

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

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

☒ N/A

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

☒ N/A

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

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

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

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

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

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

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

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

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

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

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

    ☐ N/A

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

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

☐ N/A

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

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

    ☒ N/A

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

    ☒ N/A

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

    ☐ N/A

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

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

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

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

Administrative Information

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

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

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

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

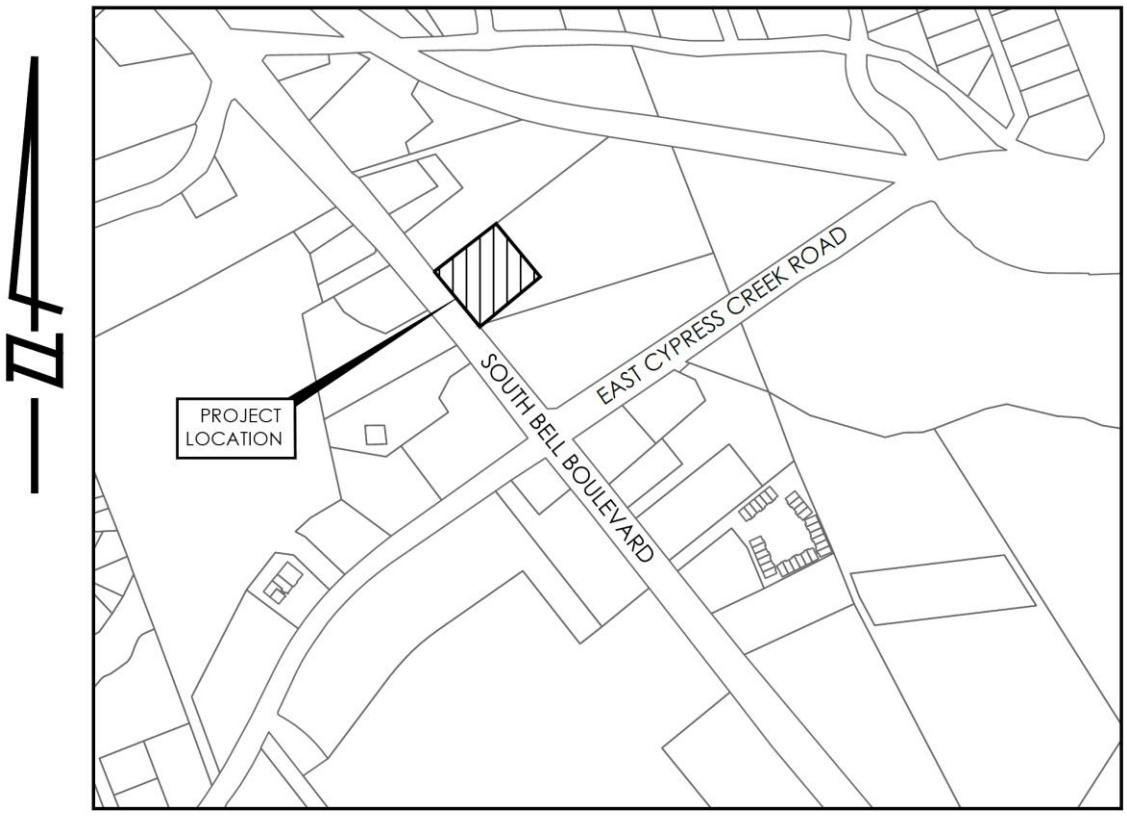
TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT A
ROAD MAP

TRE & ASSOCIATES

Engineering Solutions



VICINITY MAP

N.T.S.

Directions from Texas Commission on Environmental Quality – 12100 Park 35 Circle, Austin, TX 78753

- Head south on I-35
- Turn right onto US-183 N
- Take the US-183 N exit toward Avery Ranch Blvd.
- Turn left onto US-183 N/Avery Ranch Blvd.
- Turn right onto US-183 N for about 1.3 miles

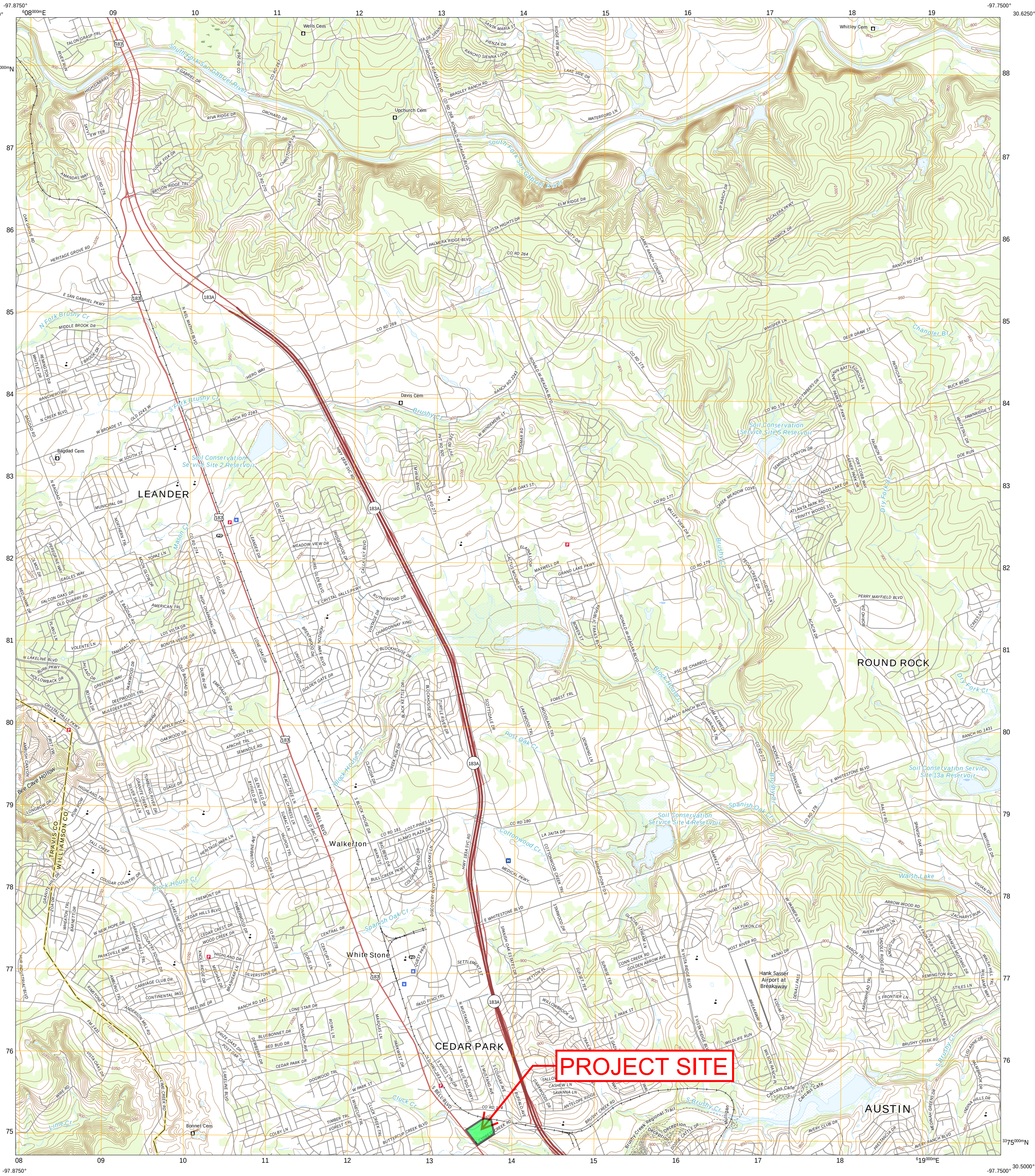
TRE & ASSOCIATES
Engineering Solutions

ATTACHMENT B
USGS QUADRANGLE MAP

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

The National Map
US Topo

LEANDER QUADRANGLE
TEXAS
7.5-MINUTE SERIES



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

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery....NAIP, September 2016 - November 2016
Roads....U.S. Census Bureau, 2015
Names....GNIS, 1979 - 2018
Hydrography....National Hydrography Dataset, 2002 - 2018
Contours....National Elevation Dataset, 2002
Boundaries....Multiple sources; see metadata file 2016 - 2017

Wetlands....FWS National Wetlands Inventory 1982

MN
GN
3°43´ 66 MILS
0°36´ 11 MILS

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Liberty Hill
2 Leander NE
3 Georgetown
4 Nameless
5 Round Rock
6 Mansfield Dam
7 Jollyville
8 Pflugerville West

ADJOINING QUADRANGLES

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

LEANDER, TX
2019

NSN. 7643016396981
NGA REF NO. USGSX24K25238

TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT C
PROJECT NARRATIVE

The subject site (Soapy Falls Express Car Wash) is located on Lot 1, Block A of the Cluck Creek Commercial Subdivision at 710 S. Bell Blvd. Cedar Park, TX 78613. Block A of the subdivision is comprised of 14.45 acres, and the subject site is comprised of 1.7633 acres. The existing development plan consists of one (1) 3,800 SF drive-thru car wash facility with associated parking, driveways, utilities, and drainage infrastructure. The proposed improvements include the addition of a drive aisle and associated canopy totaling approximately 4,747 SF of new impervious cover.

The site lies within the Edwards Aquifer Contributing Zone; therefore, the site is regulated by the Texas Commission on Environmental Quality (TCEQ). The entirety of the site ties into an existing sedimentation/filtration pond located to the southeast. The existing water quality pond was approved in the original Contributing Zone Plan (CZP) associated with the Cluck Creek Commercial Subdivision (Edwards Aquifer Permit #11001813) and has been constructed.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 48491C0464F, dated December 20, 2019, no portion of the site is within the limits of the 100-year flood hazard area.

The City of Cedar Park will provide both water and wastewater service to the site. An 8-inch waterline and 8-inch wastewater line located on the southwest side of site are stubbed out to serve the site.

TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT D

FACTORS AFFECTING SURFACE WATER QUALITY

Possible factors that could affect surface water quality post construction include pollutants from oil and petroleum-based products from vehicles, landscape fertilizers, solvents and cleaners. No heavy industrial activities are anticipated on this site post construction. The property is zoned for commercial use only.

TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT E

VOLUME AND CHARACTER OF STORMWATER

The existing water quality pond was approved and constructed with the Cluck Creek Commercial Subdivision Contributing Zone Plan EARZ No. 11001813. The stormwater runoff generated onsite for this project is conveyed to the pond via curbs and gutters leading to inlets and storm sewer piping. Per City of Cedar Park requirements, the existing storm sewer system was designed to handle the 25-year storm.

The existing water quality was designed for a maximum impervious cover of 53,973 SF (76.6%) from the 1.7633-acre site. This plan modification proposes an addition of 4,747 SF of new impervious cover to the site for a total impervious cover of 46,489.6 SF (61%). Per the originally approved CZP, the total runoff flow generated from the site was assumed to be 15.15 cfs in a 100-year storm event. The increase in impervious cover to the site will not impact this assumed flow rate.

Engineering Solutions

ATTACHMENT F

SUITABILITY LETTER FROM AUTHORIZED AGENT

Wastewater will be treated at the City of Cedar Park Wastewater Treatment Facility; therefore, a Suitability Letter from an Authorized Agent will not be necessary for this project.

Engineering Solutions

ATTACHMENT G

ALTERNATIVE SECONDARY CONTAINMENT METHOD

There are no Aboveground Storage Tanks proposed for this site, therefore, an alternative secondary containment method will not be necessary for the purposes of this development.

Engineering Solutions

ATTACHMENT H

AST CONTAINMENT STRUCTURE DRAWINGS

There are no Aboveground Storage Tanks proposed for this site, therefore, an AST containment structure drawings will not be necessary for the purposes of this development.

Engineering Solutions

ATTACHMENT I

20% OR LESS IMPERVIOUS COVER WAIVER

Improvements associated with the subject property exceed 20 percent of impervious cover.

Section not applicable to this project.

Engineering Solutions

ATTACHMENT J

BMPs FOR UPGRADIENT STORM WATER

There is no upgradient stormwater being conveyed through the site.

TRE & ASSOCIATES

Engineering Solutions

ATTACHMENT K

BMPs FOR ON-SITE STORMWATER

An existing sand filter is utilized as the permanent best management practice for the site. TCEQ water quality requirements are met with the sand filter design. All stormwater runoff from impervious areas are collected by an existing storm sewer system and routed through the structures to provide the required overall removal of 80% of the increase in Total Suspended Solids.

Since the added improvements in this modification do not affect the total impervious cover outlined in the original water quality design, the “TSS Removal Calculations” spreadsheet from the originally approved CZP are still valid. The spreadsheet is included in this Attachment for reference.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bell Boulevard Commercial
Date Prepared: 11/14/2019

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

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

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	14.69	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	3.29	acres
Total post-development impervious cover fraction * =	0.22	
P =	32	inches

$L_{M\ TOTAL\ PROJECT}$ = **2863** lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	11.63	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.94	acres
Post-development impervious fraction within drainage basin/outfall area =	0.25	
$L_{M\ THIS\ BASIN}$ =	2558	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter
Removal efficiency = 89 percent

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

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

where:

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

A_C =	11.63	acres
A_I =	2.94	acres
A_P =	8.69	acres
L_R =	3031	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2863 lbs.

F = **0.94**

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

Rainfall Depth = 2.40 inches

Post Development Runoff Coefficient =	0.23		
On-site Water Quality Volume =	23591	cubic feet	

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

Off-site area draining to BMP =	0.00	acres	
Off-site Impervious cover draining to BMP =	0.00	acres	
Impervious fraction of off-site area =	0		
Off-site Runoff Coefficient =	0.00		
Off-site Water Quality Volume =	0	cubic feet	
Storage for Sediment =	4718		
Total Capture Volume (required water quality volume(s) x 1.20) =	28309	cubic feet	

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

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin =	NA	cubic feet	

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	Enter determined permeability rate or assumed value of 0.1
Irrigation area =	NA	square feet	
	NA	acres	

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

Required Water Quality Volume for extended detention basin =	NA	cubic feet	

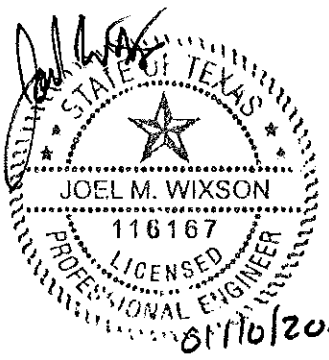
9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	28309	cubic feet	
Minimum filter basin area =	1311	square feet	
Maximum sedimentation basin area =	11795	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	2949	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	28309	cubic feet	
Minimum filter basin area =	2359	square feet	
Maximum sedimentation basin area =	9436	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	590	square feet	For maximum water depth of 8 feet



JW

Engineering Solutions

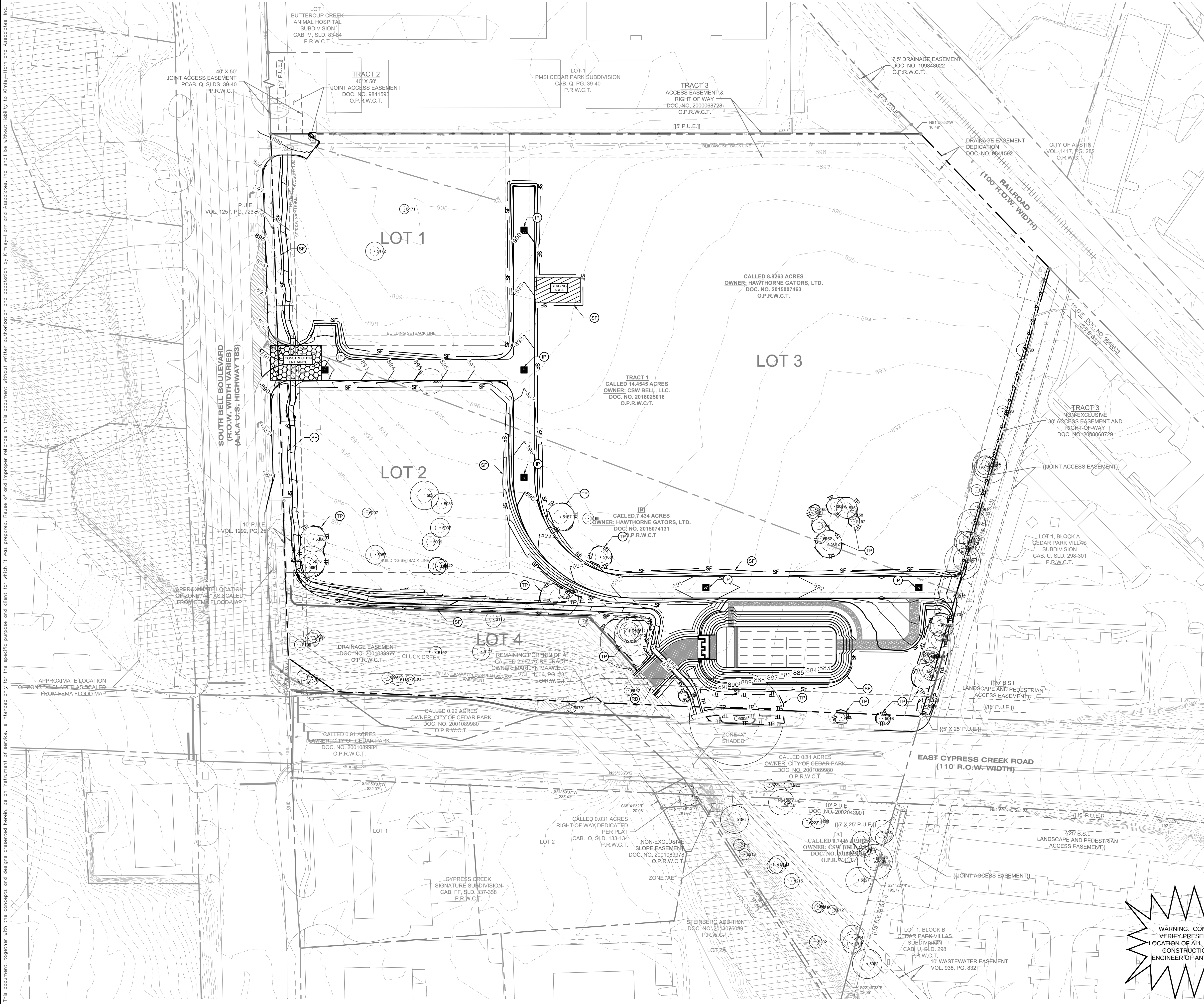
ATTACHMENT L

BMPs FOR SURFACE STREAMS

All runoff directed to the stream is treated per TCEQ requirements and no increase in peak flows are anticipated. Additionally, water discharged to the creek from the existing water quality pond passes through a headwall and riprap structure to reduce the runoff velocity prior to entering the creek. These procedures limit erosion and contamination of the surface stream. All permanent BMPs have been designed to remove 80% of the increase in Total Suspended Solids as per TCEQ requirements.

TRE & ASSOCIATES
Engineering Solutions

ATTACHMENT M
CONSTRUCTION PLANS



LEGEND

SF	(SF)	SILT FENCE
TP	(TP)	TREE PROTECTION
	(IP)	PROPOSED INLET PROTECTION
	(CE)	CONSTRUCTION ENTRANCE
	(RB)	ROCK BERM
450		EXISTING CONTOURS
450		PROPOSED CONTOURS
		LIMITS OF CONSTRUCTION AREA
		TREE TO REMAIN
		TREE TO REMOVED

NOTES:

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF CEDAR PARK RULES AND REGULATIONS
4. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURE DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
5. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
6. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
7. ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED BY THE CITY DURING CONSTRUCTION.
8. REFERENCE EROSION CONTROL NOTES AND DETAILS ON SHEET 7.
9. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING [ECM 1.4.4.B.3, SECTION 5, I.]. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY [ECM 1.4.4.D.4].
10. ALL DISTURBED AREAS TO BE RE-VEGETATED PER CITY OF AUSTIN STANDARDS.
11. SEE LANDSCAPE ARCHITECT PLANS FOR TREE PRESERVATION PLAN AND TREE LIST.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

ADD BENCHMARKS HERE

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

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

STATE OF TEXAS JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER
11/13/2019

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069265601	SEPTEMBER 2019	AS SHOWN	BMW	TJO	JMW

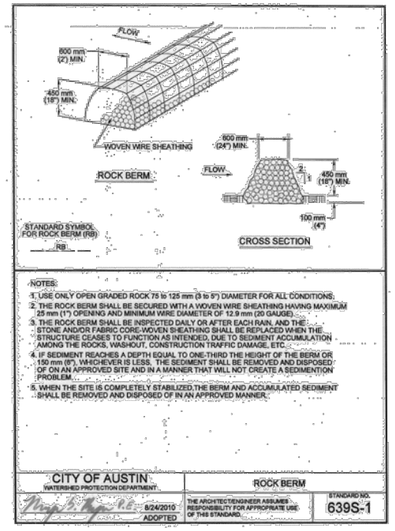
EROSION CONTROL PLAN

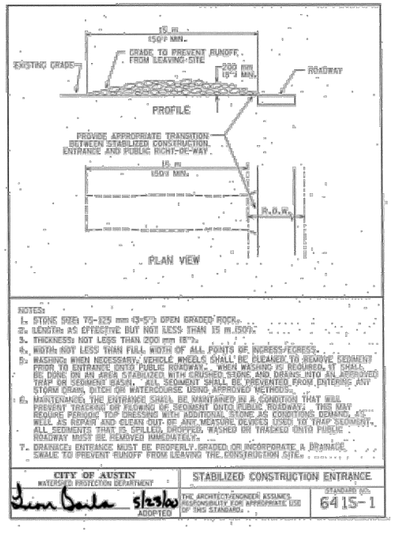
CSW BELL BOULEVARD

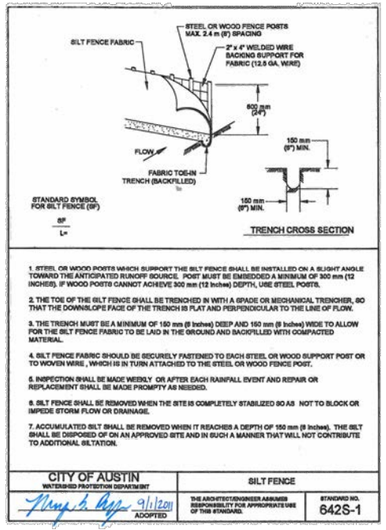
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

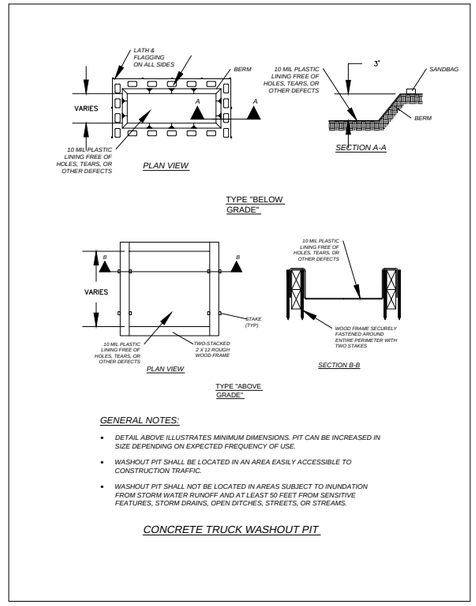
SHEET NUMBER
7 OF 25

SD-19-00023









CONCRETE TRUCK WASHOUT PIT
SCALE: N.T.S.

GRATE INLET PROTECTION MAT
SCALE: N.T.S.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS
ADD BENCHMARKS HERE

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

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Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/13/2019

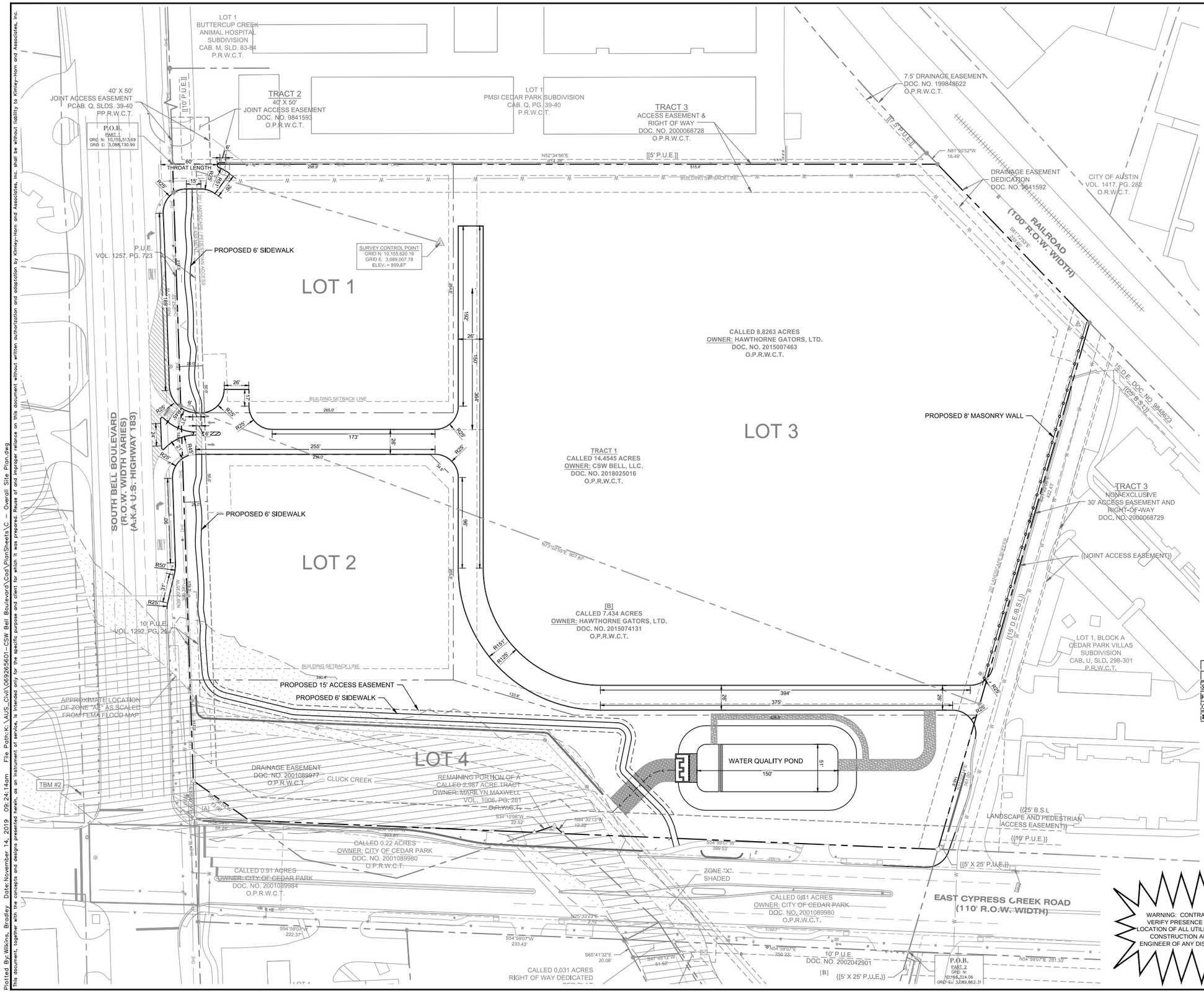
KHA PROJECT	069265601
DATE	SEPTEMBER 2019
SCALE:	AS SHOWN
DESIGNED BY:	BMW
DRAWN BY:	TJO
CHECKED BY:	JMW

EROSION CONTROL DETAILS

CSW
BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
8 OF 25

SD-19-00023



LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED TAPPING SLEEVE & VALVE
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE
- ADA ROUTE

NOTES:

1. TREES AND TOPOGRAPHY BASED UPON SURVEY BY CHAPPARAL PROFESSIONAL LAND SURVEYING, INC. ON JUNE 18, 2015. NO WARRANTY IS EXPRESSED OR IMPLIED AS TO THEIR ACCURACY.
2. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14' VERTICAL CLEARANCE.
3. ESTABLISH FIRE ZONES AS SHOWN ON SITE BY PAINTING CURB RED. STENCIL THE WORDS, "FIRE ZONE/TOW-AWAY ZONE", IN WHITE LETTERS AT LEAST 3 INCHES HIGH AT 35-FOOT INTERVALS ALONG THE CURB. ALSO, SIGNS SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE. ALTERNATE MARKING OF THE FIRE LANES MAY BE APPROVED BY THE FIRE CHIEF PROVIDED THE FIRE LANES ARE CLEARLY IDENTIFIED AT BOTH ENDS AND AT INTERVALS NOT TO EXCEED 35 FEET, SEC. 901.4.2
4. ALL PARKING SPACES SHALL HAVE MINIMUM 7'-0" VERTICAL CLEARANCE.
5. WARNING SIGNS ARE REQUIRED TO BE PLACED UNDER THE OVERHEAD ELECTRIC LINES TO MAKE ALL PERSONNEL AWARE OF THE ELECTRIC HAZARD.
6. EVERY HANDICAP ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY A SIGN CENTERED 5 FEET ABOVE THE PARKING SURFACE, AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED, OR EQUIVALENT LANGUAGE. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE AND SHALL MEET THE CRITERIA SET FORTH IN UBC, 3108(c) AND ANSI A117.1-1986-4.6.2.
7. CONTRACTOR TO COORDINATE WITH PROJECT ARBORIST TO TRIM TREES TO ENSURE VISIBILITY NEAR PARKING AREAS.
8. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. CAUTION: DO NOT PLACE THE STAGING AREA IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES.
10. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
11. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
12. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
13. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN.
14. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50.
15. GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT.
16. ALL LANDSCAPED AREAS ARE TO BE PROTECTED BY SIX-INCH WHEEL CURBS, WHEELSTOPS, OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7.
17. COMPLIANCE WITH THE COMMERCIAL AND MULTI-FAMILY RECYCLING ORDINANCE IS MANDATORY FOR MULTI-FAMILY COMPLEXES WITH 100 OR MORE UNITS AND BUSINESSES WITH 100 OR MORE EMPLOYEES (AUSTIN CITY CODE, SEC. 15-4-91).
18. REFER TO CITY OF AUSTIN ELECTRICAL DEPARTMENT FOR CONSTRUCTION PLANS AND DETAILS. CONTACT REY MARTINEZ (512-505-7643).
19. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6" CONCRETE CURB ARE REQUIRED. IF A STANDARD 6" CURB AND GUTTER ARE NOT PROVIDED FOR ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7. "PROTECTION OF LANDSCAPE AREAS".
20. RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A SEPARATE BUILDING PERMIT. (IBC CODE 105.2)
21. SEE ARCHITECTURAL PLANS FOR CARPORT DESIGN.
22. THE NUMBER OF DRIVEWAYS ON OLD SAN ANTONIO ROAD IS LIMITED TO ONE.
23. EACH COMPACT PARKING SPACE/AISLE WILL BE SIGNED "SMALL CAR ONLY."
24. ALL FDC's TO BE TWO 2½" SIAMESE CONNECTIONS.

IC FOR SUBDIVISION CONTRUCTION IMPROVEMENTS

	Lot 1 (sf)	Lot 2 (sf)	Lot 3 (sf)	Lot 4 (sf)	Total (sf)
Structures/Roofs	0	0	0	0	0.00
Parking	2290.96	0	36347.8	46.73	38685.49
Other Paved Surfaces	1134.83	1142.83	608.89	5944.937	8831.49
Total	3425.79	1142.83	36956.69	5991.667	47516.98

BENCHMARKS

ADD BENCHMARKS HERE

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

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

No.	REVISIONS	DATE	BY

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TBPE Firm No. 928

JOEL M. WIXSON
116167
LICENSED
PROFESSIONAL ENGINEER
11/13/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

OVERALL SITE PLAN

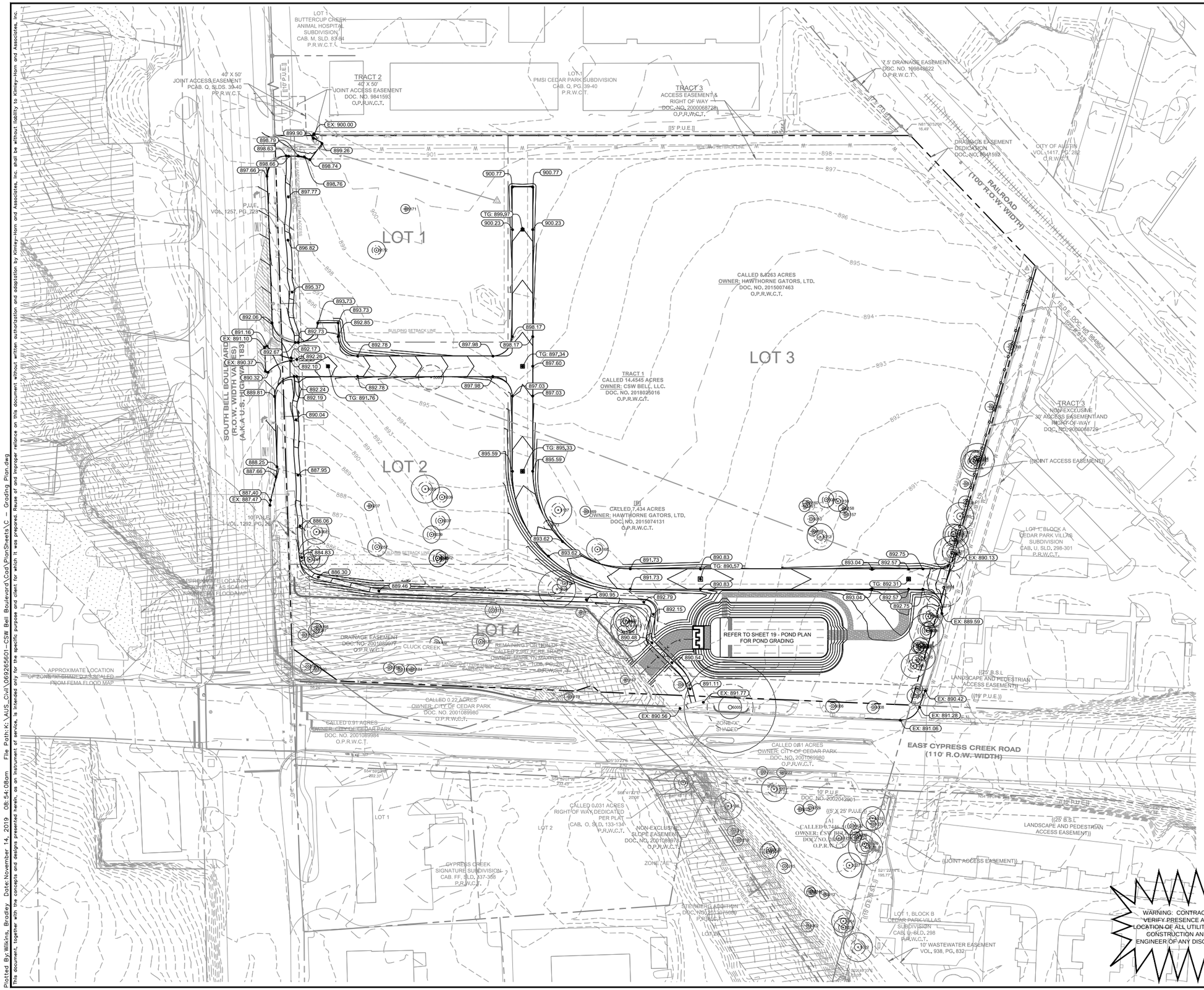
CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
9 OF 25

SD-19-00023

Plotted By:Wilkins, Bradley Date:November 14, 2019 08:54:08am File Path:K:\AUS_Civil\069265601-CSW Bell Boulevard\Cad\PlanSheets\C - Grading Plan.dwg



LEGEND

	PROPERTY LINE
FF=XXX.XX	PROPOSED FINISHED FLOOR ELEVATION
XXX.X●	PROPOSED TOP OF PAVEMENT ELEVATION
EX XXX.X ●	EXISTING TOP OF PAVEMENT ELEVATION
TG XXX.X●	PROPOSED TOP OF GRATE
TW XXX.X●	PROPOSED GRADE AT TOP OF WALL
BW XXX.X●	PROPOSED GRADE AT BOTTOM OF WALL
EW XXX.X●	PROPOSED GRADE AT END OF WALL
	PROPOSED SWALE
HP	HIGH POINT
	FLOW DIRECTION
	PROPOSED RETAINING WALL
555	PROPOSED CONTOUR
555	EXISTING CONTOUR
	EXISTING TREE TO REMAIN

NOTES:

1. ALL PROPOSED ELEVATIONS ARE TOP OF PAVEMENT OR NATURAL GROUND UNLESS OTHERWISE NOTED.
2. ALL TOP OF WALL ELEVATIONS ARE TO TOP OF GRADE AT WALL.
3. ALL BOTTOM OF WALL ELEVATIONS ARE TO BOTTOM OF GRADE AT WALL.
4. CONTRACTOR TO VERIFY A.D.A. COMPLIANCE FOR GRADES IN ALL SIDEWALK ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. STANDARDS. NOT EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSS SLOPE AND NOT EXCEED 2.0% IN ANY DIRECTION IN ACCESSIBLE PARKING AREAS.
5. MAINTAIN EXISTING GRADE IN TREE WELLS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO AREA INLETS.

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BENCHMARKS

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TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER
11/13/2019

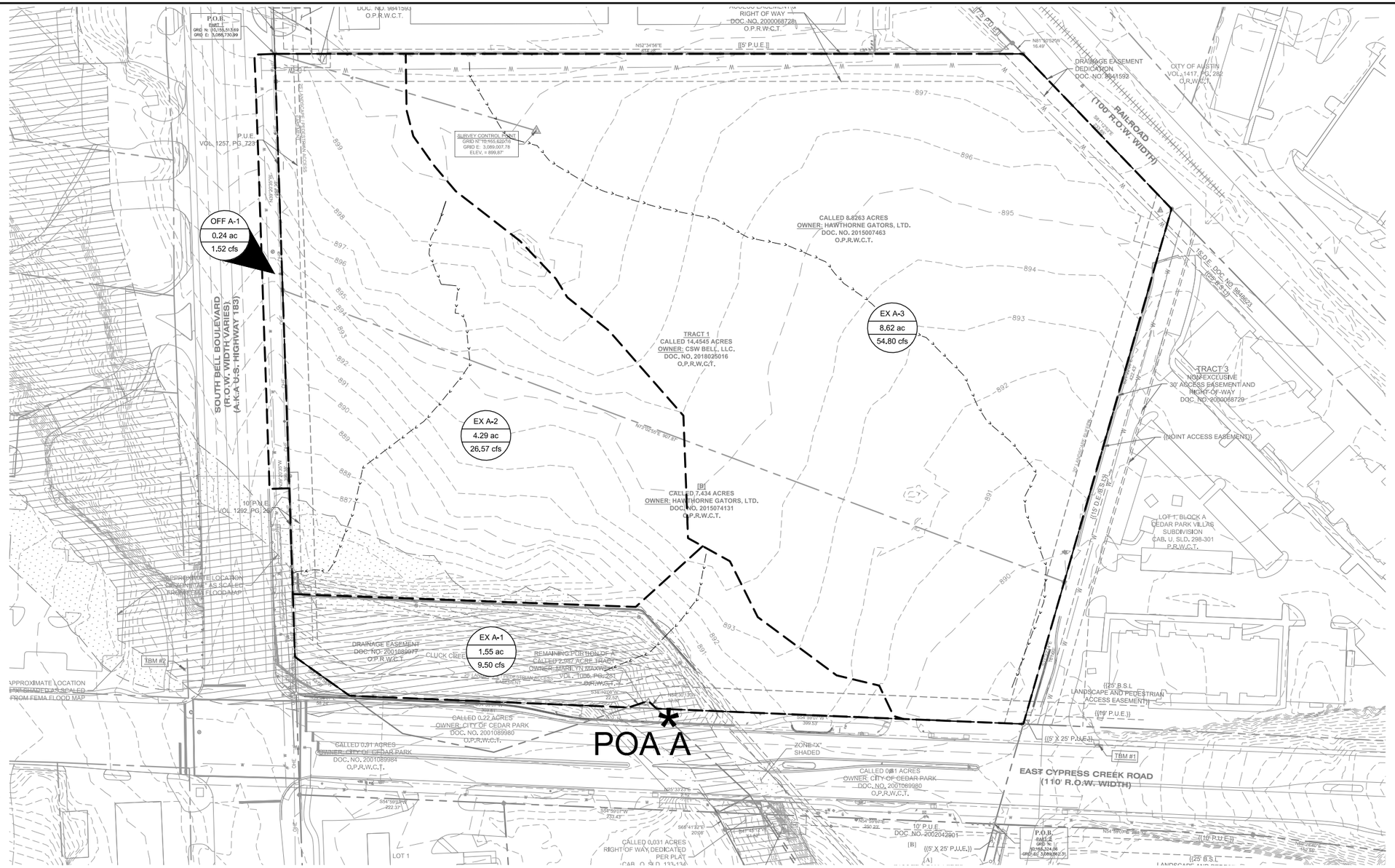
KHA PROJECT	069265601
DATE	SEPTEMBER 2019
SCALE:	AS SHOWN
DESIGNED BY:	BMW
DRAWN BY:	TJO
CHECKED BY:	JMW

CSW BELL BOULEVARD
OVERALL GRADING PLAN

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
16 OF 25

SD-19-00023



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR

EXISTING CONDITIONS

EX A-1 | EX A-2 | EX A-3 | OFF A-1 → POA A

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - EXISTING

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW								TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
						P-2yr24hr 3.44 IN				Grass Surface				Channel Flow											
						N	L (ft)	S (ft/ft)	Tt(min)	L (ft)	V (fps)	S (ft/ft)	Tt (min)	L (ft)	V (fps)	a ($ft^{\wedge}2$)	Pw (ft)	r	n	S (ft/ft)	Tt(min)					
EX A-1	67341.69	1.55	0.00	0.0%	77.00	0.24	100.00	0.025	**12.59**	430.34	2.87	0.032	**2.50**	0.00	-			-		-	**0.00**	**15.10**	**2.34**	**5.07**	**7.23**	**10.70**
EX A-2	187021.21	4.29	1283.94	0.0%	77.00	0.24	100.00	0.030	**11.70**	81.09	8.09	0.252	**0.17**	0.00	-			-		-	**0.00**	**11.87**	**7.06**	**15.43**	**21.51**	**31.84**
EX A-3	375275.65	8.62	13322.90	3.6%	77.75	0.24	100.00	0.019	**14.05**	950.98	1.74	0.012	**9.13**	0.00	-			-		-	**0.00**	**23.18**	**11.56**	**24.22**	**34.96**	**52.84**
OFF A-1	10244.45	0.24	547.63	5.3%	78.12	0.01	100.00	0.020	**1.34**	0.00	-	-	**0.00**	0.00	-			-		-	**0.00**	**5.00**	**0.49**	**1.04**	**1.37**	**1.98**

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	19.65	42.43	61.81	92.56

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BENCHMARKS

ADD BENCHMARKS HERE

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JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/3/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

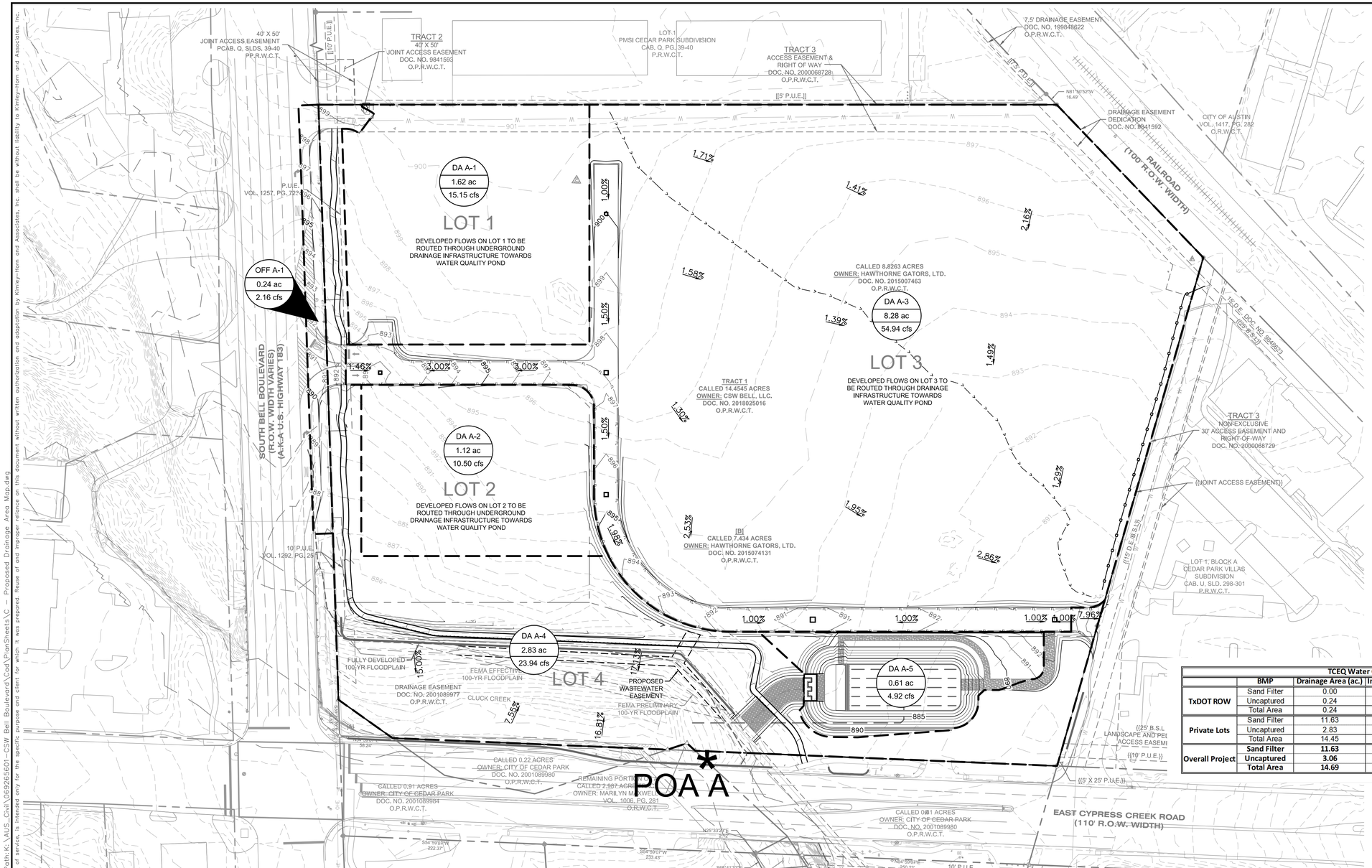
EXISTING DRAINAGE AREA MAP

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
17 OF 25

SD-19-00023



LEGEND

- X-1 / 9.9 ac / 5.5 cfs — AREA DESIGNATOR, AREA IN ACRES, Q100 FLOW IN CFS
- A-1 — INLET NUMBER
- PROPERTY LINE
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED FLOW DIRECTION
- 555 — PROPOSED CONTOUR
- 555 — EXISTING CONTOUR

PROPOSED CONDITIONS

DA A-1 | DA A-2 | DA A-3 | DA A-5 | DA A-4 | OFF A-1 → WATER QUALITY POND → POA A

TCEQ Water Quality Calculation Breakdown

	BMP	Drainage Area (ac.)	Impervious Cover (ac.)	Required Treated (lbs.)	Provided Treated (lbs.)
TxDOT ROW	Sand Filter	0.00	0.00	0	0.00
	Uncaptured	0.24	0.13	109	0.00
	Total Area	0.24	0.13	109	0.00
Private Lots	Sand Filter	11.63	2.94	2558	2863.00
	Uncaptured	2.83	0.23	197	0.00
	Total Area	14.45	3.17	2755	2863.00
Overall Project	**Sand Filter**	**11.63**	**2.94**	**2558**	**2863.00**
	Uncaptured	**3.06**	**0.35**	**305**	**0.00**
	Total Area	**14.69**	**3.29**	**2863**	**2863.00**

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - PROPOSED

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW P-2yr24hr 3.44 IN N	L (ft)	S (ft/ft)	Tt(min)	SHALLOW CONCENTRATED FLOW Grass Surface L (ft)	V (fps)	S (ft/ft)	Tt (min)	CHANNEL FLOW Channel Flow L (ft)	V (fps)	a (ft^2)	Pw (ft)	r	n	S (ft/ft)	Tt(min)	TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
DA A-1	70475.53	1.62	53973.09	76.6%	92.38	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.22	9.12	11.23	15.15
DA A-2	48687.87	1.12	39509.08	81.1%	93.48	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	3.67	6.35	7.80	10.50
DA A-3	360515.37	8.28	34494.78	9.6%	76.30	0.24	100.00	0.030	**11.70**	705.45	1.98	0.015	**5.95**	0.00	-			-		-	**0.00**	**17.65**	**11.50**	**25.38**	**36.50**	**54.94**
DA A-4	123225.37	2.83	9929.15	8.1%	78.69	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.93	12.61	16.60	23.94
DA A-5	26734.41	0.61	0.00	0.0%	74.00	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	1.06	2.45	3.31	4.92
OFF A-1	10244.45	0.24	5469.12	53.4%	88.21	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	0.68	1.26	1.57	2.16

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

*For DA A-2 the maximum allowed impervious cover for Lot 2 exceeds the total area of DA A-2 (feasible area of capture for this lot). To be conservative in the analysis the assumed impervious cover for DA A-2 is 100%

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	24.85	49.72	67.10	99.19

		Q_2	Q_{10}	Q_{25}	Q_{100}
EXISTING	POA	19.65	42.43	61.81	92.56
PROPOSED	POA	24.85	49.72	67.10	99.19

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BENCHMARKS

TBM #1 - BEING A SQUARE CUT IN THE TOP OF A CURB ON THE NORTH SIDE OF EAST CYPRESS CREEK ROAD, AND BEING +/- 86' NORTHEAST OF THE SOUTHWEST CORNER OF LOT 1, BLOCK "A" OF CEDAR PARK VILLAS SUBDIVISION.
ELEVATION = 893.45'.

TBM #2 - BEING A MAG NAIL IN A SERVICE POLE, IN THE WEST LINE OF SOUTH BELL BOULEVARD (AKA U.S. HIGHWAY 183), AND BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF SAID SOUTH BELL BOULEVARD WITH THE NORTH LINE OF EAST CYPRESS CREEK ROAD.
ELEVATION = 890.90'.

No.	REVISIONS	DATE	BY

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TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER 01/23/2020

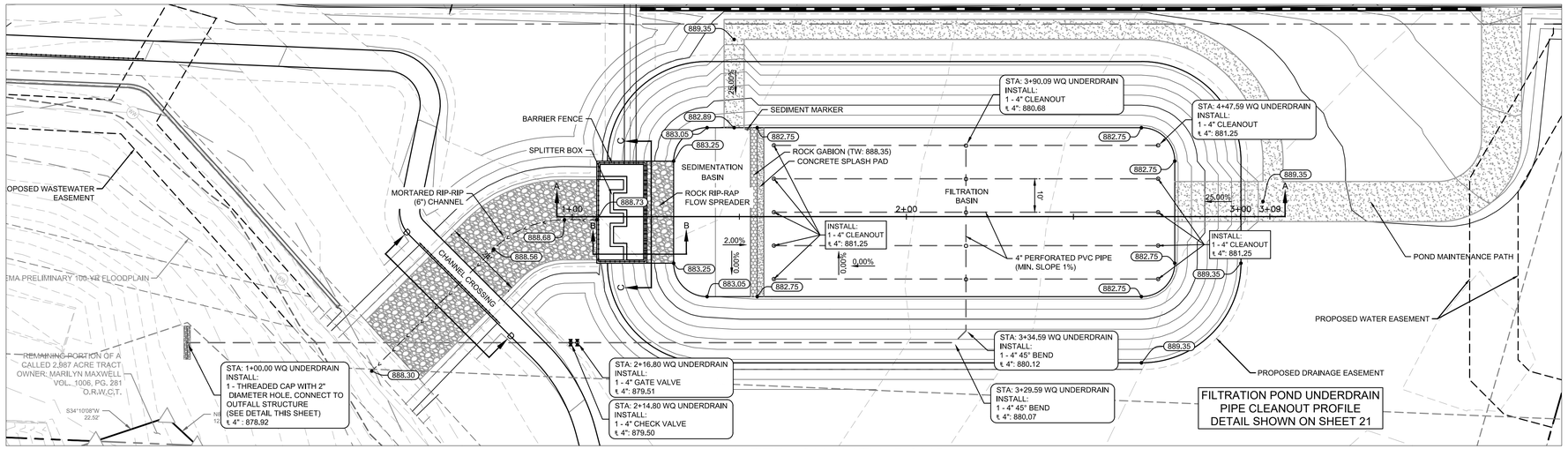
KHA PROJECT 069265601
DATE JANUARY 2020
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

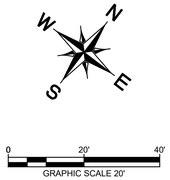
PROPOSED DRAINAGE AREA MAP

CSW BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

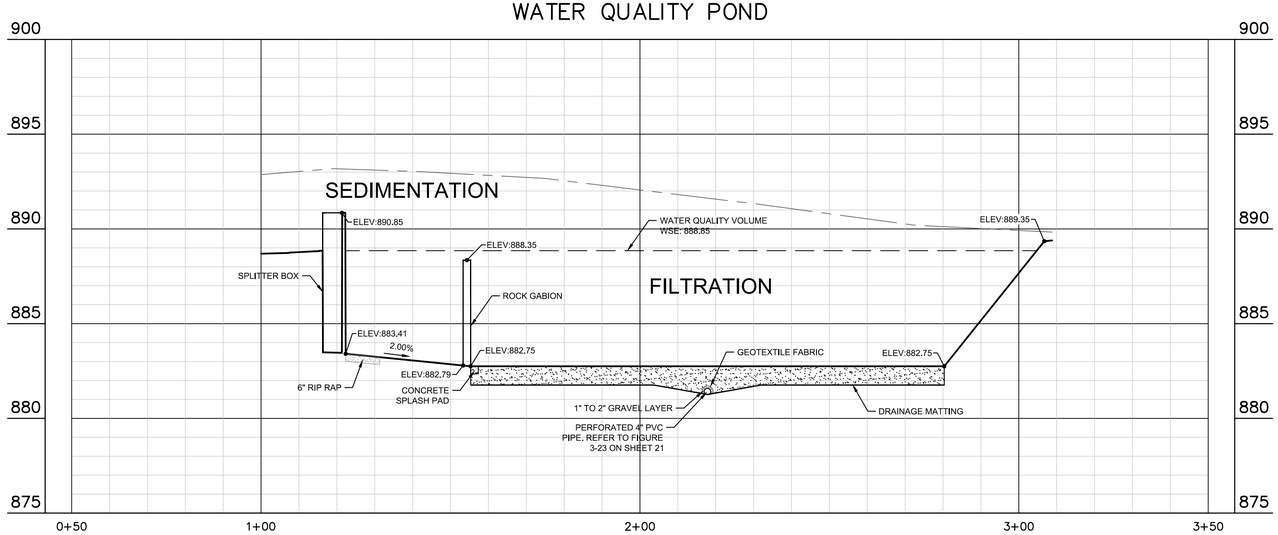
SHEET NUMBER
19 OF 26

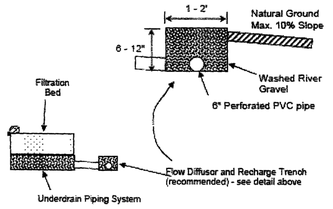
SD-19-00023





WATER QUALITY POND



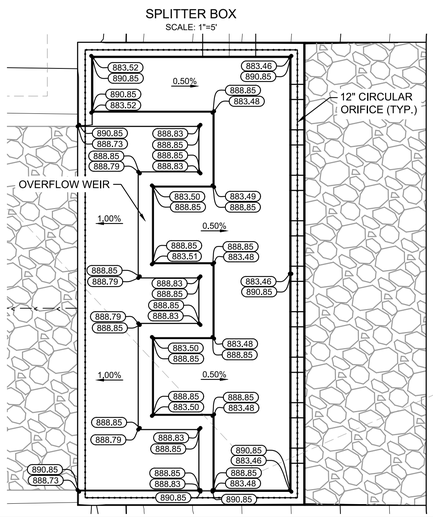


UNDERDRAIN OUTFALL DETAIL
SCALE: NTS

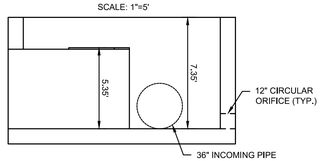
WATER QUALITY POND STAGE STORAGE TABLE					
CONTOUR ELEVATION (FT)	CONTOUR AREA (FT^2)	DEPTH (FT)	INCREMENTAL VOLUME (FT^3)	CUMULATIVE VOLUME (FT^3)	
882.75	6376.74	0.00	0.00	0.00	
883.00	7142.50	0.25	1,689.91	1,689.91	
884.00	9094.00	1.25	8,118.25	9,808.16	
885.00	10286.09	2.25	9,690.05	19,498.20	
886.00	11534.39	3.25	10,910.24	30,408.44	
887.00	12838.89	4.25	12,186.64	42,595.08	
887.50	13512.22	4.75	6,587.78	49,182.86	
888.00	14200.33	5.25	6,928.14	56,111.00	
888.85	15413.15	6.10	12,585.73	68,696.72	WQV
889.00	15632.78	6.25	2,328.44	71,025.17	
889.35	16152.17	6.60	5,562.37	76,587.54	

OUTLET STRUCTURE

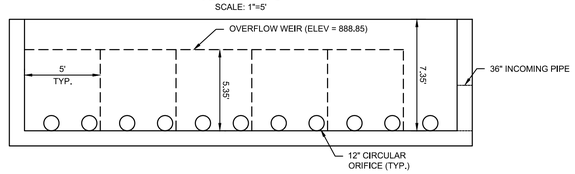
SPLITTER BOX
SCALE: 1"=5'



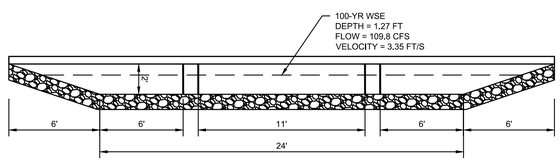
SECTION B-B
SCALE: 1"=5'



SECTION C-C
SCALE: 1"=5'



SECTION D-D
SCALE: 1"=5'



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01/23/2020

KHA PROJECT 069265601
DATE JANUARY 2020
SCALE: AS SHOWN
DESIGNED BY: BMW | TJO
DRAWN BY: BMW | TJO
CHECKED BY: JMW | JMW

POND PLAN

CSW
BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
20 OF 26

SD-19-00023

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bell Boulevard Commercial
Date Prepared: 1/23/2020

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

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

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	14.69	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	3.29	acres
Total post-development impervious cover fraction * =	0.22	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	2863	lbs.

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

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

DRAINAGE BASIN TREATED BY SAND FILTER (INCLUDES DA A-1, DA A-2, DA A-3 & DA A-5)

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	11.63	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.94	acres
Post-development impervious fraction within drainage basin/outfall area =	0.25	
$L_{M\ THIS\ BASIN}$ =	2558	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter
Removal efficiency = 89 percent

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

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

where:

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

A_C =	11.63	acres
A_I =	2.94	acres
A_P =	8.69	acres
L_R =	3031	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 2863 lbs.

F = 0.94

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

Rainfall Depth =	2.40	inches
Post Development Runoff Coefficient =	0.23	
On-site Water Quality Volume =	23591	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	4718	
Total Capture Volume (required water quality volume(s) x 1.20) =	28309	cubic feet

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

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	Enter determined permeability rate or assumed value of 0.1
Irrigation area =	NA	square feet	
	NA	acres	

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

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	28309	cubic feet	
Minimum filter basin area =	1311	square feet	
Maximum sedimentation basin area =	11795	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	2949	square feet	For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	28309	cubic feet	
Minimum filter basin area =	2359	square feet	
Maximum sedimentation basin area =	9436	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	590	square feet	For maximum water depth of 8 feet

DRAINAGE BASIN UNCAPTURED (INCLUDES DA A-4 & OFF A-1)

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	3.06	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.35	acres
Post-development impervious fraction within drainage basin/outfall area =	0.11	
$L_{M\ THIS\ BASIN}$ =	305	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Uncaptured
Removal efficiency = 0 percent

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

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

where:

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

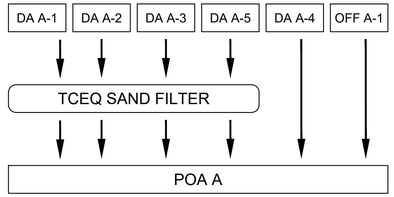
A_C =	3.06	acres
A_I =	0.35	acres
A_P =	2.71	acres
L_R =	0	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 0 lbs.

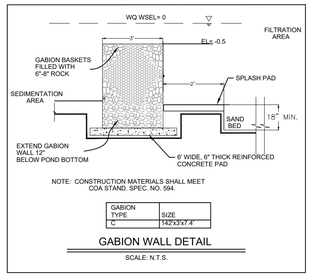
F = N/A

PROPOSED CONDITIONS



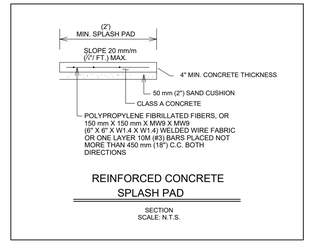
TCEQ Water Quality Calculation Breakdown

	BMP	Drainage Area (ac.)	Impervious Cover (ac.)	Required Treated (lbs.)	Provided Treated (lbs.)
TxDOT ROW	Sand Filter	0.00	0.00	0	0.00
	Uncaptured	0.24	0.13	109	0.00
	Total Area	0.24	0.13	109	0.00
Private Lots	Sand Filter	11.63	2.94	2558	2863.00
	Uncaptured	2.83	0.23	197	0.00
	Total Area	14.45	3.17	2755	2863.00
Overall Project	**Sand Filter**	**11.63**	**2.94**	**2558**	**2863.00**
	Uncaptured	**3.06**	**0.35**	**305**	**0.00**
	Total Area	**14.69**	**3.29**	**2863**	**2863.00**



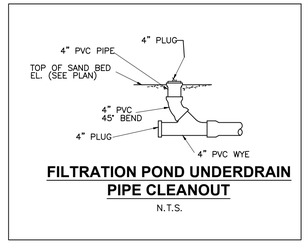
GABION WALL DETAIL

SCALE: N.T.S.



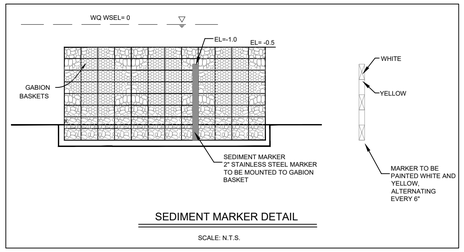
REINFORCED CONCRETE SPLASH PAD

SECTION
SCALE: N.T.S.



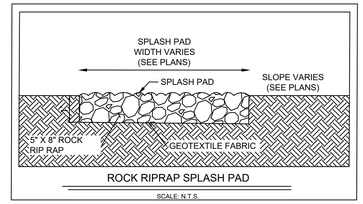
FILTRATION POND UNDERDRAIN PIPE CLEANOUT

N.T.S.



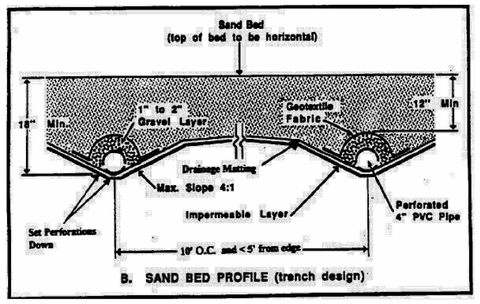
SEDIMENT MARKER DETAIL

SCALE: N.T.S.



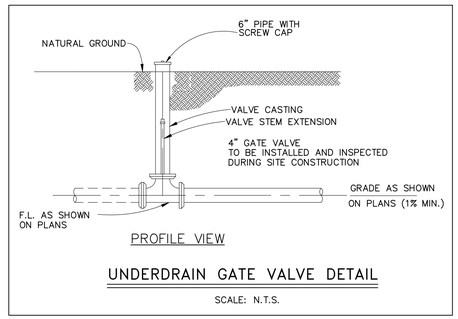
ROCK RIPRAP SPLASH PAD

SCALE: N.T.S.



B. SAND BED PROFILE (trench design)

Figure 3-23 Schematic of Sand Bed Profile



PROFILE VIEW

UNDERDRAIN GATE VALVE DETAIL

SCALE: N.T.S.

WATER QUALITY POND

OVERFLOW WEIR DESIGN

Provided Overflow Elevation	=	888.85
Top of Box Elevation	=	890.85

Using the weir flow equation:
Q = C*L*H^(3/2)

Q = 100 year developed flow into splitter box (cfs)		109.8
C = Weir coefficient		3.00
L = Width of weir (feet)		49.0
H = Depth of flow (feet)		0.82
Max. WSE_{100} in Box	=	889.67
Splitter Box Freeboard (feet)	=	1.18

POND DRAW DOWN CALCULATIONS

Minimum Drawdown Time = 48 hours =	172,800	seconds
Pond volume to be removed =	68,697	cf
Volume removed per second =	0.40	cfs

Orifice equation is "Q = 0.6*A*(2*g*h)^.5
A = area of orifice g= 32.2

Water Quality Elevation =	888.85	
Underdrain Outfall Elevation =	878.67	
h = orifice head =	10.176	
A = Q/ (0.6* (2*g*h)^.5) = p*r^2 =	0.026	sf
r =	0.091	ft
r =	1.09	in
d =	2.2	in Calculated
d=	2.0	in Provided

25 YEAR VELOCITY AFTER LEVEL SPREADER

MANNING'S EQUATION: $Q = \left(\frac{1.49}{n}\right) A R^{2/3} \sqrt{S}$

WHERE: Q = ORIFICE FLOW (CFS)
n = MANNING'S ROUGHNESS COEFFICIENT
A= AREA OF CHANNEL (FT^2)
R= HYDRAULIC RADIUS (FT)
S = SLOPE (FT/FT)
d = NORMAL DETPH (FT)

Q =	81.41	CFS
n =	0.069	(6" RIP-RAP)
w =	31	FT
A =	w x d	FT^2
R =	$\frac{w \times d}{w + 2d}$	FT
S =	0.02	

CALCULATING FOR d = 0.96 FT

$V = \left(\frac{Q}{A}\right)$

V = 1.739 FT/S²

SPLITTER BOX ORIFICE CALCULATIONS TO SEDIMENTATION BASIN

25-YR PEAK FLOW RATE = 81.41 CFS
ORIFICE FLOWLINE ELEVATION = 883.46 FT (MSL)
WATER QUALITY ELEVATION = 888.85 FT (MSL)

ORIFICE EQUATION: $Q = N\ C\ A\sqrt{2GH}$

WHERE: Q = ORIFICE FLOW (CFS)
C = ORIFICE COEFFICIENT (0.60)
A= AREA OF ORIFICE (FT)
G = GRAVITATIONAL CONSTANT (32.2 FT/S²)
H = HEAD ON ORIFICE FROM CENTERLINE (FT)
N = NUMBER OF ORIFICES

H = 4.89 FT

N =	9.00	
A =	1.00	FT
C =	0.60	
G =	32.20	FT/SEC2
Q (PROVIDED) =	95.83	

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

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

TBM #1 - BEING A SQUARE CUT IN THE TOP OF A CURB ON THE NORTH SIDE OF EAST CYPRESS CREEK ROAD, AND BEING +/- 86' NORTHEAST OF THE SOUTHWEST CORNER OF LOT 1, BLOCK "A" OF CEDAR PARK VILLAS SUBDIVISION.
ELEVATION = 893.45'.

TBM #2 - BEING A MAG NAIL IN A SERVICE POLE, IN THE WEST LINE OF SOUTH BELL BOULEVARD (AKA U.S. HIGHWAY 183), AND BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF SAID SOUTH BELL BOULEVARD WITH THE NORTH LINE OF EAST CYPRESS CREEK ROAD.
ELEVATION = 890.90'.

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER 01/23/2020

KHA PROJECT	069265601
DATE	JANUARY 2020
SCALE:	AS SHOWN
DESIGNED BY:	BMW
DRAWN BY:	TJO
CHECKED BY:	JMW

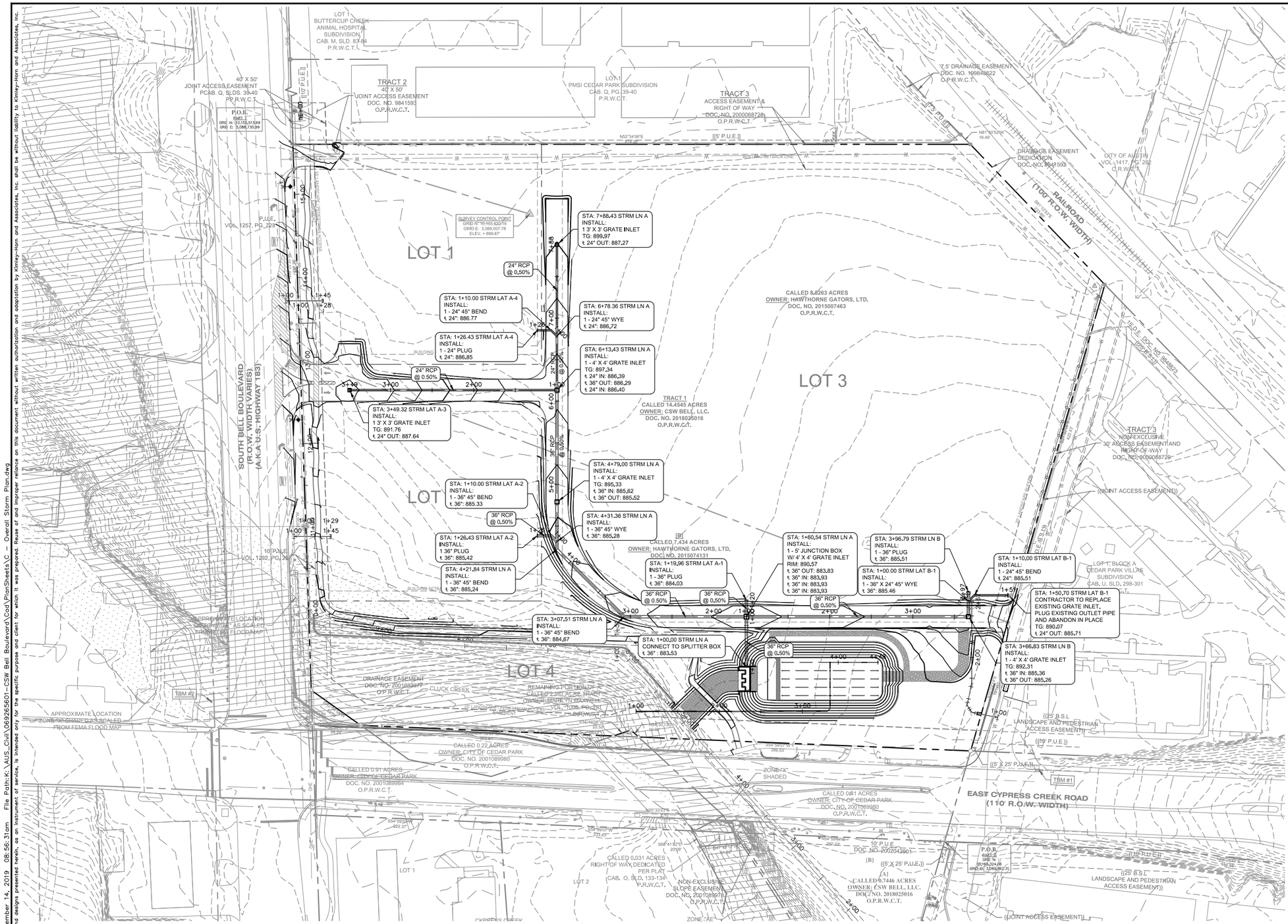
CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

WATER QUALITY CALCULATIONS AND DETAILS

SHEET NUMBER
21 OF 26

SD-19-00023



LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- WASTEWATER FLOW DIRECTION
- PROPOSED FIRE HYDRANT
- PROPOSED TAPPING SLEEVE & VALVE
- PROPOSED STORM DRAIN LINE
- PROPOSED STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

ADD BENCHMARKS HERE

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

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER
11/13/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

OVERALL STORM PLAN

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
21 OF 25

SD-19-00023

CIVIL SITE DEVELOPMENT PLANS
FOR
WASH AND ROLL EXPRESS
CAR WASH
CITY OF CEDAR PARK, WILLIAMSON COUNTY, TEXAS

NOTES:

NO PORTION OF THIS TRACT IS CURRENTLY WITHIN THE DESIGNTATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) #48491C0464F FOR WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS DATED DECEMBER 20, 2019.

CONTRACTOR TO NOTIFY DIGTESS PRIOR TO COMMENCING CONSTRUCTION AT 1-800-DIGTESS.

ZONING: GB (GENERAL BUSINESS)

THIS SITE IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED IN APPROVING THESE PLANS, THE CITY OF CEDAR PARK MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

PROJECT DESCRIPTION:

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A 3,800 SQFT DRIVE-THRU CAR WASH FACILITY, WITH COVERED PARKING FOR VACUUMS, DRIVEWAYS, UTILITY SERVICES, AND DRAINAGE INFRASTRUCTURE

SITE INFORMATION

ADDRESS: 710 S. BELL BLVD. CEDAR PARK, TEXAS 78613

ACREAGE: 1.75 AC TOTAL

IMPERVIOUS COVER: ~~41742.6 SF~~ 46489.6 SF

LEGAL DESCRIPTION: S12738 - CLUCK CREEK COMMERCIAL, BLOCK A, LOT 1, ACRES 1.7633

LAND USE SUMMARY:

ZONING: GB

EDWARDS AQUIFER PROGRAM ID #11001813

TABS202300522

ENGINEER:

GREEN CIVIL DESIGN, LLC
KERRI K. PENA, PE
301 DENALI PASS, STE 301
CEDAR PARK, TEXAS 78613
PHONE: 512-640-6590

OWNER:

1900 LAKELINE, LLC
1900 S LAKELINE BLVD.
CEDAR PARK, TEXAS 78613
PHONE: 806-535-2266

LIST OF CONTACTS:

SANITARY SEWER
CITY OF CEDAR PARK
ENGINEERING DEPT.
450 CYPRESS CREEK ROAD, BLDG. I
CEDAR PARK, TEXAS 78613
PH. (512) 401-5000

CITY OF CEDAR PARK
BUILDING INSPECTIONS DEPARTMENT
450 CYPRESS CREEK ROAD
CEDAR PARK, TX 78613
PH. (512) 401-5100
PERMITS@CEDARPARKTEXAS.GOV

WATER
CITY OF CEDAR PARK
ENGINEERING DEPT.
450 CYPRESS CREEK ROAD, BLDG. I
CEDAR PARK, TEXAS 78613
PH. (512) 401-5000

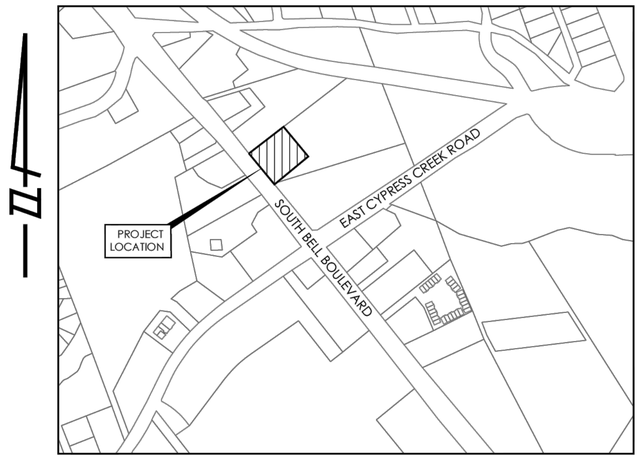
ELECTRIC
PEDERNALES ELECTRIC COOP.
1949 W. WHITESTONE BLVD.
CEDAR PARK, TEXAS 78630
PH. (512) 813-4589
CONTACT: CYNTHIA LEHOSKI

STORM SEWER
CITY OF CEDAR PARK
ENGINEERING DEPT.
450 CYPRESS CREEK ROAD, BLDG. I
CEDAR PARK, TEXAS 78613
PH. (512) 401-5000

CITY OF CEDAR PARK
FIRE DEPARTMENT
LIEUTENANT PAT FLYNN
450 CYPRESS CREEK ROAD
CEDAR PARK, TX 78613
PH. (512) 401-5200
PAT.FLYNN@CEDARPARKTEXAS.GOV

DEVELOPER
CSW BELL LLC
1703 W. 5TH ST, STE 850
AUSTIN, TX 78703

SURVEYOR
4WARD LAND SURVEYING
PO BOX 90876, AUSTIN, TX 78709
(512) - 537-2384



VICINITY MAP
N.T.S.

CEDAR PARK
Reviewed for Code Compliance
Signature required from all Departments

Planning_____Date_____

Engineering Services_____Date_____

Industrial Pretreatment_____Date_____

Fire Prevention_____Date_____

Landscape Planner_____Date_____

Addressing_____Date_____

Site Development Permit Number _____

TCEQ TRACE NO. - 582EA000558773

Sheet List Table	
SHEET NUMBER	SHEET TITLE
1	COVER
2	FINAL PLAT 1 OF 2
3	FINAL PLAT 2 OF 2
4	GENERAL NOTES
5	EXISTING CONDITIONS
6	EROSION AND SEDIMENTATION CONTROL PLAN
7	OVERALL SITE PLAN
8	EXISTING DRAINAGE AREA MAP
9	PROPOSED DRAINAGE PLAN
10	SITE DRAINAGE PLAN
11	SITE GRADING PLAN
12	UTILITY PLAN
13	FIRE PROTECTION PLAN
14	EROSION CONTROL DETAILS
15	DRAINAGE DETAILS
16	PAVING DETAILS
17	UTILITY DETAILS
18	LANDSCAPE PLAN 1 OF 2
19	LANDSCAPE PLAN 2 OF 2
20	ARCHITECTURAL ELEVATIONS
21	ARCHITECTURAL ELEVATIONS 2
22	SITE LUMENS PLAN
23	BUILDING SECTIONAL PLANS
24-27	ENHANCED LIGHTING SPECS

NOTE:
THE DEVELOPER ACKOWLEDGES THAT THE CITY WILL NOT ISSUE A CERTIFICATE OF OCCUPANCY FOR THIS DEVELOPMENT UNTIL ALL DRIVE AISLE AND ACCESS IMPROVEMENTS OF THE PARENT TRACT ARE COMPLETED AND ACCEPTED BY THE CITY.

PARENT TRACT IS PERMIT SD-19-00023. TCO CANNOT BE ISSUED UNTIL SD-19-00023 IS COMPLETE.

STATE OF TEXAS
BRADLEY G. LANE
130741
LICENSED PROFESSIONAL ENGINEER
5/23/2025

THE SEAL APPEARING ABOVE ON THIS DOCUMENT PERTAINS ONLY TO SITE DEVELOPMENT REVISION NO. 1 AND WAS AUTHORIZED BY BRADLEY G. LANE, P.E. NO. 130741 ON 5/23/2025

SD-21-00045

City of Cedar Park
Development Services Department
SD-21-00045
APPROVED
09/28/2023

Green Civil Design GCD
Engineering & Consulting
301 DENALI PASS, SUITE 3,
CEDAR PARK, TX 78613
(512) 640-6590
Texas Registered Engineering Firm F-17563

STATE OF TEXAS
KERRI K. PENA
90255
LICENSED PROFESSIONAL ENGINEER
7/17/2023

Marc Dickey Collaborative
6410 wilbur drive austin texas 512.297.8651

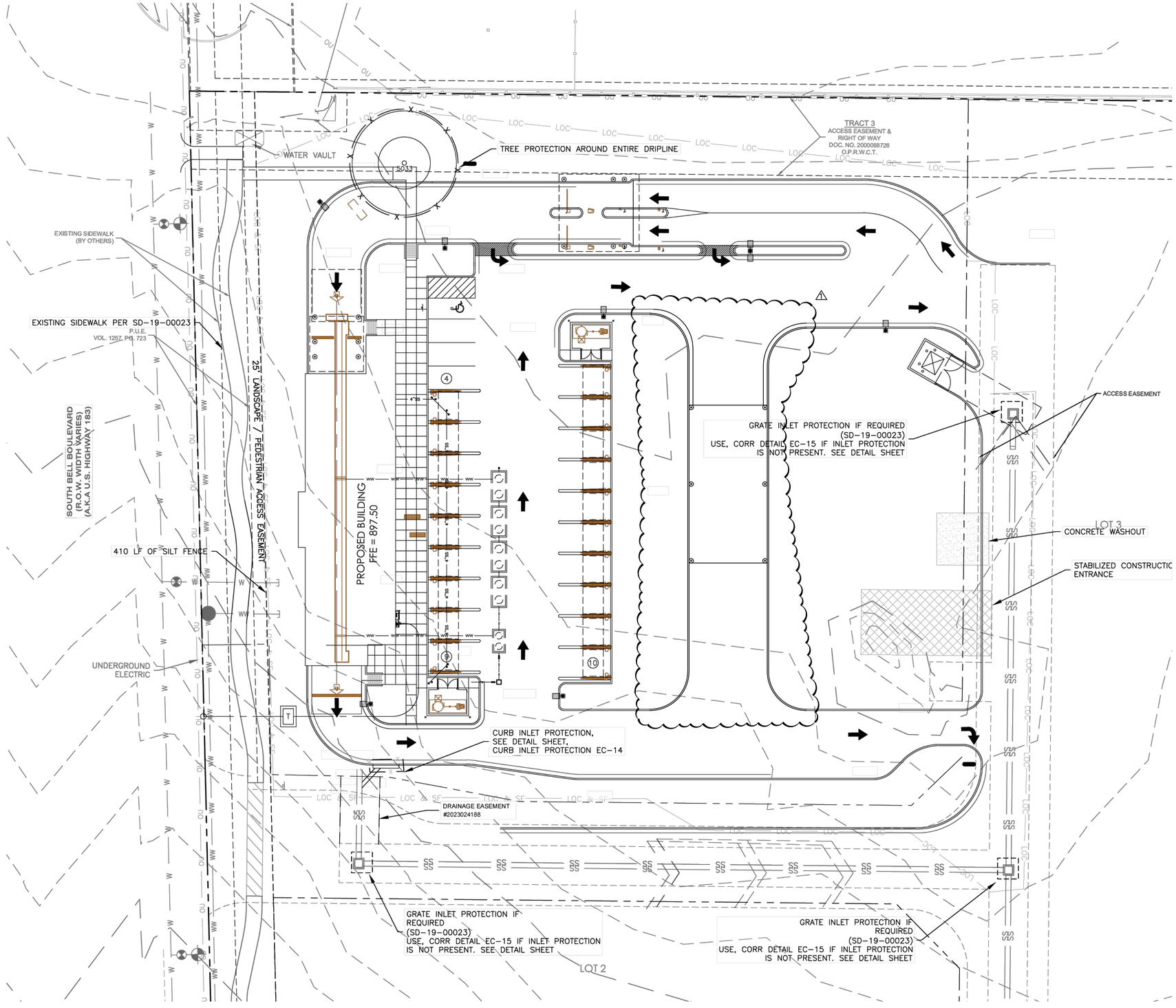
WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
COVER

REVISIONS/ISSUES:
REVISION 1
5/23/2025
DRIVE AISLE AND CANOPY ADDITION

DRAWN BY:

JOB NO.
XXXX

SHEET NO.
1 OF 27



SCALE: 1"=20'
GRAPHIC SCALE IN FEET
0 10 20 30 40

LEGEND

- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- LIMITS OF CONSTRUCTION
- PROPOSED SILT FENCE/ LIMITS OF CONTRUCTION
- CURB INLET PROTECDTION – DETAIL EC-14
- EXISTING GRATE INLET PROTECTION
- CONCRETE WASHOUT
- STABILIZED CONSTRUCTION ENTRANCE
- TREE PROTECTION

STATE OF TEXAS
BRADLEY G. LANE
130741
LICENSED
PROFESSIONAL ENGINEER
5/23/2025

THE SEAL APPEARING ABOVE ON THIS DOCUMENT PERTAINS ONLY TO SITE DEVELOPMENT REVISION NO. 1 AND WAS AUTHORIZED BY BRADLEY G. LANE, P.E. NO. 130741 ON5/23/2025

NOTE:

1. ALL DISTURBED AREAS SHALL BE RE-VEGETATED TO MEET THE REQUIREMENTS OF THE CITY OF CEDAR PARK'S ORDINANCES.
2. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.

SD-21-00045

City of Cedar Park
Development Services
Department
SD-21-00045
APPROVED
09/28/2023

Green Civil Design GCD
Engineering & Consulting
301 DENALI PASS, SUITE 3,
CEDAR PARK, TX 78613
(512) 640-6590
Texas Registered Engineering Firm F-17563

STATE OF TEXAS
KERRI K. PENA
90255
LICENSED
PROFESSIONAL ENGINEER
7/17/2023

Marc Dickey Collaborative
6410 wilbur drive austin texas 512.297.8651

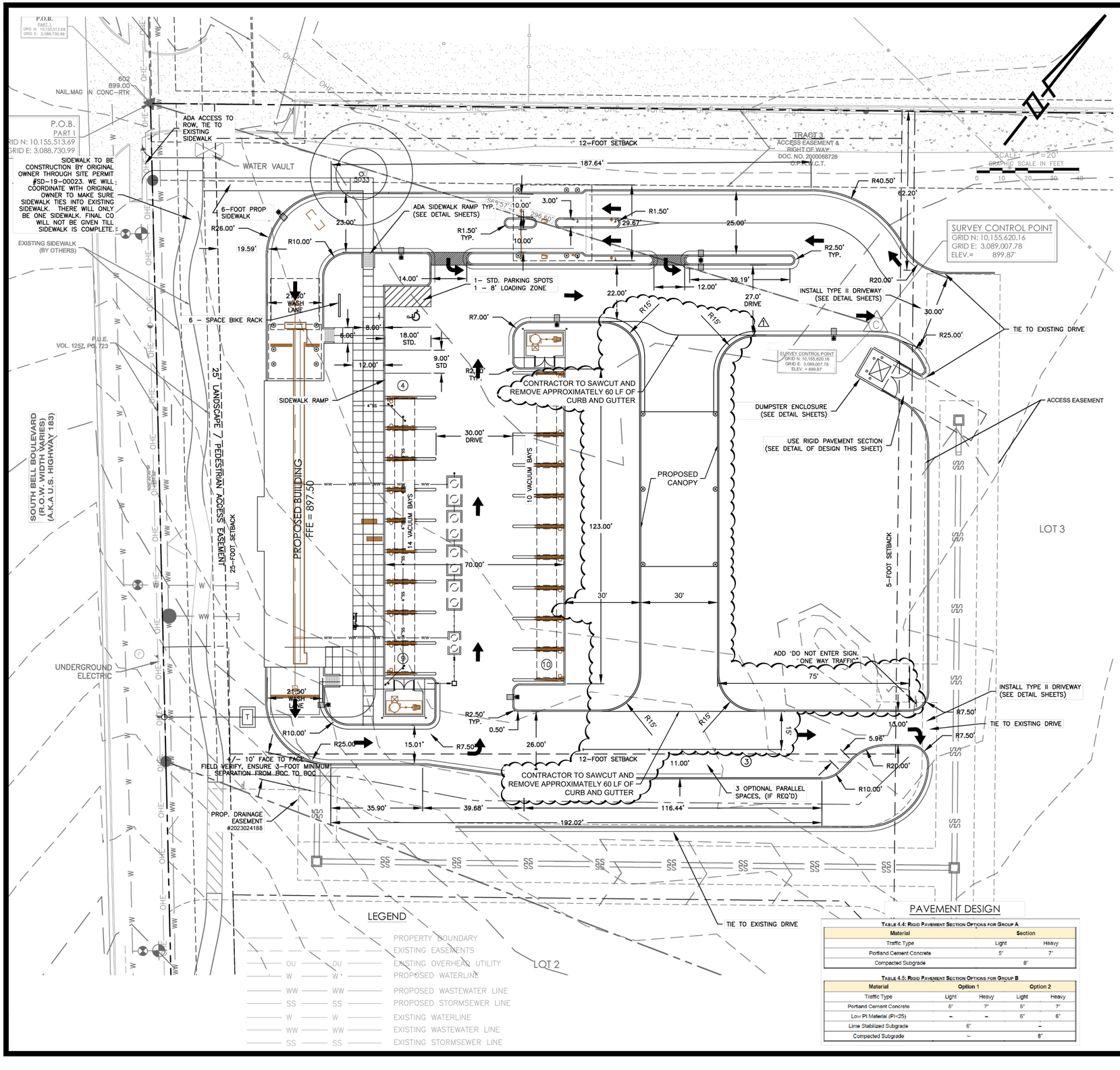
WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
EROSION AND SEDIMENTATION CONTROL PLAN

REVISIONS/ISSUES:
REVISION 1
5/23/2025
DRIVE AISLE AND CANOPY ADDITION

DRAWN BY:

JOB NO.
XXXX

SHEET NO.
6 OF 27



PAVEMENT DESIGN

TABLE 4.4: RIGID PAVEMENT SECTION OPTIONS FOR GROUP A

Material	Section	
Traffic Type	Light	Heavy
Portland Cement Concrete	5"	7"
Compacted Subgrade	8"	

TABLE 4.5: RIGID PAVEMENT SECTION OPTIONS FOR GROUP B

Material	Option 1		Option 2	
Traffic Type	Light	Heavy	Light	Heavy
Portland Cement Concrete	5"	7"	5"	7"
Low PI Material (PI<25)	–	–	6"	6"
Lime Stabilized Subgrade	6"		–	
Compacted Subgrade	–		8"	

NOTES:

1. TREES AND TOPOGRAPHY BASED UPON SURVEY BY CHAPPARAL PROFESSIONAL LAND SURVEYING, INC. ON JUNE 18, 2015. NO WARRANTY IS EXPRESSED OR IMPLIED AS TO THEIR ACCURACY.
2. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14' VERTICAL CLEARANCE.
3. ESTABLISH FIRE ZONES AS SHOWN ON SITE BY PAINTING CURB RED. STENCIL THE WORDS, "FIRE ZONE/TOW–AWAY ZONE", WINH ITE LETTER SAT LEAST 3 INCHES HIGH AT 35–FOOT INTERVALS ALONG THE CURB. ALSO, SIGNS SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE. ALTERNATE MARKING OF THE FIRE LANES MAY BE APPROVED BY THE FIRE CHIEF PROVIDED THE FIRE LANES ARE CLEARLY IDENTIFIED AT BOTH ENDS AND AT INTERVALS NOT TO EXCEED 35 FEET. SEC. 901.4.2
4. ALL PARKING SPACES SHALL HAVE MINIMUM 7'–0" VERTICAL CLEARANCE.
5. WARNING SIGNS ARE REQUIRED TO BE PLACED UNDER THE OVERHEAD ELECTRIC LINES TO MAKE ALL PERSONNEL AWARE OF THE ELECTRIC HAZARD.
6. EVERY HANDICAP ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY A SIGN CENTERED 5 FEET ABOVE THE PARKING SURFACE, AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED, OR EQUIVALENT LANGUAGE. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE AND SHALL MEET THE CRITERIA SET FORTH IN UBC, 3108(C) AND ANSI A1171–1986–4.6.2.
7. CONTRACTOR TO COORDINATE WITH PROJECT ARBORIST TO TRIM TREES TO ENSURE VISIBILITY NEAR PARKING AREAS.
8. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. CAUTION: DO NOT PLACE THE STAGING AREA IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES.
10. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
11. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
12. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
13. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN.
14. ACCESSIBLE ROUTES MUST HAVE A CROSS–SLOPE NO GREATER THAN 1:50.
15. GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT.
16. ALL LANDSCAPED AREAS ARE TO BE PROTECTED BY SIX–INCH WHEEL CURBS, WHEELSTOPS, OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7.
17. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A' 6CONCRETE CURB ARE REQUIRED. IF A STANDA'RCDU R6B AND GUTTER ARE NOT PROVIDED FOR ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7'P, ROTECTION OF LANDSCAPE ARE'AS
18. RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A SEPARATE BUILDING PERMIT. [IBC CODE 105.2]
19. SEE ARCHITECTURAL PLANS FOR CANOPY, BUILDING AND ENCLOSURE DESIGN.

LIGHT NOTE:

1. LIGHT SOURCES SHALL BE COMPLETELY CONCEALED WITHIN OPAQUE HOUSINGS AND SHALL NOT BE VISIBLE FROM ADJACENT STREETS OR PROPERTIES. ALL EXTERIOR LIGHTING FIXTURES SHALL BE FULL CUT–OFF TYPE FIXTURES. LIGHTING FIXTURES SHALL BE NO MORE THAN TWENTY–FIVE (20) FEET IN HEIGHT AS MEASURED FROM ADJACENT, FINISHED GRADE.

PARKING TABLE:

PARKING REQ. FOR CARWASH	(1 SPACE FOR 200SF of GFA)
VACUUMS REQ. FOR CARWASH	(1SPACE FOR EVERY VACUUM)
REQUIRED PARKING:	
CARWASH: 330 SQFT /200 SF	= 2 SPACES
VACUUMS: 1 VAC/SPACE	= 19 SPACES

PROPOSED PARKING:
STANDARD PARKING: 3 SPACES
ADA PARKING: 1 SPACE
VACUUM PARKING: 19 SPACES
SUBTOTAL PROPOSED PARKING: 23 SPACES

BICYCLE PARKING PROPOSED: 3 SPACES

3 - PARALLEL SPACES (IF REQUIRED)

STATE OF TEXAS
BRADLEY G. LANE
130741
LICENSED
PROFESSIONAL ENGINEER
5/23/2025

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City of Cedar Park
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301 DENALI PASS, SUITE 3,
CEDAR PARK, TX 78613
(512) 640-6590
Texas Registered Engineering Firm F-17563

STATE OF TEXAS
KERRI K. PENA
90255
LICENSED
PROFESSIONAL ENGINEER
7/17/2023

Marc Dickey Collaborative
6410 wilbur drive austin texas 512.297.8851

WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
OVERALL SITE PLAN

REVISIONS/ISSUES:
REVISION 1
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DRIVE AISLE AND CANOPY ADDITION

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JOB NO.
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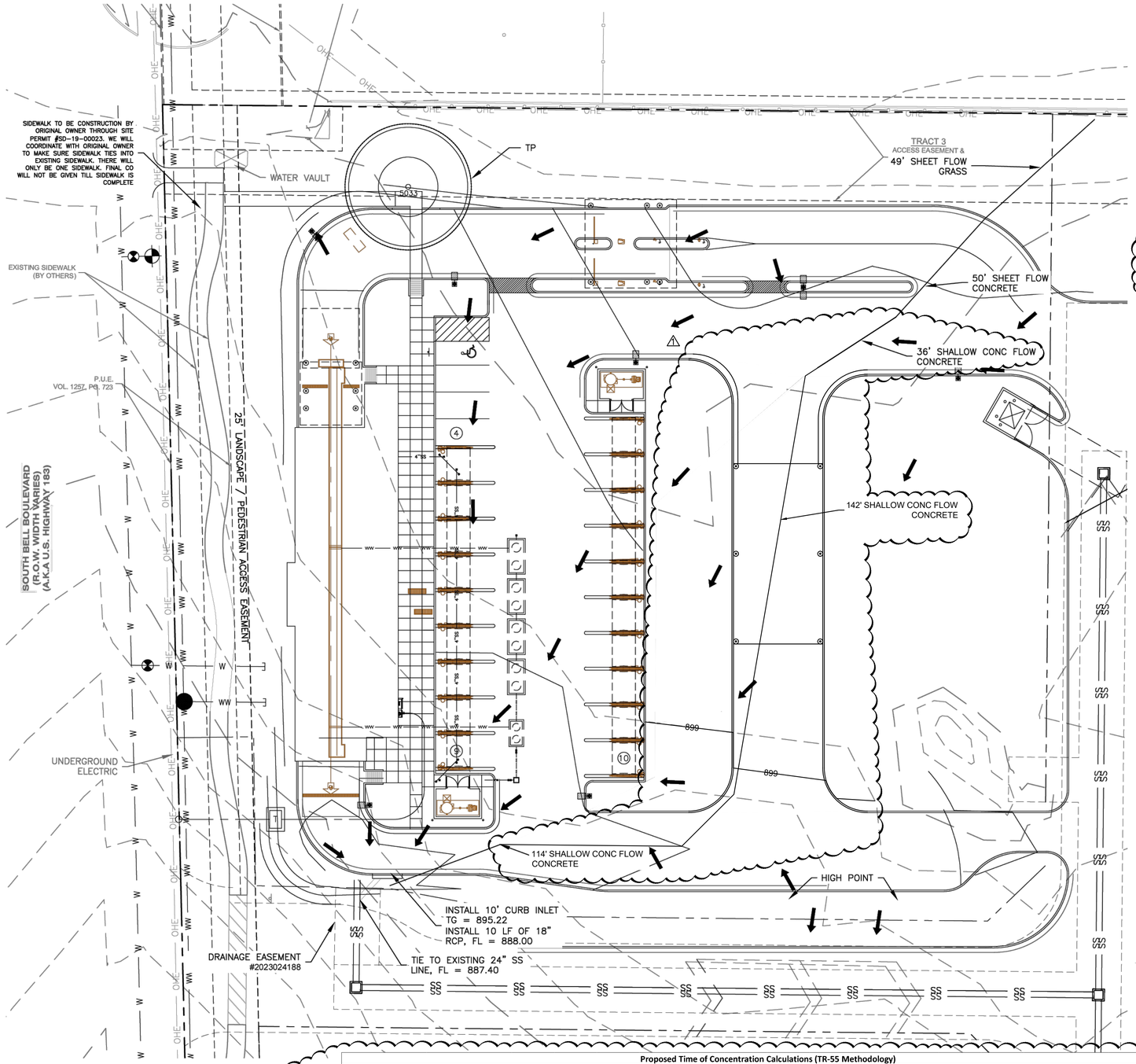

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SCALE: 1"=20'
GRAPHIC SCALE IN FEET
0 10 20 30 40

NOTE:

1. ENGINEER HAS REVIEWED PLANS PERTAINING TO THE DESIGN OF THE EXISTING DETENTION FACILITIES AND AGREES WITH THEIR DESIGN. PROPOSED DEVELOPMENT DOES NOT ADVERSELY AFFECT ANY DOWNSTREAM PROPERTIES

LEGEND

- PROPERTY BOUNDARY
- 900 EXISTING MAJOR CONTOURS
- 901 EXISTING MINOR CONTOURS
- 900 EXISTING MAJOR CONTOURS
- 901 EXISTING MINOR CONTOURS
- PROPOSED STORMSEWER LINE
- 4' X 4' AREA INLET
- DRAINAGE AREA
- X-X DRAINAGE AREA LABEL
- DRAINAGE ARROW
- W W PROPOSED WATER LINE
- WW WW PROPOSED WASTEWATER LINE
- SS SS EXISTING STORMSEWER LINE
- WW WW EXISTING WASTEWATER LINE
- W W EXISTING WATER LINE

EXISTNG CSW DRAINAGE CALCULATIONS

CSW BELL BOULEVARD

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (AC)	IMPERVIOUS COVER (%)	WEIGHTED RUNOFF COEFFICIENT	TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
DA A-1	76055.12	*1.75*	1.50	85.67%	*0.90*	*5.00*	**9.06**	**13.48**	**15.91**	**19.74**
DA A-2*	48687.87	*1.12*	1.12	100.00%	*0.97*	*5.00*	**6.24**	**9.29**	**10.96**	**13.60**
DA A-3	363226.20	*8.34*	6.01	72.08%	*0.84*	*5.00*	**40.13**	**59.73**	**70.49**	**87.45**
DA A-4	106127.15	*2.44*	0.00	0.00%	*0.49*	*5.00*	**6.87**	**10.23**	**12.07**	**14.98**
DA A-5	35542.21	*0.82*	0.07	8.79%	*0.53*	*5.00*	**2.50**	**3.72**	**4.39**	**5.45**
OFF A-1	10244.45	*0.24*	0.127	54.02%	*0.75*	*5.00*	**1.01**	**1.51**	**1.78**	**2.21**
POINT OF ANALYSIS										

**The minimum Tc is 5 minutes for the Rational Method.
*For DA A-2 the maximum allowed impervious cover for Lot 2 exceeds the total area of DA A-2 (feasible area of capture for this lot). To be conservative in the analysis the assumed impervious cover for DA A-2 is 100%

Proposed Time of Concentration Calculations (TR-55 Methodology)

	Sheet Flow								Shallow Concentrated									
ID	P_2	n1	L1	S1	n2	L2	S2	Tsf	Surface 1	L1	S1	Surface 2	L2	S2	Surface 3	L3	S3	Tsc	Tc
[-]	[in]	[-]	[ft]	[%]	[-]	[ft]	[%]	[hr]	[-]	[ft]	[%]	[-]	[ft]	[%]	[-]	[ft]	[%]	[hr]	[min]
A-1	4.06	0.3	49.0	1.00	0.02	50.0	1	0.210	Paved	36.0	1.00	Paved	142.0	1.00	Paved	114.0	1.00	0.040	15.0

Drainage Area	Area	Inputs/Info				Impervious Cover	Composite "C"				Tc	Intensity				Design Discharge, Q			
	Area (acres)	All Areas in Acres: Area Asph	Area Conc	Area Grass	% IC		2 yr	10 yr	25 yr	100 yr	(min)	2 yr (in/hr)	10 yr (in/hr)	25 yr (in/hr)	100 yr (in/hr)	2 yr (cfs)	10 yr (cfs)	25 yr (cfs)	100 yr (cfs)
DEVELOPED																			
A-1	1.750	0.00	1.07	0.68	60.99%	61%concrete,39%Grass Cover, Flat slope	0.57	0.64	0.69	0.77	15.00	4.26	6.44	7.92	10.34	4.26	7.25	9.55	13.95

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STATE OF TEXAS
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90255
LICENSED PROFESSIONAL ENGINEER
7/17/2023

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WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
DRAINAGE PLAN

REVISIONS/ISSUES:
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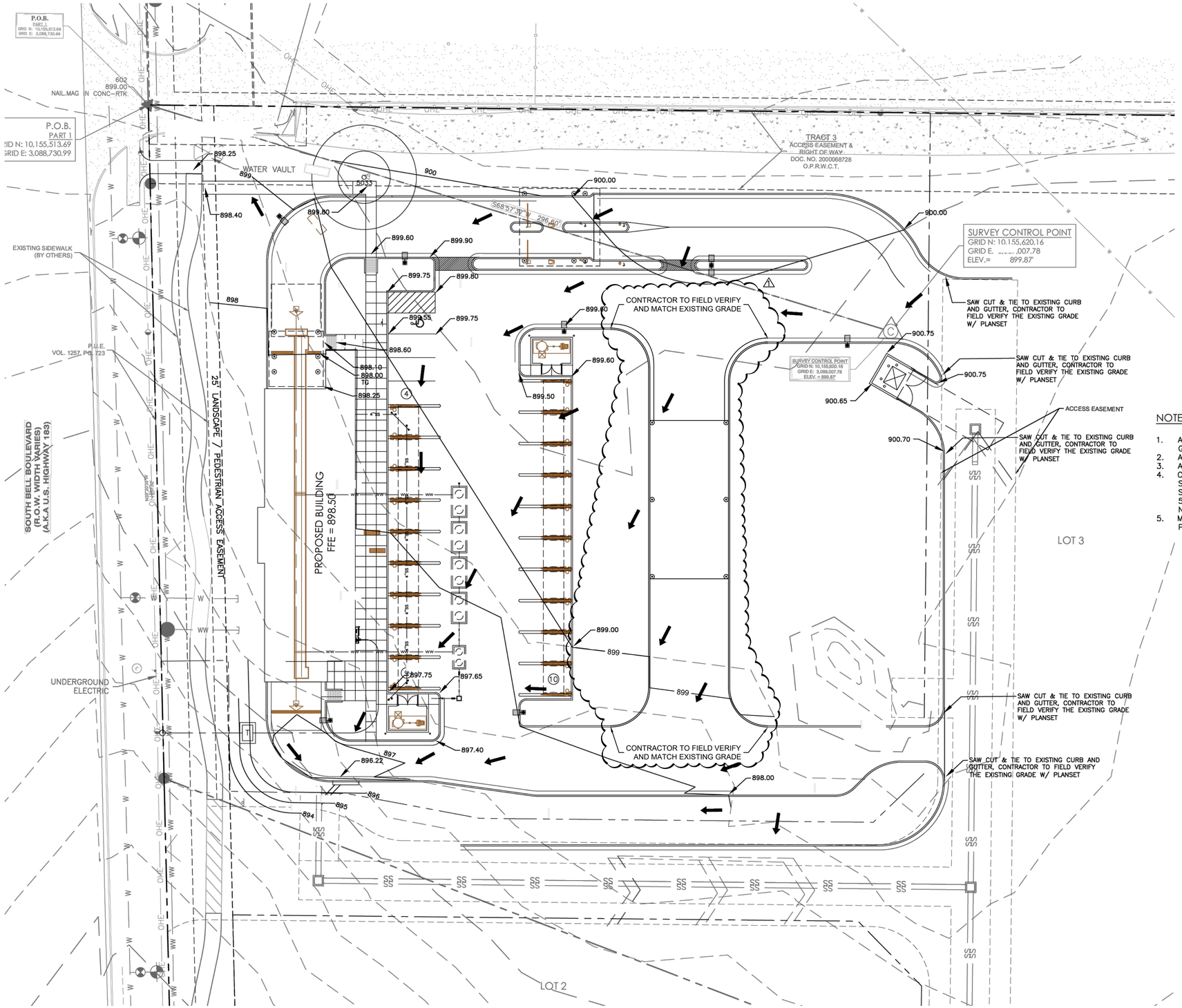

SCALE: 1"=20'
GRAPHIC SCALE IN FEET
0 10 20 30 40

STATE OF TEXAS
BRADLEY G. LANE
130741
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5/23/2025

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NOTES:

1. ALL PROPOSED ELEVATIONS ARE TOP OF PAVEMENT OR NATURAL GROUND UNLESS OTHERWISE NOTED.
2. ALL TOP OF WALL ELEVATIONS ARE TO TOP OF GRADE AT WALL.
3. ALL BOTTOM OF WALL ELEVATIONS ARE TO BOTTOM OF GRADE AT WALL.
4. CONTRACTOR TO VERIFY A.D.A. COMPLIANCE FOR GRADES IN ALL SIDEWALK ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. STANDARDS: NOT EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSS SLOPE AND NOT EXCEED 2.0% IN ANY DIRECTION IN ACCESSIBLE PARKING AREAS.
5. MAINTAIN EXISTING GRADE IN TREE WELLS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO AREA INLETS.

LEGEND

- PROPERTY BOUNDARY
- 900 PROPOSED CONTOURS
- 901 PROPOSED CONTOURS
- 900 EXISTING MAJOR CONTOURS
- 901 EXISTING MINOR CONTOURS
- PROPOSED STORM SEWER
- 4' X 4' AREA INLET
- PROPOSED RETAINING WALL
- XXXX.XX TOP OF PAVEMENT ELEVATION LABEL
- TW=XXXX.XX TOP OF WALL ELEVATION LABEL
- DRAINAGE ARROW

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WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
GRADING PLAN

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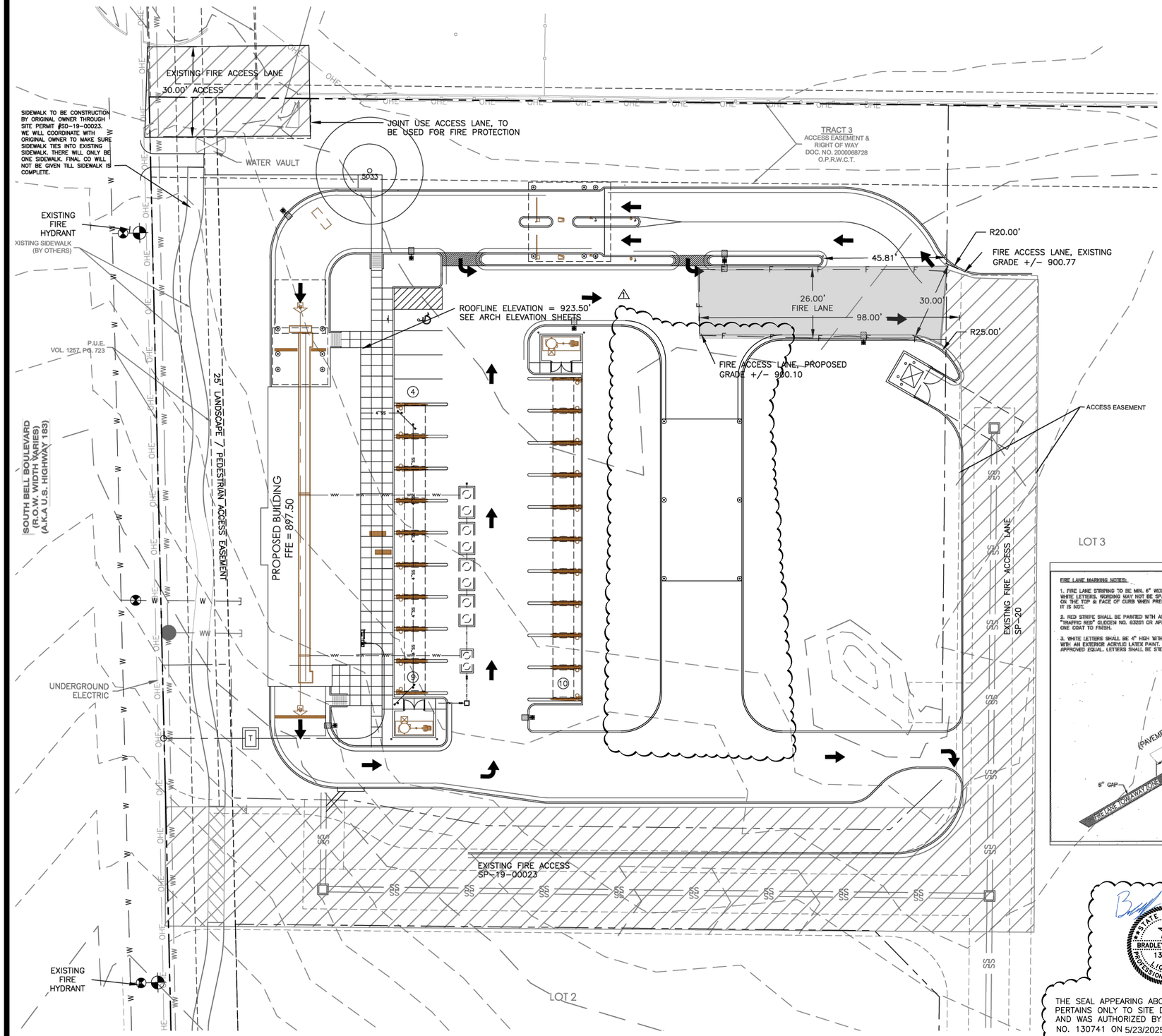

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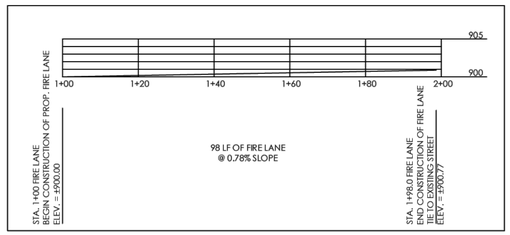
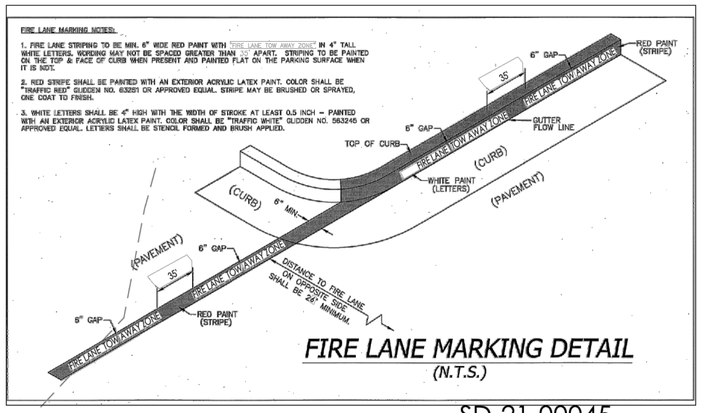
GRAPHIC SCALE IN FEET
0 10 20 30 40



FIRE LANE PROFILE

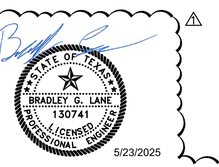
LEGEND

- PROPERTY BOUNDARY
- 900 EXISTING MAJOR CONTOURS
- 901 EXISTING MINOR CONTOURS
- EXISTING EASEMENTS
- F F PROPOSED FIRE LANE
- EXISTING FIRE LANES
- PROPOSED FIRE LANES



FIRE LANE MARKING DETAIL
(N.T.S.)

SD-21-00045



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WASH AND ROLL EXPRESS CAR WASH
SITE PLAN
FIRE PROTECTION PLAN

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-DRIVE AISLE AND CANOPY ADDITION

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13 OF 27

Engineering Solutions

ATTACHMENT N

INSPECTION AND MAINTENANCE FOR PERMANENT BMPs

Thirty Three South Bell Investments LLC. is not responsible for inspection and maintenance for the existing water quality pond. The approved Contributing Zone Plan for the Cluck Creek Commercial Subdivision (Edwards Aquifer Permit #11001813) addresses the inspection and maintenance of this permanent best management practice. As such, no Inspection, Maintenance, Repair, and Retrofit Plan is required.

Engineering Solutions

ATTACHMENT O
PILOT-SCALE FIELD TESTING PLAN

No Pilot-Scale Testing Plan is necessary.

Engineering Solutions

ATTACHMENT P

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

All flow from the subject site is routed through the existing water quality pond of the approved Cluck Creek Commercial Subdivision Contributing Zone Plan EARZ No. 11001813. The existing water quality pond treats and detains the surface runoff and returns it to pre-existing conditions. This minimizes surface stream contamination.

STORM WATER POLLUTION PREVENTION PLAN (SWP3)

CSW BELL BOULEVARD

Austin, Texas

SEPTEMBER 2019

Project Owner:

CSW Bell, LLC.
1703 West 5th Street, Suite 850
Austin, Texas 78703
(512) 861-3550

Project Contractor:

Prepared By:

Kimley-Horn
10814 Jollyville Road, Building IV, Suite 300
Austin, Texas 78759
(512) 418-1771

Firm No. 928
KHA No. 069243101

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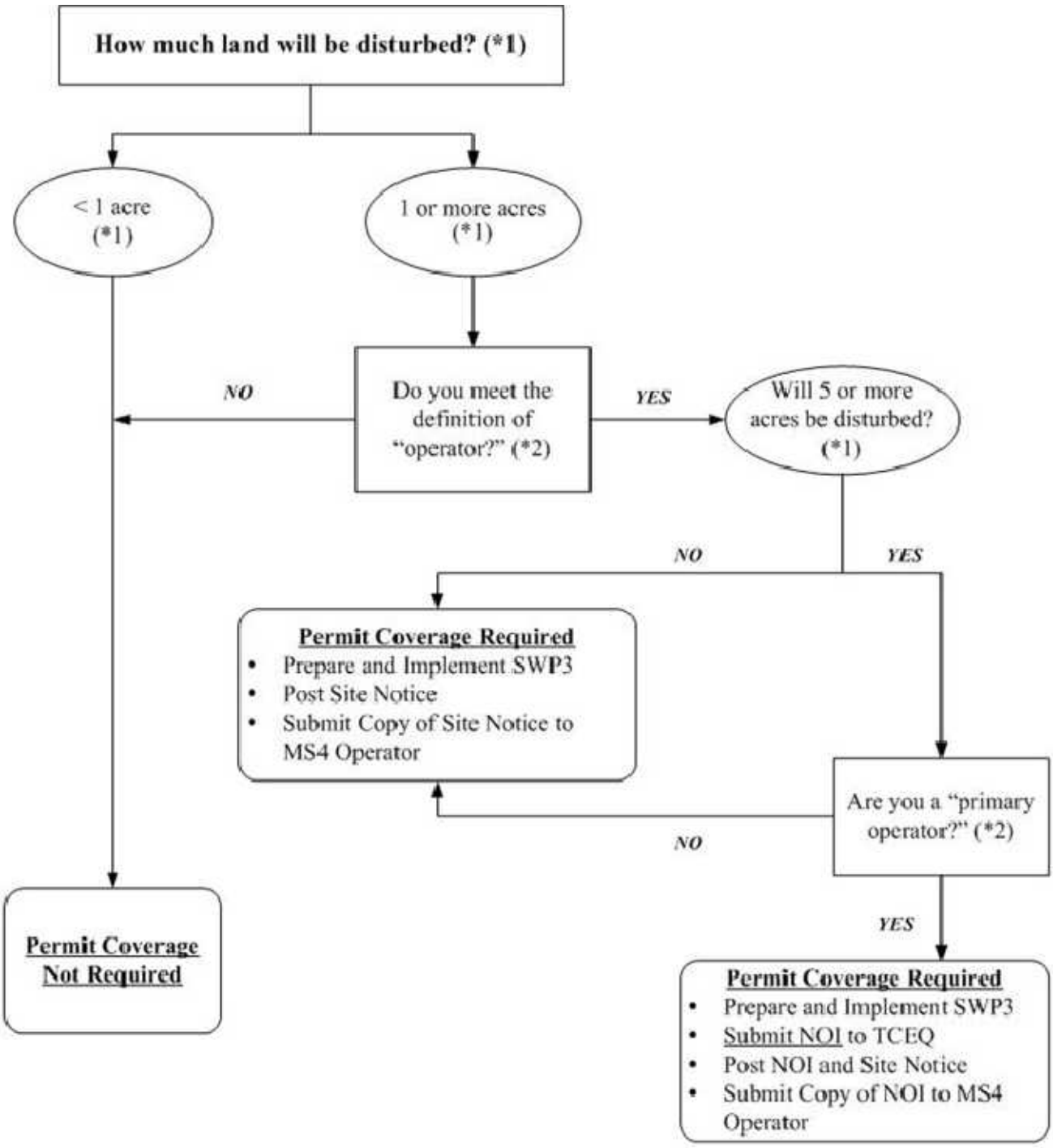
APPENDICES



(*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 "larger 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.***

STORM WATER POLLUTION PREVENTION PLAN REVISIONS

Provide a general description and document the date of any revisions to the storm water pollution prevention plan during the course of this construction project. Revisions may be necessary as a result of site inspections or because of a change in the circumstances of the construction project (such as schedule change or a modification in design).

The Storm Water Pollution Prevention Plan (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 best management practices (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.

REVISION (Refer to attachments if necessary)	DATE	SIGNATURE

1.0 INTRODUCTION

On March 10, 2003, responsibility for the administration of storm water protection associated with construction activities in Texas was delegated by the U.S. Environmental Protection Agency (EPA) to the Texas Commission on Environmental Quality (TCEQ). The Texas Pollutant Discharge Elimination System (TPDES) program in Texas meets or exceeds the National Pollutant Discharge Elimination System (NPDES) standards established on a federal level. This SWP3 has been developed in accordance with the TPDES requirements. Additional local requirements may apply and this SWP3 should be updated accordingly (Appendix O).

The purpose of the SWP3 is to provide guidelines for preventing or minimizing sediment and other pollutants that may originate on the site from flowing into municipal storm systems or jurisdictional waters during the construction period. This plan also addresses the principal activities known to disturb significant amounts of ground surface during construction. Stabilization measures must begin within fourteen (14) days of stoppage of construction activities (Appendix I). The permit coverage requirements terminate when areas disturbed for this project reach full stabilization (i.e., when disturbed areas are paved or achieve 70 percent native background vegetative coverage). Revisions to this plan will be made as necessary to accurately reflect project activities and storm water pollution prevention measures.

The storm water management controls included in this SWP3 focus on providing control of pollutant discharges with practical approaches that use readily available techniques, expertise, materials, and equipment. The necessary forms for implementing the SWP3 are found in the appendices of this document, including the Inspector's Qualifications, Inspection Form, Notice of Intent (NOI), Notice of Termination (NOT), and construction site notice. The SWP3 must be implemented prior to the start of construction activities.

The Project Owner's and the Contractor's roles and responsibilities for implementation and maintenance of the elements of the SWP3 are shown in a checklist in Appendix F of this document. Appendix F also includes a description of primary and secondary operators, along with associated responsibilities. The Project Owner and each Contractor must complete the checklist in Appendix F and sign the included certification statement. The certification statement indicates that each operator understands and accepts their roles and responsibilities with respect to storm water pollution prevention for this project.

A. Project Name and Location

Oak Hill Creekside - Austin, Travis County, Texas (See Appendix A for a project location map).

B. Owner Information

Name: CSW Bell, LLC.
Address: 1703 West 5th Street, Suite 850
Austin, Texas 78703
Representative: Jeff Lahr
Title: Manager
Telephone: (512) 861-3550
Fax: _____

C. Contractor Information

Name: _____
Address: _____
_____
Representative: _____
Title: _____
Telephone: _____
Fax: _____

D. Subcontractor Information

Name: _____
Address: _____
_____
Representative: _____
Title: _____
Telephone: _____
Fax: _____

Name: _____
Address: _____
_____
Representative: _____
Title: _____
Telephone: _____
Fax: _____

E. Discharges Eligible for Authorization

The general permit for construction activities allows for storm water discharges from construction activities, construction support activities, and authorized non-storm water discharges. Under the general permit, construction support activities include, but are not limited to:

- concrete and asphalt batch plants,
- rock crushers,
- equipment staging areas,
- material storage yards,
- material borrow areas, and
- excavated material disposal areas.

Storm water discharges from these construction support activities are authorized under the general permit for construction activities provided:

- the activity is located within one mile of the permitted construction site and is directly supporting the construction activities,
- the SWP3 for the permitted construction activities is developed to include the controls and measures to reduce erosion and discharge of pollutants in storm water runoff from the construction support activities, and

- the construction support activities either do not operate beyond the completion date of the construction activity or, at the time that they do, are authorized under separate Texas Pollutant Discharge Elimination System (TPDES) authorization.

The following non-storm water discharges are also authorized under the general permit for construction activities:

- Discharges from firefighting activities,
- Uncontaminated fire hydrant flushings,
- Water from routine external washing of vehicles, the external portion of buildings or structures, and pavement (where detergents and soaps are not used),
- Uncontaminated water used to control dust,
- Potable water sources, including waterline flushings,
- Uncontaminated air conditioning condensate,
- Uncontaminated groundwater or spring water, and
- Lawn watering and similar Irrigation drainage.

Part II.A.3 of the general permit contains additional information and requirements for non-storm water discharges. Discharges of storm water runoff from concrete batch plants may be authorized provided that the benchmark sampling and associated requirements located in Part V of the general permit are met. The wash out of concrete trucks associated with off-site facilities may be conducted in accordance with the requirements of Part V of the general permit. The Operator will be responsible for updating the SWP3 to meet Part V requirements, if applicable. A non-storm water discharge inventory is located in Appendix L.

F. Obtaining Coverage under the General Permit

Construction activities, including the activities associated with this project, disturbing five (5) acres or more (definition of a large construction activity) are required to comply with the following requirements of the general permit to obtain permit coverage:

a) Develop a SWP3 according to the provisions of the general permit that covers either the entire site or all portions of the site for which the applicant is the operator and implement that plan prior to commencing construction activities.

b) Primary operators must submit a NOI:

   1) at least seven days prior to commencing construction activities if mailing a paper NOI, or

   2) prior to commencing construction activities if utilizing electronic submittal.

   A copy of the NOI form is located in Appendix H. Instructions for NOI submittal relating to primary operator additions or changes are also located in Appendix H.

c) Post a site notice where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction. The site notice must be maintained until completion of the construction activity.

   1) For linear construction activities, the site notice must be placed in a publicly accessible location near where construction is actively underway. A copy of the construction site notice is located in Appendix H.

d) All primary operators must also post a copy of the signed NOI 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 starting construction activities until completion of the construction activity. If multiple crews will be conducting construction activities under the general permit simultaneously, copies of the signed NOI should be posted at each separate construction site.

e) All primary operators must provide a copy of the signed NOI at least seven days prior to commencement of construction activities to any secondary operator and to the operator of any municipal separate storm sewer system (MS4) receiving construction site discharge. The names and addresses of all MS4 operators receiving a copy of the NOI are to be recorded in this SWP3 (Appendix H).

f) Secondary operators are regulated under the general construction permit but are not required to submit a NOI provided that:

   1) a primary operator(s) at the site has submitted a NOI, or

   2) another operator(s) is required to submit a NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage.

   Additional information for secondary operators seeking alternative coverage is located in the general permit.

Questions about the TPDES construction permit program can be directed to the TCEQ Storm Water and General Permits Team at (512) 239-4515. A copy of the TPDES General Permit (TXR150000) for Storm Water Discharges from Construction Activities has been included in Appendix G for reference.

G. Notice of Change Letter

If the Operator becomes aware that he/she failed to submit any relevant facts, or submitted incorrect information in a NOI, the correct information must be provided to the TCEQ in a Notice of Change (NOC) letter within fourteen (14) days after discovery. In addition, if relevant information provided in the NOI changes, a NOC letter must be submitted to the TCEQ within fourteen (14) days of the change. A copy of the NOC must be provided to the operator of any MS4 receiving discharge from the construction activity. The names and addresses of all MS4 operators receiving a copy of the NOC must be included in this SWP3 (Appendix H).

H. Notice of Termination

Authorization under the general permit must be terminated by submitting a completed and signed NOT form provided in Appendix H. The NOT must be submitted to the TCEQ, and a copy of the NOT must be provided to the operator of any municipal separate storm sewer system (MS4) receiving the discharge within thirty (30) days after final stabilization has been achieved on all portions of the site that are the responsibility of the permittee, or another permitted contractor has assumed control over all areas of the site that have not been finally stabilized. The names and addresses of all MS4 operators receiving a copy of the NOT must be recorded in this SWP3 (Appendix H).

I. Termination of Coverage for Secondary Operators

Each operator that obtained authorization of the general permit without submitting a NOI must remove the site notice and complete the applicable portion of the notice related to removal of the notice. A copy of

the completed notice must be submitted to the operator of any MS4 receiving site discharge within 30 days of any the following conditions:

a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee,

b) a transfer of operational control has occurred, or

c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

J. SWP3 Availability

This 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. This SWP3 must be made readily available at the time of an on-site inspection.

K. Hazardous Materials

The following potential pollutant sources may be present at the site due to the nature of the construction activities. An inventory of materials is located in Appendix L. Controls for potential pollutants are listed and described in Appendices C and D.

- Solvents
- Stains/paints
- Fuels
- Oils
- Grease
- Pesticides
- Fertilizer
- Sediment/total suspended solids
- Trash
- Paving
- Concrete curing compound
- Glue adhesives
- Joint compound
- Concrete, painting, and brick wash
- Excavation pump-out water
- Concrete

2.0 SITE DESCRIPTION

A. General Site Description

The construction site is located in Cedar Park, which is located in Williamson County, Texas (Appendix A). The site covers an area of approximately 14.45-acres and is not part of a known larger common plan of development. The construction site is generally located at the northeast corner of the intersection of South Bell Boulevard and East Cypress Creek Road. Coordinates for the site are approximately 30.503 latitude and -97.816 longitude (1983 North American Datum (NAD83) Coordinates).

This site is located over the Edwards Aquifer Contributing Zone and is not located on Indian Country Lands. If information about the Edwards Aquifer Zone or Indian Country Lands changes, the Operator should update this SWP3 accordingly.

B. Nature of Construction Activity

The purpose of the construction project is to construct a commercial subdivision that includes a variety of commercial developments with associated parking, water quality, and utility improvements. . The table in Appendix B should be updated to depict the anticipated schedule for the project.

C. Estimate of Total Site Area and Disturbed Area

The amount of area involved in the project is estimated to be 14.69-acres. This includes offsite acreage for the widening of South Bell Boulevard. Disturbed areas are projected to total approximately 13.64-acres.

D. Storm Water Discharge Locations and Quality Data

No data are available describing quality of storm water discharges from the site. Information will be added to this plan as it is received.

E. Information on Soil Types

A soils map showing the project site and surrounding area is included in Appendix A. The predominant soil types found on the project site are Doss silty clay, moist, 1 to 5 percent slopes; Fairlie clay, 1 to 2 percent slopes; Sunev silty clay loam, 1 to 3 percent slopes. A description of these soils is located in Appendix A (USDA, 2019).

F. Receiving Waters and Wetlands

The water quality and detention basins will release stormwater runoff into Williamson Creek. Proposed release rates are lower than existing conditions.

New sources or new discharges of the constituents of concern to impaired waters are not authorized by the general construction permit (unless otherwise allowable under 30 TAC Chapter 305 and applicable state law). Impaired waters are those that do not meet applicable water quality standards and are listed on the EPA approved CWA 303(d) list. Pollutants of concern are those for which the water body is listed as impaired.

If discharges are expected to enter into a receiving water body located on the 303(d) list, constituents of concern are those for which the water body is listed as impaired. Discharges of the constituents of concern to impaired water bodies for which there is a total maximum daily load (TMDL) are not eligible for the general permit unless they are consistent with the approved TMDL. The receiving water does not have a known published TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges, including monitoring frequency and reporting required by TCEQ rules, into this SWP3 in order to be eligible for coverage under the general permit.

There are no known wetlands on the site. If any wetlands are identified on the site, the Operator should update this SWP3 accordingly.

G. Threatened and Endangered Species

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by the general construction permit, unless the requirements of the Endangered Species Act are satisfied. This project does not appear to contain suitable habitat for listed species in Williamson County, Texas. It is unlikely that the project has the potential to adversely affect a listed endangered or threatened species in Williamson County, Texas. If information regarding the presence of protected species changes the Operator should consult with the appropriate state or federal agency.

H. Discharges to the Edwards Aquifer Recharge Zone

Discharges cannot be authorized by the general permit where prohibited by 30 Texas Administrative Code (TAC) Chapter 213.

1. New Discharges

   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, 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 the general construction permit. A copy of 30 TAC Chapter 213 is located in Appendix Q.

2. Existing Discharges

   For existing discharges, the requirements of the agency-approved Water Pollution Abatement Plan under the Edwards Aquifer Rules are in addition to the requirements of the general construction permit. Best management practices and maintenance schedules for structural storm water 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 storm water runoff are in addition to the requirements in the general construction permit. A copy of the 30 TAC Chapter 213 is located in Appendix Q.

For discharges from large construction activities located on the Edwards Aquifer recharge zone or the Edwards Aquifer contributing zone, applicants must also submit a copy of the NOI to the appropriate TCEQ regional office. For discharges from large construction activities by operators not required to submit a NOI, a copy of the construction site notice must be submitted to the appropriate TCEQ regional office.

Counties:	**Contact:**
Comal, Bexar, Medina, Uvalde, and Kinney	TCEQ Water Program Manager San Antonio Regional Office 14250 Judson Road San Antonio, Texas (210) 490-3096
Williamson, Travis, and Hays	TCEQ Water Program Manager Austin Regional Office 2800 South IH 35, Suite 100 Austin, Texas 78704-5712 (512) 339-2929

3.0 BEST MANAGEMENT PRACTICE MEASURES AND CONTROLS

In order to manage and reduce soil erosion, sediment loss, construction-generated waste, and construction-related toxic materials, BMPs must be utilized at the construction site. A variety of structural controls, soil stabilization techniques, storm water management controls, dust controls, waste disposal techniques, and "good housekeeping" practices that will be utilized in this construction project are documented in a checklist in Appendix C.

A detailed set of fact sheets for BMPs excerpted from the *Integrated Storm Water Design Manual for Construction* (North Central Texas Council of Governments, 2010) is located in Appendix D. These fact sheets show many examples of BMPs that may be appropriate for the site. If another BMP is being used, include the BMP information in Appendix D. The Contractor is responsible for selecting, implementing, and maintaining BMPs.

A. General Requirements

1. 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.

2. Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

3. Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

B. Erosion Control and Stabilization Practices

1. 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.

2. Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

    a) the dates when major grading activities occur,

    b) the dates when the construction activities temporarily or permanently cease on a portion of the site, and

    c) the dates when stabilization measures are initiated.

    A schedule of construction activities is located in Appendix B. Appendix I contains a record of temporary/permanent ceasing of construction activities.

3. Erosion control and stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily ceased. Stabilization measures that provide a protective cover must be initiated as soon as practicable in portions of the site where construction activities have permanently ceased. These measures must be initiated no more than 14 days after

the construction activity in that portion of the site has temporarily or permanently ceased unless provided for in Part III.F.2.b.iii of the general permit

C. Sediment Control Practices

1. Sites with Drainage Areas of Ten or More Acres

    a) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. Sedimentation basin information is located in Appendix N.

    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.

2. Sites with Drainage Areas Less than Ten 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. 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 may be utilized. Sedimentation basin information is located in Appendix N.

3. A description of any measures that will be installed during the construction process to control pollutants in storm water discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site or prior to submission of an NOT.

4. Other required controls and BMPs are listed below. Best management practice checklists and fact sheets are included in Appendices C and D. A non storm water discharge inventory is located in Appendix L.

    a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. Permittees must include a description of controls utilized to accomplish this requirement.

    b) Permittees 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) Permittees must include a description of potential pollutant sources from areas other than construction (such as storm water discharges from dedicated asphalt plants and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

    d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

    e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

f) Permittees shall ensure that all other required controls and BMPs comply with all the requirements of Part III.G of the TXR150000 general permit.

D. Erosion and Sediment Control Requirements

Any discharge regulated under the TXR150000 general permit must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology current available (BPT).

a) Erosion and sediment control: The permittee must design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. Such controls must be designed, installed and maintained to meet minimum requirements outlined in section III.G.1. of the general permit, provided in Appendix G.

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 creased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Temporary stabilization must be completed within 14 days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage.

c) Dewatering: Discharge from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls. Examples of appropriate controls are outlined below in Section 4.0 of this SWP3 document.

d) Pollution prevention measures: The permittee must design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. Such controls must be designed, installed, implemented, and maintained to meet requirements outlined in section III.G.4. of the general permit, provided in Appendix G.

e) Prohibited discharges: Certain discharges are not prohibited under the TXR150000 general permit. These prohibited discharges are outlined in section III.G.5. of the general permit, provided in Appendix G.

f) Surface outlets: When discharging from basins and impoundments, the permittee must utilize outlet structures that withdraw water from the surface, unless infeasible.

4.0 EXAMPLE PRACTICES

A. Example Stabilization Practices

1. Temporary Stabilization

   Top soil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area. Areas of the site which are to be paved will be temporarily stabilized until pavement can be applied.

2. Permanent Stabilization

   Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity.

B. Example Structural Practices

1. Interceptor Swale

   An interceptor swale is a small v-shaped or parabolic channel which collects runoff and directs it to a desired location. It can either have a natural grass lining or, depending upon slope and design velocity, a protective lining of erosion matting, stone or concrete. The interceptor swale can either be used to direct sediment-laden flow from disturbed areas into a controlled outlet or to direct “clean” runoff around disturbed areas. Since the swale is easy to install during early grading operations, it can serve as the first line of defense in reducing runoff across disturbed areas. As a method of reducing runoff across the disturbed construction area, it reduces the requirements of structural measures to capture sediment from runoff since the flow is reduced. By intercepting sediment-laden flow downstream of the disturbed area, runoff can be directed into a sediment basin or other BMP for sedimentation as opposed to long runs of silt fence, straw bales or other filtration method.

2. Silt Fence

   A silt fence consists of geotextile fabric supported by poultry netting or other backing stretched between either wooden or metal posts with the lower edge of the fabric securely embedded in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. Silt fence provides both filtration and time for sedimentation to reduce sediment and the velocity of the runoff. Properly designed silt fence is economical since it can be relocated during construction and reused on other projects. Silt fence is normally used as perimeter control located downstream of disturbed areas. It is only feasible for non-concentrated, sheet flow conditions.

3. Fiber Roll/Sediment Log

   Fiber rolls/sediment logs are tightly compacted tubular cylinders composed of straw, flax, coconut fiber, or other similar types of material wrapped with a fiber mesh. They must be secured with stakes. When installed at the base of an embankment or on a slope, fiber rolls are effective at controlling sediment and reducing erosion rates. They achieve this by intercepting storm water runoff, thereby reducing the velocity of the flow and dispersing concentrated runoff as sheet flows. Fiber rolls are

also water-permeable and are effective at trapping eroded sediment. It is important not to crush fiber rolls when they are installed. If more than one sock is placed in a row, the socks should be overlapped; not abutted.

4. Inlet Control

   Inlet protection consists of a variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water. Inlet protection is normally used as a secondary defense in site erosion control due to the limited effectiveness and applicability of the technique. It is normally used in new developments that include new inlets or roads with new curb inlets or during major repairs to existing roadways. Inlet protection has limited use in developed areas due to the potential for loading, traffic safety and pedestrian safety and maintenance problems. Inlet protection can reduce sediment in a storm sewer system by serving as a back system to onsite controls or by reducing sediment loads from controls with limited effectiveness such as straw bale dikes.

5. Check Dams

   Check dams are small barriers consisting of straw bales, rock, or earth berms placed across a drainage swale or ditch. They reduce the velocity of small concentrated flows, provide a limited barrier for sediment and help disperse concentrated flows, reducing potential erosion. Check dams are used for long drainage swales or ditches in which permanent vegetation may not be established and erosive velocities are present. They are typically used in conjunction with other techniques such as inlet protection, rip rap or other sediment reduction techniques. Check dams provide limited treatment. They are more useful in reducing flow to acceptable levels.

6. Erosion Control Mats

   An erosion control mat (ECM) is a geomembrane or biodegradable fabric placed over disturbed areas to limit the effects of erosion due to rainfall and runoff across barren soil. Erosion control mats are manufactured by a wide variety of vendors addressing a wide variety of conditions such as vegetation establishment and high velocity flow. Types of matting include organic (jute, straw) and synthetic (plastic and glass fiber) materials. Mats can provide both temporary and/or permanent stabilization for disturbed soil or barren areas. It is used for difficult areas to stabilize such as steep slopes, temporary or permanent drainage swales, embankments or high traffic (pedestrian) areas. Some mats are reusable, reducing the initial cost of the installation.

7. Stabilized Construction Entrance

   A stabilized construction entrance consists of a pad consisting of gravel, crushed stone, recycled concrete or other rock like material on top of geotextile filter cloth to facilitate the wash down and removal of sediment and other debris from construction equipment prior to exiting the construction site. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking. For long term projects, cattle guards or other type of permanent rack system can be used in conjunction with a wash rack. This directly addresses the problem of silt and mud deposition in roadways used for construction site access. Stabilized construction entrances are used primarily for sites in which significant truck traffic occurs on a daily basis. It reduces the need to remove sediment from streets. If used properly, it also directs the majority of traffic to a single

location, reducing the number and quantity of disturbed areas on the site and providing protection for other structural controls through traffic control.

8. Earth Dike

   An earth dike is constructed along the uphill perimeter of a site. A portion of the dike will divert run-on around the construction site. The remaining portion of the dike will collect runoff from the disturbed area and direct the runoff to the sediment basin.

9. Triangular Sediment Filter Dike

   A triangular sediment filter dike is a self-contained silt fence consisting of filter fabric wrapped around welded wire fabric 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 in situations where it is impractical to install embedded posts for support. 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 or hay bale installation is impracticable. Since they can be anchored without penetration (through the use of rock), pavement damage can be minimized. 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 also serve 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.

10. Sediment Basin

    Sediment basins are required, where feasible, for sites with drainage areas of ten (10) or more acres. Additional information for sedimentation basins is located in Appendix N.

11. Tree Protection

    Tree protection prevents the disturbance of existing trees and their roots on a construction site. Trees are not the same shape below ground as they are above, so it is difficult to predict the length or location of their roots. One common method used to identify the critical root zone is to define the tree's "drip line" – the area directly below the branches of the tree. Many roots extend beyond the longest branches a distance equal to two or more times the height of the tree. For this reason, it is recommended to protect as much of the area beyond the drip line as feasible. An example of tree protection is to tie continuous nylon string with two-foot tundra weight orange streamers to eight-foot minimum metal t-posts driven two feet into the ground. Four-foot minimum orange plastic fencing per manufacturer's recommendations will surround the critical root zone to keep equipment off the rooting area. If a fence cannot be erected, cushion the rooting area with six inches of wood chips, wood, or brick paths. Where root areas must be graded, cut large roots instead of tearing them with equipment.

C. Waste Control and Disposal

1. Waste Materials

   All waste materials will be collected and stored in a securely lidded metal dumpster rented from a local waste management company, which is a licensed solid waste management company. The dumpster will meet all local and any State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied periodically or more often if necessary, and the trash will be hauled to an appropriate waste management facility. No construction waste materials will be buried onsite. Staging areas for construction materials should have secondary containment. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer. The individual who manages the day-to-day site operations will be responsible for seeing that these procedures are followed.

2. Hazardous Waste

   All hazardous waste materials will be disposed of in the manner specified by local or State regulations or by the manufacturer. Site personnel will be instructed in these practices and the individual who manages day-to-day site operations will be responsible for seeing that these practices are followed.

3. Sanitary Waste

   All sanitary waste will be collected from the portable units periodically by a licensed sanitary waste management contractor, as required by local regulation.

4. Offsite Vehicle Tracking and Dust Control

   A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin. If dust is visible when dump trucks are leaving the site due to construction activities, dust suppression techniques such as wetting the soil will be employed.

D. Timing of Controls/Measures

The contractor and the operator shall review the SWP3 requirements prior to beginning construction activities. The following is a sample erosion control sequence:

- Site Mobilization: Prior to any construction on the site a stabilized construction entrance shall be installed.
- Clearing and Rough Grading: Prior to any grading of the site, erosion control measures shall be installed. These controls may include but are not limited to silt fences, sedimentation ponds and vegetated swales. The installation is required to prevent sediment from leaving disturbed areas.
- Storm Drain Installation: In addition to maintaining the devices installed during initial grading, supplemental control measures will need to be installed. These devices will include devices shown on the plan such as storm drain inlet protection and sediment traps. Inlet protection devices prevent sedimentation from entering the inlet and subsequently, the storm sewer system

as well as the receiving water body. Other devices may be required as shown on the erosion control plan or requested by the inspector or operator.

- Installation of Public Utilities: Additional control measures are likewise not required during installation of public utilities. However, maintenance of existing control measures installed during previous phases must continue.
- Pavement Installation: In addition to maintaining the control measures installed during initial grading and storm drain installation phases, supplemental measures should be installed. Upon completion of paving and curb backfill operations, control measures should be installed behind curbs at handicap ramps and along parkways where sediment could enter streets and/or paved areas.
- Final Grading: Additional control measures are not required during final grading. However, maintenance of existing control measures installed during previous phases will continue.
- Building Construction: In addition to maintaining previously installed control measures, a strict policy will be enacted which minimizes vehicle traffic from entering non-paved areas. Construction materials will be unloaded from existing paved surfaces where possible, thereby preventing disturbing control measures already in place and reducing sediment tracking into paved areas. Areas where construction activity temporarily ceases for more than 21 days will be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, the accumulated sediment will be removed and the erosion control measures will be removed.

5.0 RELEASES OF REPORTABLE QUANTITIES

Because construction activities may handle certain hazardous substances over the course of the project, spills of these substances in amounts that equal or exceed Reportable Quantity (RQ) levels are a possibility. Material management practice guidelines are located in Appendix K.

EPA has issued regulations that define what reportable quantity levels are for oil and hazardous substances. These regulations are found at 40 CFR Part 110 Part 117, or 40 CFR Part 302. A list of RQs are included in Appendix M. If there is a RQ release during the construction period, then you must take the following steps:

- Notify TCEQ immediately at (800) 832-8224.
- Notify the National Response Center immediately at (800) 424-8802.
- Within fourteen (14) days, submit a written description of the release to TCEQ providing the date and circumstances of the release and the steps to be taken to prevent another release.
- Modify the pollution prevention plan to include the date of release, the circumstances leading to the release, and steps taken to prevent reoccurrence of the release.

6.0 STATE AND LOCAL PROGRAMS

The TPDES program meets or exceeds the NPDES standards established on a federal level. This SWP3 has been developed in accordance with the requirements of the TPDES requirements. Information for the City of Leander has been included in Appendix O. Additional local requirements may apply and this SWP3 should be updated accordingly.

Storm water from the project construction area discharges into the storm sewer system of the City of Cedar Park (MS4).

Construction projects that discharge storm water to an MS4 are required to:

- submit a copy of the signed NOI to the operator of the MS4 at least seven days prior to the commencement of construction activities,
- post a copy of the signed NOI and construction site notice at the project site at all times,
- submit a copy of any NOCs to the operator of the MS4,
- submit a copy of the NOT to the operator of the MS4, and
- keep and maintain a list of the names and address of MS4s that receive NOI, NOT, and/or NOC forms (Appendix H).

7.0 INSPECTION AND MAINTENANCE

A. Inspection Schedule

1. All disturbed areas, as well as all erosion and sediment control devices, will be inspected according to one of the following schedules:

   a) at least every fourteen (14) calendar days and within 24 hours after a rainfall of 0.5 inch or greater, or

   b) every seven (7) days on the same day of the week each week, regardless of whether or not there has been a rainfall event since the previous inspection.

2. Inspections may occur on either schedule provided that this SWP3 reflects the current schedule and that any changes are in accordance with the following:

   a) the schedule is 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 this SWP3 (an inspection schedule form is located in Appendix E).

B. Inspection Reports

1. Completed inspection reports (Appendix E) will include the following information:
   a) scope of the inspection,
   b) date of the inspection,
   c) name(s) of personnel making the inspection,
   d) reference to qualifications of inspection personnel,
   e) observed major construction activities, and
   f) actions taken as a result of the inspection.

2. All disturbed areas (on and off-site), areas for material storage locations where vehicles enter or exit the site, and all of the erosion and sediment controls that were identified as part of the SWP3 must be inspected. The inspection report must state whether the site was in compliance or identify any incidents of non-compliance. The report will be signed by the qualified inspector in accordance with the TPDES general permit and filed in the SWP3. A sample Inspection Report is included in Appendix E, along with an Inspector Qualification Form. All reports and inspections required by the general construction permit will be completed by a duly authorized representative. A copy of a Delegation of Signatories to Reports letter is included in Appendix J.

3. The operator should correct any damage or deficiencies as soon as practicable after the inspection, but in no case later than seven (7) calendar days after 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 or as soon as practicable. A list of maintenance guidelines is included in Appendix E.

4. Inspection reports will be kept in the Operator's file, along with the SWP3, for at least three years from the date that the NOT is submitted to the TCEQ for the construction site.

C. Final Stabilization

Final stabilization of the construction site has been achieved when all soil disturbing activities at the site have been completed, and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures. If a vegetative cover cannot be established, equivalent permanent stabilization measures (such as riprap, gabions, or geotextiles) can be employed. When these conditions have been met, BMPs can be removed from the construction area.

8.0 RECORD RETENTION

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted. Records include:

- A copy of the SWP3,
- All data used to complete the NOI, if an NOI is required for coverage under this general permit,
- All reports and actions required by this permit, including a copy of the construction site notice, and
- 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.

9.0 CONCRETE BATCH PLANTS (IF APPLICABLE)

A. Storm Water Runoff from Concrete Batch Plants

Discharges of storm water runoff from concrete batch plants may be authorized under the general permit provided that the requirements in Part IV of the permit are met (Appendix G). If discharges are not covered under the general permit, then discharges must be authorized under an alternative permit. Authorization for discharge or land disposal of concrete batch plant wastewater must be obtained under an alternative permit.

B. Benchmark Sampling Requirements

Operators of concrete batch plants must sample the storm water runoff from the concrete batch plant according to the requirements of the general permit. A table of benchmark monitoring values is located in Part IV.A. of the general permit. Analytical results that exceed a benchmark value are not a violation of the general construction permit. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. Benchmark sampling records should be included in Appendix P.

C. Additional BMP and SWP3 Requirements

The following items are additional requirements for concrete batch plants. The Operator is responsible for updating the SWP3 as appropriate. Additional information for concrete batch plant requirements is located in Part IV of the general construction permit. Records and information for the concrete batch plant should be included in Appendix P.

1. A description of potential pollutant sources associated with the concrete batch plant must be kept in the SWP3.

2. The site map in Appendix A must include the following information:

    a) the location of all outfalls for storm water discharges associated with concrete batch plants;

    b) a depiction of the drainage area and the direction of flow to the outfall(s);

    c) structural controls used within the drainage area(s);

    d) the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activity areas; areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material process and storage areas; and loading and unloading areas; and

    e) 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; areas with significant materials; and areas where major spills or leaks have occurred.

3. A list of materials handled at the concrete batch plant that may be exposed to storm water and that have a potential to affect the quality of storm water discharges associated with concrete batch plants must be kept in this SWP3.

4. A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to storm water and that drain to storm water outfalls associated with concrete batch plants must be developed, maintained, and updated.

5. A summary of existing storm water discharge sampling data must be maintained if available.

6. Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.

7. Areas where potential spills that can contribute pollutants to storm water runoff, and the drainage areas from these locations must be identified. Include material handling procedures, storage requirements, and use of equipment information. Procedures for cleaning up spills must be identified and made available to the appropriate personnel.

8. Qualified facility personnel must be identified to inspect designated equipment and areas of the facility specified in this SWP3. Inspection frequency must be specified based upon a consideration of the level of concrete production, but must be a minimum of once per month while the facility is in operation. The inspection must take place while the facility is in operation and include all areas that are exposed to storm water at the site. Records of inspections must be maintained in Appendix P.

9. An employee training program must be developed to educate personnel. At a minimum, training must occur prior to the initiation of operation of the concrete batch plant.

10. A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of storm water discharges must be included with this SWP3.

11. Include 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.

12. At least once per year, one or more qualified personnel shall conduct a compliance evaluation of the plant. Evaluation requirements are listed in Part IV.B.3 of the general permit.

10.0 CONCRETE TRUCK WASH OUT (IF APPLICABLE)

The wash out of concrete trucks at the construction site is authorized, provided that the requirements in Part V of the general permit are met. Authorization is limited to the land disposal of wash out water from concrete trucks. Any other direct discharge of concrete production waste eater must be authorized under a separate general permit or individual permit.

A. Wash Out Requirements

1. Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by the general permit.

2. Concrete truck wash out water should be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the site.

3. Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete wash out water is prohibited at all times, and the operator should have BMPs sufficient to prevent the discharge of concrete truck wash out as the result of rain.

4. The discharge of wash out water should not cause or contribute to groundwater contamination.

5. The Operator is responsible for showing concrete wash out areas on a map (Appendix A).

11.0 REFERENCES

North Central Texas Council of Governments (NCTCOG). 2010. Integrated Storm Water Management Technical Manual. http://iswm.nctcog.org/technical_manual.asp.

Texas Commission on Environmental Quality (TCEQ). 2014. "2014 Texas Water Quality Inventory and 303(d) List." [Online] (accessed on September 20th, 2019). Available URL: http://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_basin12.pdf.

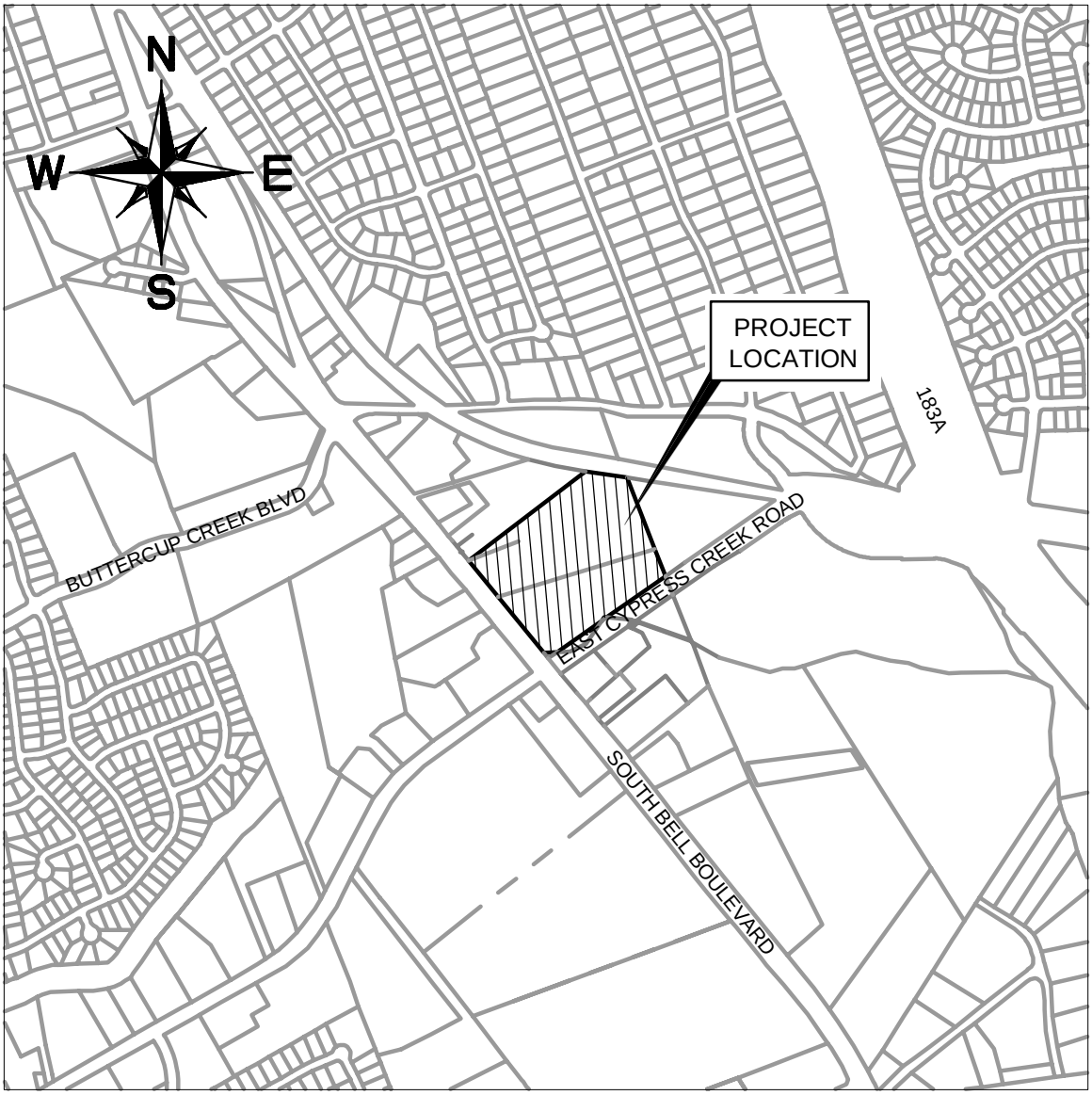
United States Department of Agriculture (USDA). 2016. Soil Survey of Williamson County, Texas. "Web Soil Survey." [Online] (accessed on July 1st, 2019). Available URL: http://websoilsurvey.nrcs.usda.gov/app/

APPENDIX A

PROJECT MAPS

Map/Figure Notes:

- The Operator is solely responsible for selection, implementation, maintenance, and effectiveness of all BMPs.
- Best management practices shown on the attached figures are suggested controls only. The Operator will record BMPs (whether called out on the original SWP3 or not) directly on the site map.
- If information is not shown or if site conditions change from the attached figures, the Operator is responsible for updating the maps. The following information should be included on maps.
  - drainage patterns and approximate slopes anticipated after major grading activities,
  - areas where soil disturbance will occur,
  - locations of all major structural controls either planned or in place,
  - locations where stabilization practices are expected to be used,
  - locations of off-site material, waste, borrow, fill, or equipment storage areas,
  - surface waters (including wetlands) either adjacent or in close proximity,
  - locations where storm water discharges from the site directly to a surface water body or a MS4, and
  - vehicle wash areas
  - designated points on the site where vehicles will exit onto paved roads
- Where the amount of information required to be included on the map would result in a single map being difficult to interpret, the operator shall develop a series of maps that collectively include the required information.



ROAD MAP

NTS

GRID: F12

MAPSCO: 703D, 703H

CSW BELL BOULEVARD

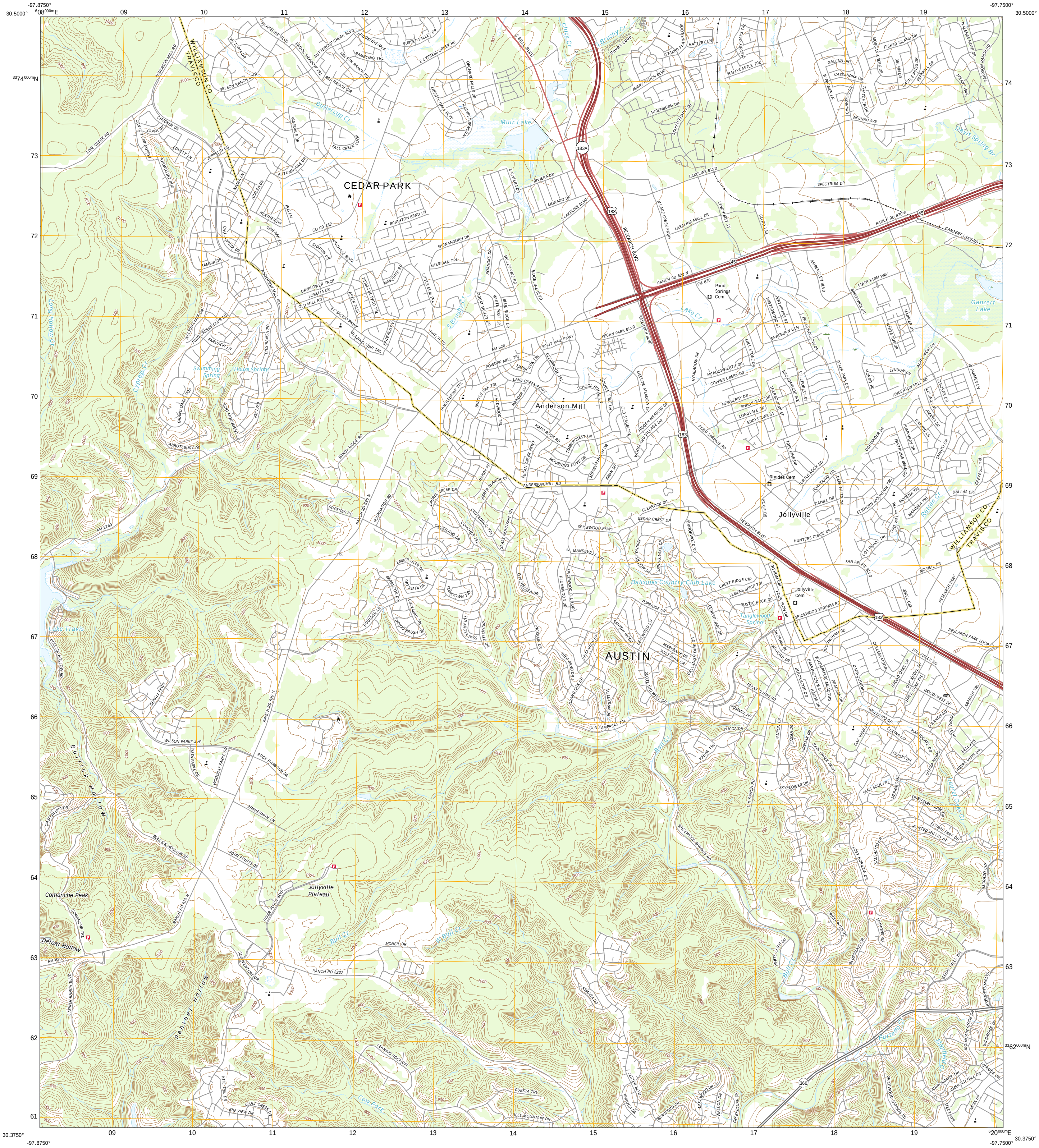
Austin, Texas
September 2019

Kimley»Horn
10814 Jollyville Road
Building IV, Suite 300
Austin, Texas 78759
512-418-1771
State of Texas Registration No. F-928

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

The National Map
US Topo

JOLLYVILLE QUADRANGLE
TEXAS
7.5-MINUTE SERIES



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

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery........NAIP, September 2016 - November 2016
Roads........U.S. Census Bureau, 2015
Names........GNIS, 1979 - 2018
Hydrography........National Hydrography Dataset, 2002 - 2018
Contours........National Elevation Dataset, 2002
Boundaries........Multiple sources; see metadata file 2016 - 2017

Wetlands........FWS National Wetlands Inventory 1982

MN
GN
0°36′ 11 MILS
3°43′ 66 MILS

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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

SCALE 1:24 000

KILOMETERS / METERS / MILES / FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

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

1 Nameless
2 Leander
3 Round Rock
4 Mansfield Dam
5 Pflugerville West
6 Bee Cave
7 Austin West
8 Austin East

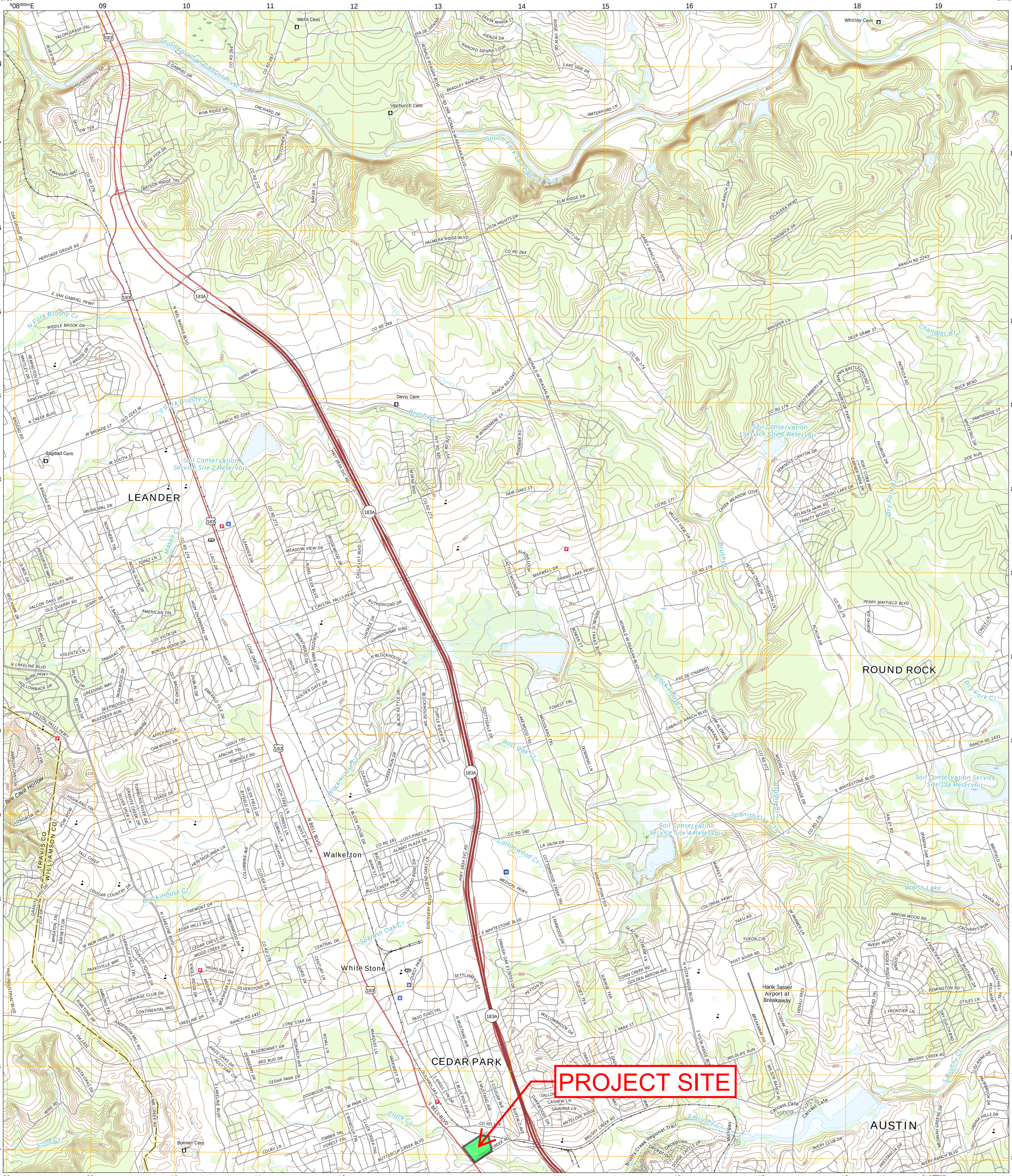
ADJOINING QUADRANGLES

JOLLYVILLE, TX
2019

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

The National Map
US Topo

LEANDER QUADRANGLE
TEXAS
7.5-MINUTE SERIES



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

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Roads....................U.S. Census Bureau, 2015
Names....................GNIS, 1979 - 2018
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Wetlands................FWS National Wetlands Inventory 1982

MN
GN
0°36´
11 MILS
3°43´
66 MILS

UTM GRID AND 2019 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

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

SCALE 1:24 000

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

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

1 Liberty Hill
2 Leander NE
3 Georgetown
4 Nameless
5 Round Rock
6 Mansfield Dam
7 Jollyville
8 Pflugerville West

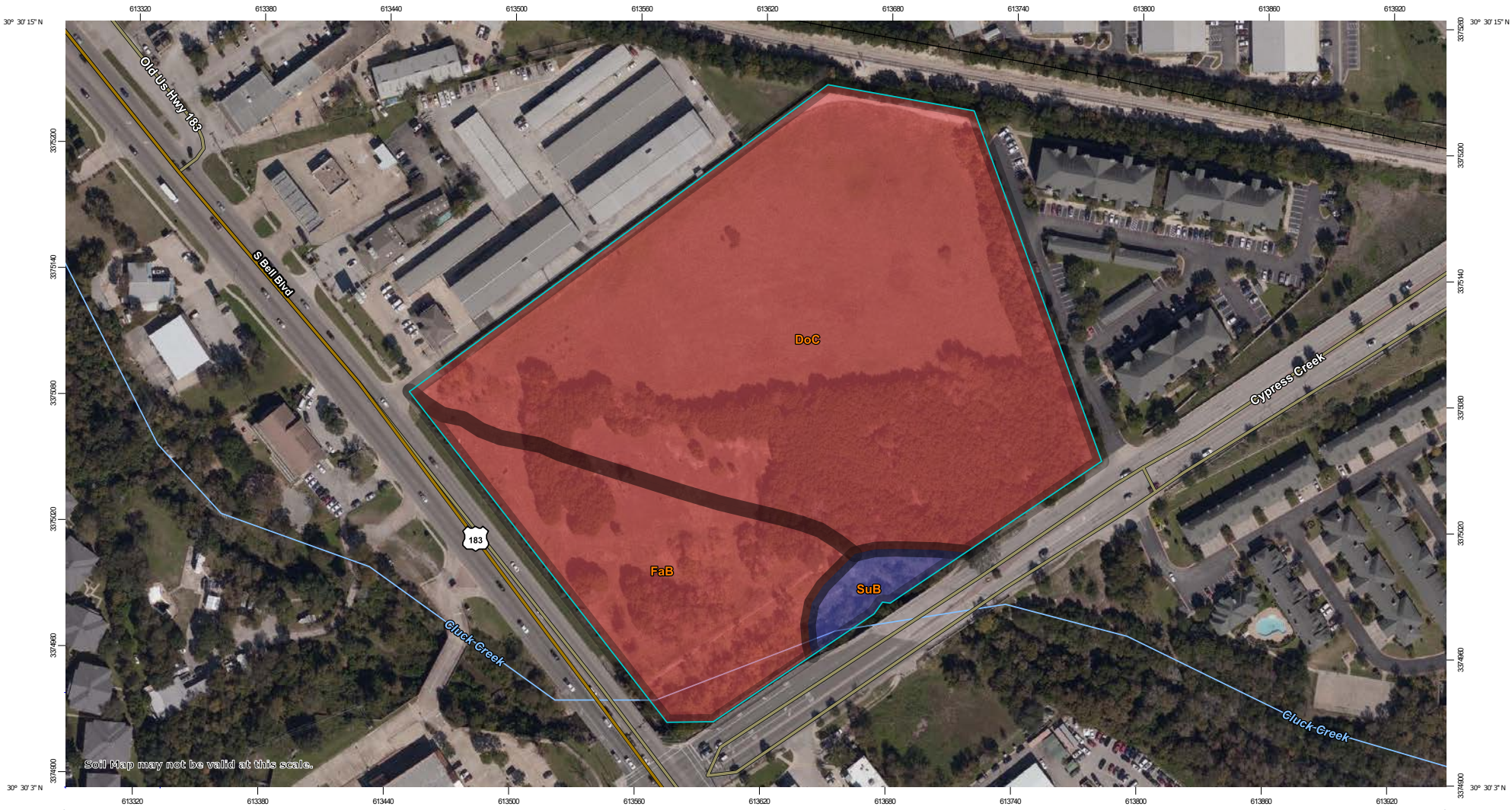
ROAD CLASSIFICATION

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

LEANDER, TX
2019

NSN. 7643016396981
NGA REF NO. USGSX24K25238

Hydrologic Soil Group—Williamson County, Texas
(CSW)



Map Scale: 1:1,780 if printed on B landscape (17" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Texas
Survey Area Data: Version 19, Sep 15, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 27, 2018—Nov 16, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DoC	Doss silty clay, moist, 1 to 5 percent slopes	D	10.8	74.5%
FaB	Fairlie clay, 1 to 2 percent slopes	D	3.3	22.7%
SuB	Sunev silty clay loam, 1 to 3 percent slopes	B	0.4	2.8%
Totals for Area of Interest			**14.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

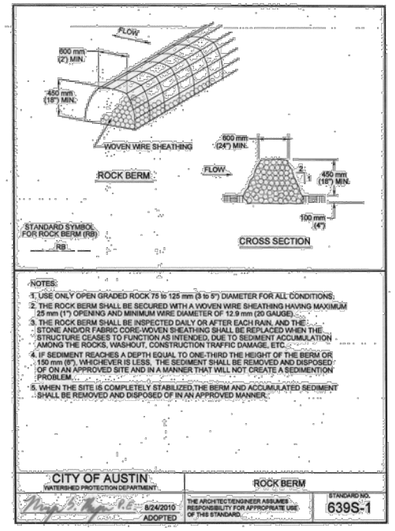
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

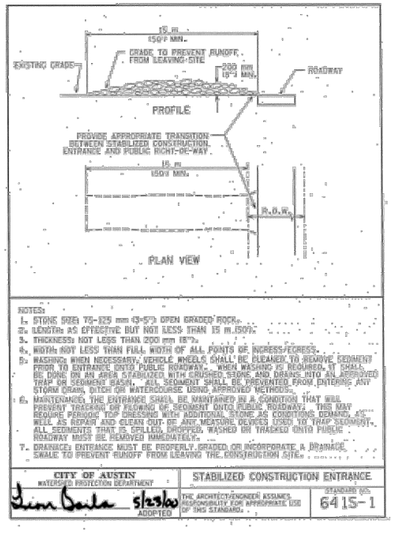
Rating Options

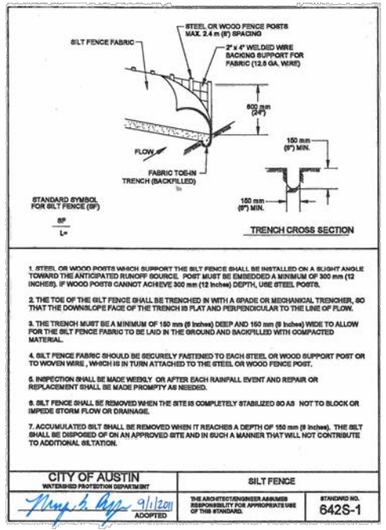
Aggregation Method: Dominant Condition

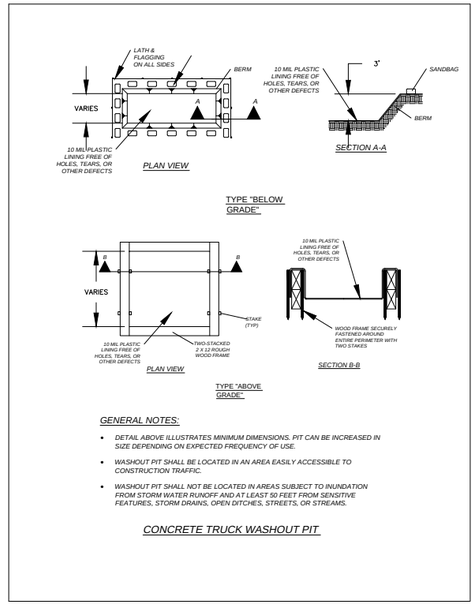
Component Percent Cutoff: None Specified

Tie-break Rule: Higher









CONCRETE TRUCK WASHOUT PIT
SCALE: N.T.S.

GRATE INLET PROTECTION MAT
SCALE: N.T.S.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS
ADD BENCHMARKS HERE

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

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/13/2019

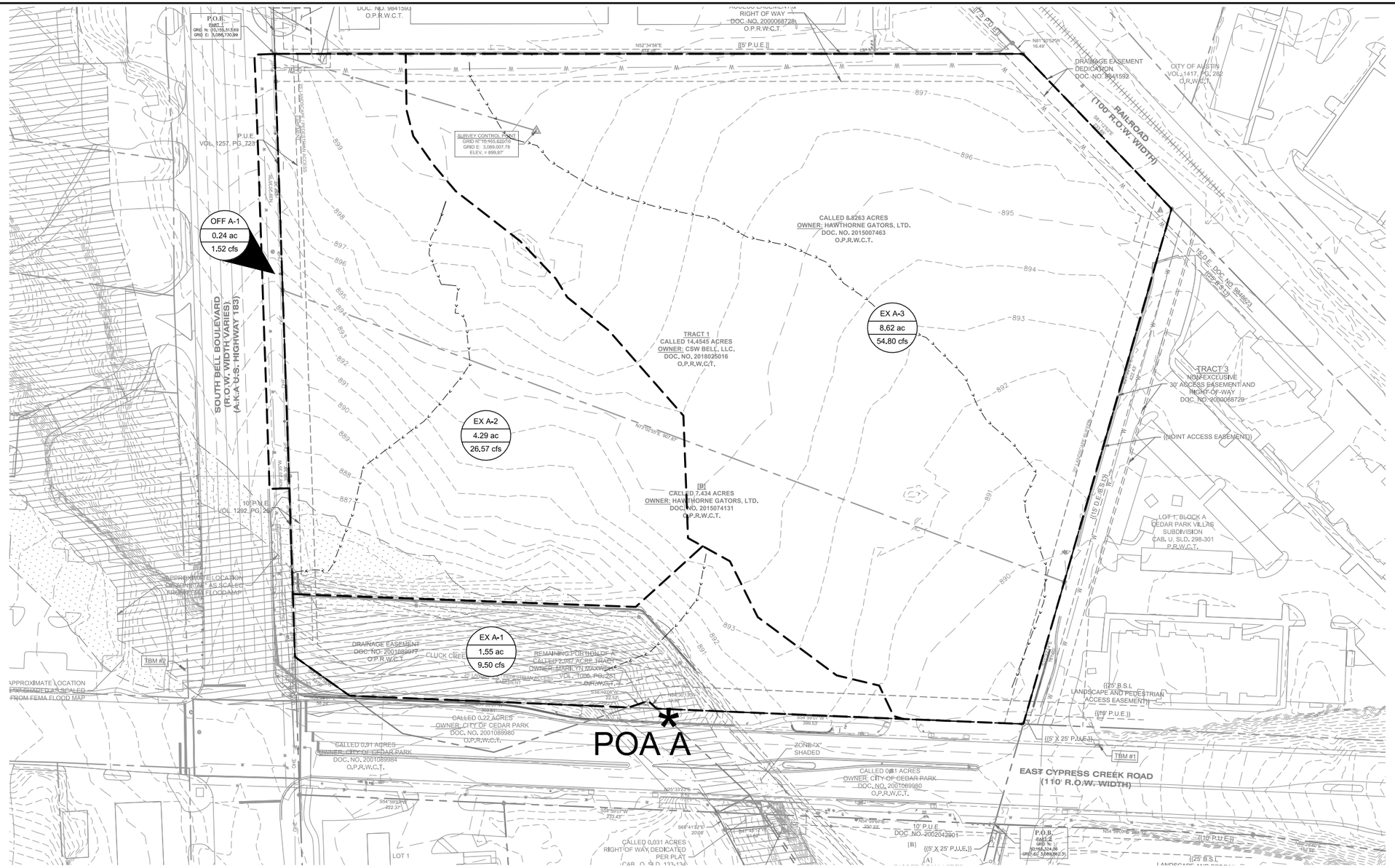
KHA PROJECT	069265601
DATE	SEPTEMBER 2019
SCALE:	AS SHOWN
DESIGNED BY:	BMW
DRAWN BY:	TJO
CHECKED BY:	JMW

EROSION CONTROL DETAILS

CSW
BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
8 OF 25

SD-19-00023



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR

EXISTING CONDITIONS

EX A-1 | EX A-2 | EX A-3 | OFF A-1 → POA A

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - EXISTING

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW								TOTAL Tc** (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
						P-2yr24hr 3.44 IN				Grass Surface				Channel Flow											
						N	L (ft)	S (ft/ft)	Tt(min)	L (ft)	V (fps)	S (ft/ft)	Tt (min)	L (ft)	V (fps)	a ($ft^{\wedge}2$)	Pw (ft)	r	n	S (ft/ft)	Tt(min)					
EX A-1	67341.69	1.55	0.00	0.0%	77.00	0.24	100.00	0.025	**12.59**	430.34	2.87	0.032	**2.50**	0.00	-			-		-	**0.00**	**15.10**	**2.34**	**5.07**	**7.23**	**10.70**
EX A-2	187021.21	4.29	1283.94	0.0%	77.00	0.24	100.00	0.030	**11.70**	81.09	8.09	0.252	**0.17**	0.00	-			-		-	**0.00**	**11.87**	**7.06**	**15.43**	**21.51**	**31.84**
EX A-3	375275.65	8.62	13322.90	3.6%	77.75	0.24	100.00	0.019	**14.05**	950.98	1.74	0.012	**9.13**	0.00	-			-		-	**0.00**	**23.18**	**11.56**	**24.22**	**34.96**	**52.84**
OFF A-1	10244.45	0.24	547.63	5.3%	78.12	0.01	100.00	0.020	**1.34**	0.00	-	-	**0.00**	0.00	-			-		-	**0.00**	**5.00**	**0.49**	**1.04**	**1.37**	**1.98**

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	19.65	42.43	61.81	92.56

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

ADD BENCHMARKS HERE

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

No.	REVISIONS	DATE	BY

Kimley»Horn
10814 JOLLYVILLE ROAD AVALLON IV SUITE 300 AUSTIN, TX 78759
PHONE: 512-418-1771 FAX: 512-418-1791
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TBPE Firm No. 928

JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/3/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

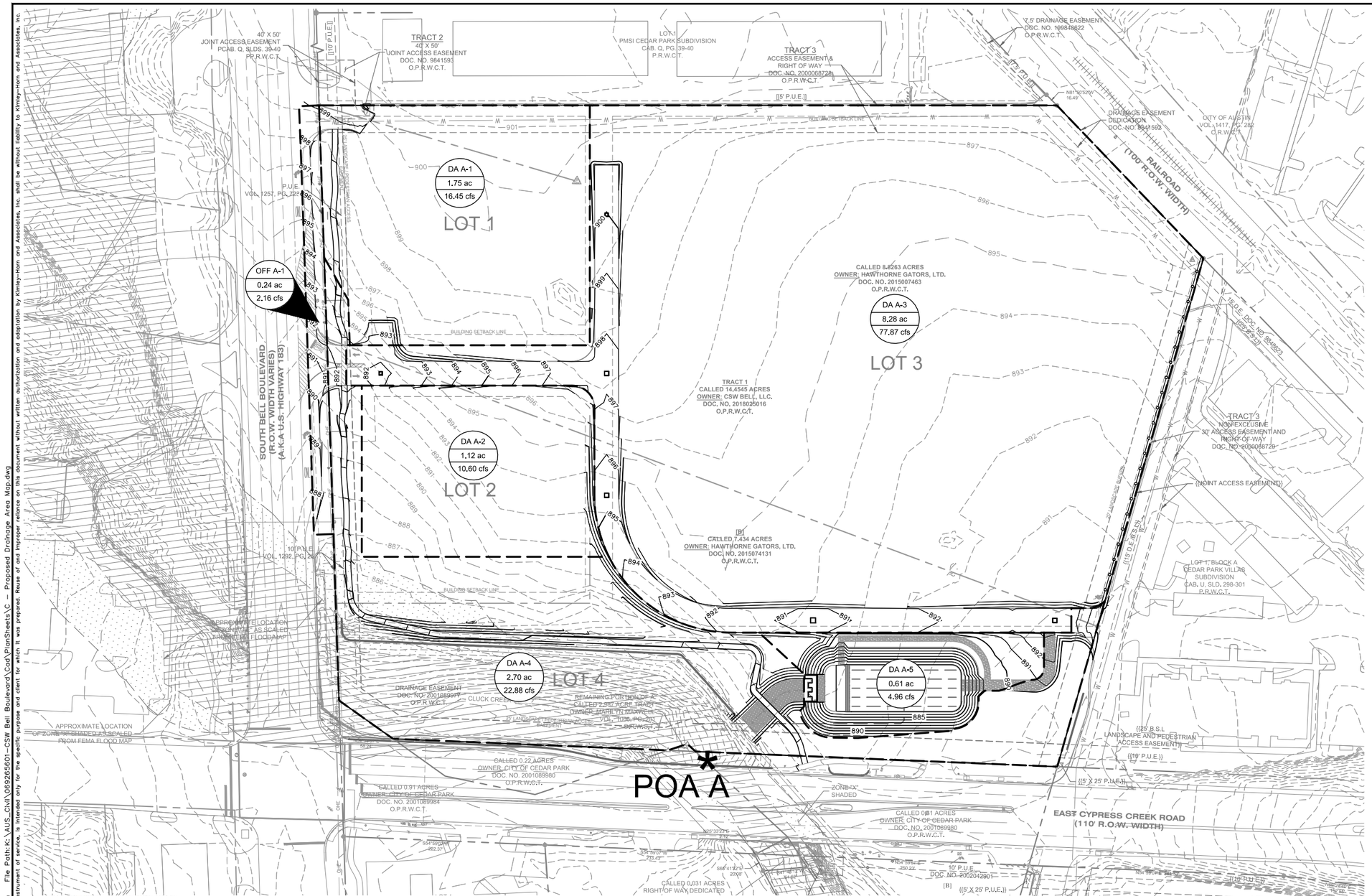
EXISTING DRAINAGE AREA MAP

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
17 OF 25

SD-19-00023



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
A-1	INLET NUMBER
	PROPERTY LINE
	PROPOSED STORM DRAIN LINE
	EXISTING STORM DRAIN LINE
	PROPOSED DRAINAGE DIVIDE
	PROPOSED STORM DRAIN INLET
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN HEADWALL
	PROPOSED FLOW DIRECTION
555	PROPOSED CONTOUR
555	EXISTING CONTOUR

PROPOSED CONDITIONS

DA A-1 | DA A-2 | DA A-3 | DA A-5 | DA A-4 | OFF A-1

↓

WATER QUALITY POND

↓

POA A

CSW BELL BOULEVARD

DRAINAGE CALCULATIONS - SCS METHOD - PROPOSED

DRAINAGE AREA	AREA (SF)	AREA (AC)	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (%)	WEIGHTED CURVE NUMBER (CN)	SHEET FLOW P-2yr24hr 3.44 IN: N	L (ft)	S (ft/ft)	Tt(min)	SHALLOW CONCENTRATED FLOW: Grass Surface: L (ft)	V (fps)	S (ft/ft)	Tt (min)	CHANNEL FLOW: Channel Flow: L (ft)	V (fps)	a (ft^2)	Pw (ft)	r	n	S (ft/ft)	Tt(min)	TOTAL Tc[1] (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
DA A-1	76055.12	1.75	65156.11	85.7%	94.56	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.85	10.01	12.26	16.45
DA A-2	48687.87	1.12	48687.87	100.0%	98.00	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	3.94	6.54	7.95	10.60
DA A-3	360515.37	8.28	297310.26	82.5%	93.79	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	27.32	47.17	57.86	77.81
DA A-4	117645.78	2.70	9009.75	7.7%	78.61	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	5.69	12.06	15.87	22.88
DA A-5	26734.41	0.61	702.62	2.6%	74.63	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	1.09	2.49	3.36	4.96
OFF A-1	10244.45	0.24	5469.12	53.4%	88.21	Tc assumed to be less than 5 minutes in fully developed condition.																5.00	0.68	1.26	1.57	2.16

*Per City of Austin Drainage Criteria Manual, minimum T_c = 5 min

*For DA A-2 the maximum allowed impervious cover for Lot 2 exceeds the total area of DA A-2 (feasible area of capture for this lot). To be conservative in the analysis the assumed impervious cover for DA A-2 is 100%

	Q_2	Q_{10}	Q_{25}	Q_{100}
POA A	44.51	79.19	98.29	134.57

		Q_2	Q_{10}	Q_{25}	Q_{100}
EXISTING	POA	19.65	42.43	61.81	92.56
PROPOSED	POA	44.51	79.19	98.29	134.57

MAX IMPERVIOUS COVER PER LOT	AREA	%	SF
LOT 1	76654.250	85%	65156.1125
LOT 2	66708.770	85%	56702.4545
LOT 3	371637.823	80%	297310.258

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS

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JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/13/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN | DESIGNED BY: BMW | T.JO
DRAWN BY: | CHECKED BY: JMW

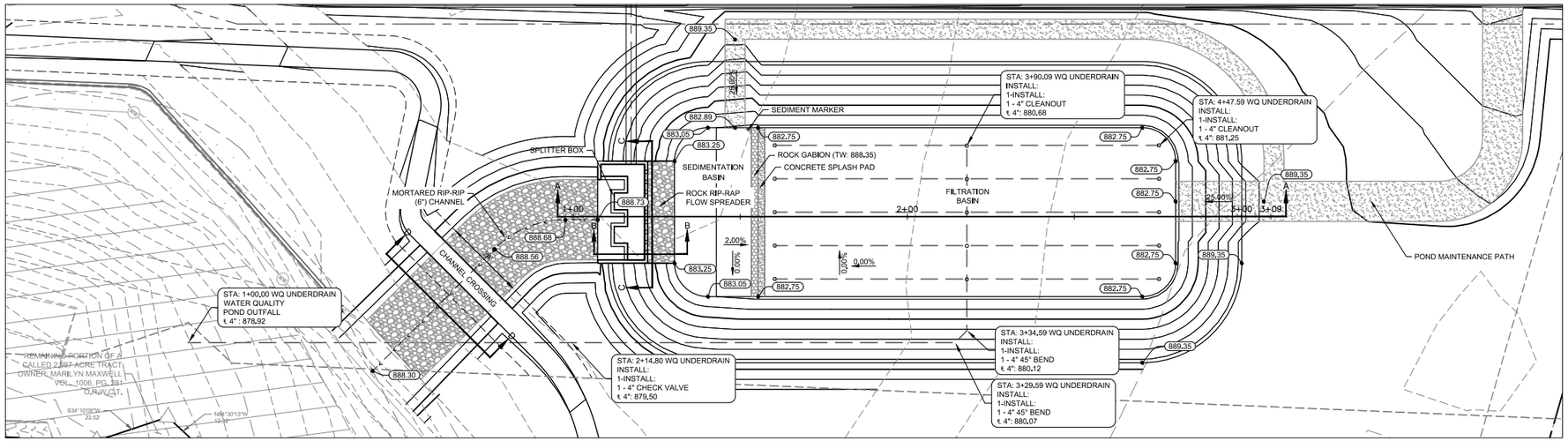
PROPOSED DRAINAGE AREA MAP

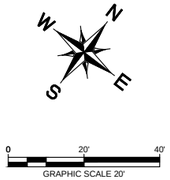
CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

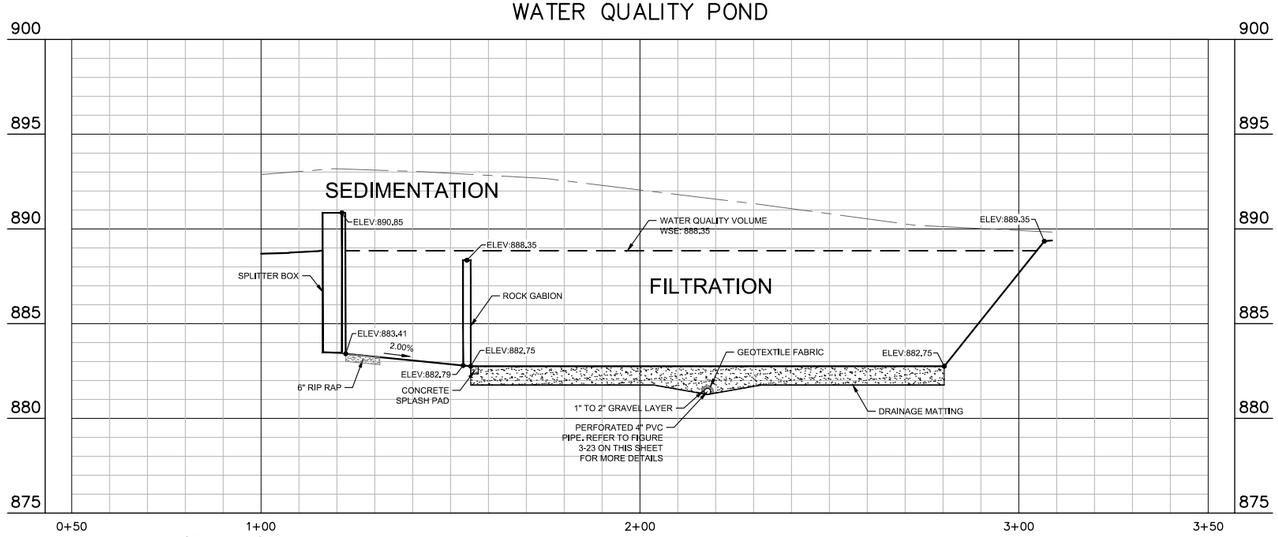
SHEET NUMBER
18 OF 25

SD-19-00023

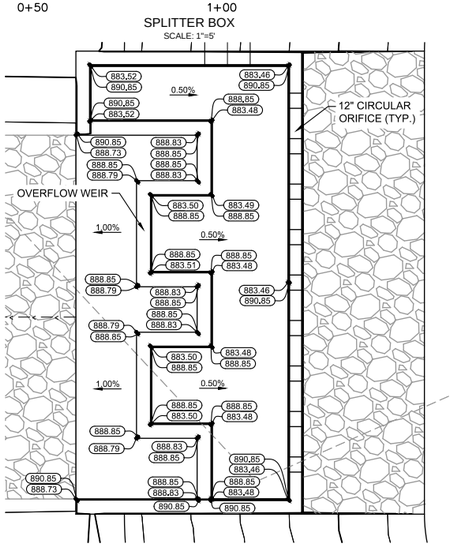


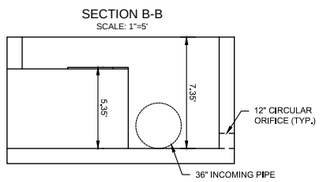


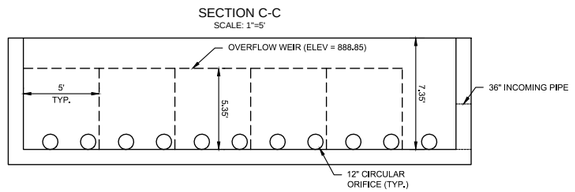
WATER QUALITY POND

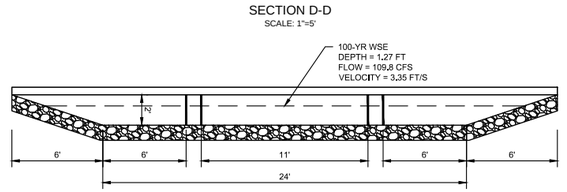


WATER QUALITY POND STAGE STORAGE TABLE					
CONTOUR ELEVATION (FT)	CONTOUR AREA (FT²)	DEPTH (FT)	INCREMENTAL VOLUME (FT³)	CUMULATIVE VOLUME (FT³)	
882.75	6376.74	0.00	0.00	0.00	
883.00	7142.50	0.25	1,689.91	1,689.91	
884.00	9094.00	1.25	8,118.25	9,808.16	
885.00	10286.09	2.25	9,690.05	19,498.20	
886.00	11534.39	3.25	10,910.24	30,408.44	
887.00	12838.89	4.25	12,186.64	42,595.08	
887.50	13512.22	4.75	6,587.78	49,182.86	
888.00	14200.33	5.25	6,928.14	56,111.00	
888.85	15413.15	6.10	12,585.73	68,696.72	WQV
889.00	15632.78	6.25	2,328.44	71,025.17	
889.35	16152.17	6.60	5,562.37	76,587.54	









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BENCHMARKS

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11/13/2019

KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

POND PLAN

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
19 OF 25

SD-19-00023

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bell Boulevard Commercial
Date Prepared: 11/14/2019

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

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

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

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

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

County =	Williamson	
Total project area included in plan * =	14.69	acres
Predevelopment impervious area within the limits of the plan * =	0.35	acres
Total post-development impervious area within the limits of the plan* =	9.79	acres
Total post-development impervious cover fraction * =	0.67	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	8217	lbs.

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

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

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	11.75	acres
Predevelopment impervious area within drainage basin/outfall area =	0.34	acres
Post-development impervious area within drainage basin/outfall area =	9.45	acres
Post-development impervious fraction within drainage basin/outfall area =	0.80	
$L_{M\ THIS\ BASIN}$ =	7929	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Sand Filter
Removal efficiency = 89 percent

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

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

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

A_C =	11.75	acres
A_I =	9.45	acres
A_P =	2.30	acres
L_R =	9347	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 8217 lbs.

F = 0.88

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

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.63	
On-site Water Quality Volume =	40291	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	8058	
Total Capture Volume (required water quality volume(s) x 1.20) =	48349	cubic feet

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

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.1	in/hr	Enter determined permeability rate or assumed value of 0.1
Irrigation area =	NA	square feet	
	NA	acres	

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

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = 48349 cubic feet

Minimum filter basin area = 2238 square feet

Maximum sedimentation basin area =	20145	square feet For minimum water depth of 2 feet
Minimum sedimentation basin area =	5036	square feet For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = 48349 cubic feet

Minimum filter basin area = 4029 square feet

Maximum sedimentation basin area =	16116	square feet For minimum water depth of 2 feet
Minimum sedimentation basin area =	1007	square feet For maximum water depth of 8 feet

WATER QUALITY POND
OVERFLOW WEIR DESIGN

Provided Overflow Elevation	=	888.85
Top of Box Elevation	=	890.85

Using the weir flow equation:
$Q = C*L*H^{(3/2)}$

Q = 100 year developed flow into splitter box (cfs)		109.8
C = Weir coefficient		3.00
L = Width of weir (feet)		49.0
H = Depth of flow (feet)		0.87
Max. WSE_{100} in Box	=	889.67
Splitter Box Freeboard (feet)	=	1.18

POND DRAW DOWN CALCULATIONS

Minimum Drawdown Time = 48 hours =	172,800 seconds	
Pond volume to be removed =	68,697 ct	
Volume removed per second =	0.40 cfs	
Orifice equation is "Q = 0.6*A*(2*g*h)^.5		
A = area of orifice g = 32.2		
Water Quality Elevation =	888.85	
Underdrain Outfall Elevation =	878.67	
h = orifice head =	10.176	
$A = Q/(0.6*(2*g*h)^{.5}) = \pi*r^2$ =	0.026 sf	
r =	0.091 ft	
r =	1.09 in	
d =	2.2 in	Calculated
d=	2.0 in	Provided

SPLITTER BOX ORIFICE CALCULATIONS TO SEDIMENTATION BASIN

25-YR PEAK FLOW RATE = 81.41 CFS
ORIFICE FLOWLINE ELEVATION = 883.46 FT (MSL)
WATER QUALITY ELEVATION = 888.85 FT (MSL)

ORIFICE EQUATION: $Q = N C A \sqrt{2GH}$
WHERE: Q = ORIFICE FLOW (CFS)
C = ORIFICE COEFFICIENT (0.60)
A= AREA OF ORIFICE (FT)
G = GRAVITATIONAL CONSTANT (32.2 FT/S²)
H - HEAD ON ORIFICE FROM CENTERLINE (FT)
N = NUMBER OF ORIFICES

H = 4.89 FT

N = 9.00
A = 1.00 FT
C = 0.60
G = 32.20 FT/SEC2
Q (PROVIDED) = 95.83

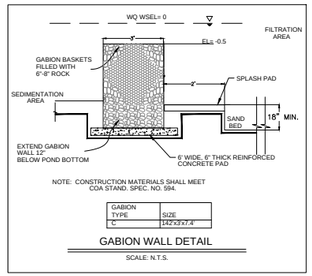
25 YEAR VELOCITY AFTER LEVEL SPREADER

MANNING'S EQUATION: $Q = \left\{\frac{1.49}{n}\right\} A R^{2/3} \sqrt{S}$

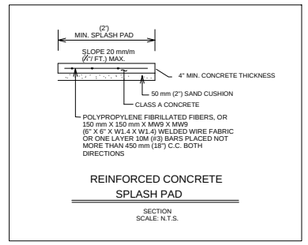
WHERE Q = ORIFICE FLOW (CFS)
n = MANNING'S ROUGHNESS COEFFICIENT
A= AREA OF CHANNEL (FT²)
R= HYDRAULIC RADIUS (FT)
S = SLOPE (FT/FT)
d = NORMAL DETPH (FT)

Q = 81.41 CFS
n = 0.069 (6" RIP-RAP)
w = 31 FT
$A = w \times d$ FT²
$R = \frac{w \times d}{w + 2d}$ FT
S = 0.02

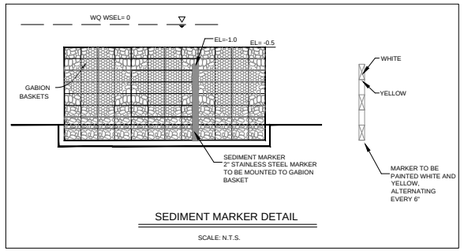
CALCULATING FOR d = 0.96 FT
$V = \left\{\frac{Q}{A}\right\}$
V = 1.739 FT/S²



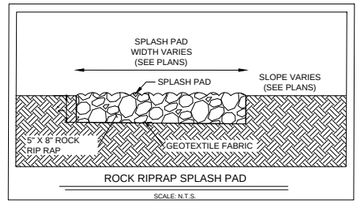
GABION WALL DETAIL
SCALE: N.T.S.



REINFORCED CONCRETE SPLASH PAD
SECTION
SCALE: N.T.S.



SEDIMENT MARKER DETAIL
SCALE: N.T.S.



ROCK RIPRAP SPLASH PAD
SCALE: N.T.S.

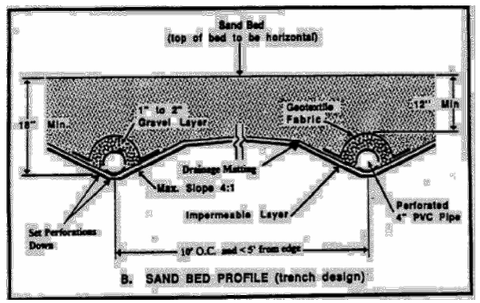


Figure 3-23 Schematic of Sand Bed Profile

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

BENCHMARKS
ADD BENCHMARKS HERE

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TBPE Firm No. 928

JOEL M. WIXSON 116167 LICENSED PROFESSIONAL ENGINEER 11/13/2019

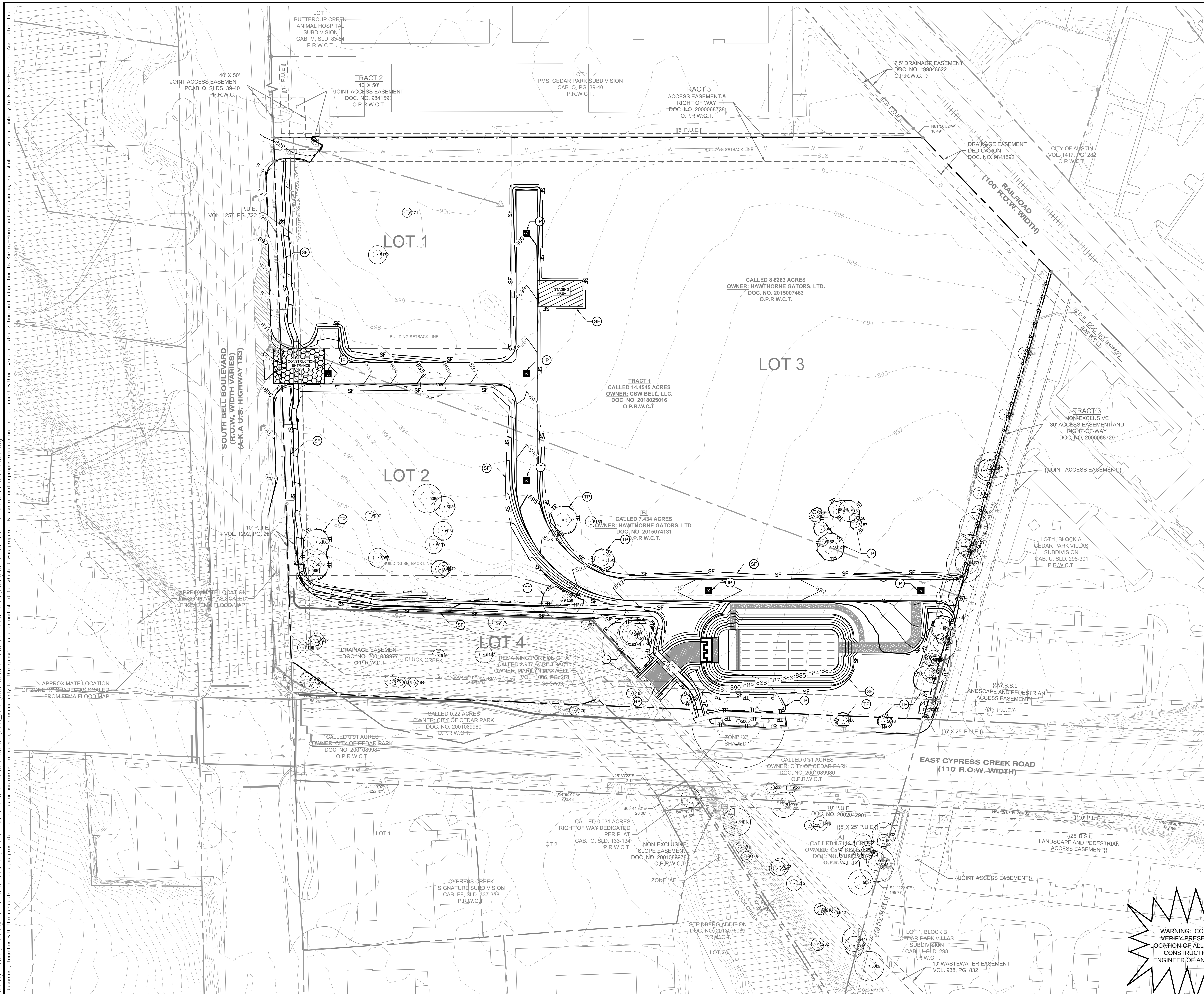
KHA PROJECT 069265601
DATE SEPTEMBER 2019
SCALE: AS SHOWN
DESIGNED BY: BMW
DRAWN BY: TJO
CHECKED BY: JMW

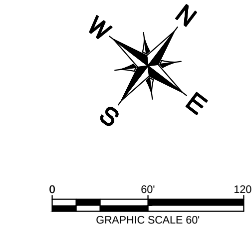
WATER QUALITY CALCULATIONS AND DETAILS

CSW
BELL BOULEVARD
CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
20 OF 25

SD-19-00023





LEGEND

Symbol	Description
SF	SILT FENCE
TP	TREE PROTECTION
IP	PROPOSED INLET PROTECTION
CE	CONSTRUCTION ENTRANCE
RB	ROCK BERM
450	EXISTING CONTOURS
450	PROPOSED CONTOURS
	LIMITS OF CONSTRUCTION AREA
	TREE TO REMAIN
	TREE TO REMOVED

NOTES:

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF CEDAR PARK RULES AND REGULATIONS
4. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURE DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
5. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
6. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
7. ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED BY THE CITY DURING CONSTRUCTION.
8. REFERENCE EROSION CONTROL NOTES AND DETAILS ON SHEET 7.
9. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING [ECM 1.4.4.B.3, SECTION 5, I.]. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY [ECM 1.4.4.D.4].
10. ALL DISTURBED AREAS TO BE RE-VEGETATED PER CITY OF AUSTIN STANDARDS.
11. SEE LANDSCAPE ARCHITECT PLANS FOR TREE PRESERVATION PLAN AND TREE LIST.

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STATE OF TEXAS
JOEL M. WIXSON
116167
LICENSED PROFESSIONAL ENGINEER
11/13/2019

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069265601	SEPTEMBER 2019	AS SHOWN	BMW	TJO	JMW

EROSION CONTROL PLAN

CSW BELL BOULEVARD

CITY OF CEDAR PARK
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
7 OF 25

SD-19-00023

APPENDIX B

CONSTRUCTION ACTIVITY SCHEDULE

Construction Activity Schedule

Activities	Start Date	Finish Date
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

*Construction activity sequences for linear projects may be conducted on a rolling basis. As a result, construction activities may be at different stages at different locations in the project area. The Contractor is required to complete and update the schedule and adjust as necessary.

APPENDIX C

BEST MANAGEMENT PRACTICE MEASURES AND CONTROLS

Best Management Practice Measures and Controls

Best Management Practice (BMP)	In Use	Maintained Post Construction?
Interceptor Swale		
Diversion Dike		
Pipe Slope Drain		
Vegetation		
Mulching		
Erosion Control Blankets		
Channel Protection		
Dust Control		
Silt Fence		
Organic Filter Berm		
Triangular Sediment Filter Dike		
Inlet Protection		
Stone Outlet Sediment Trap		
Sediment Basin		
Check Dam		
Temporary Sediment Tank		
Stabilized Construction Entrance		
Wheel Wash		
Debris and Trash Management		
Chemical Management		
Concrete Waste Management		
Concrete Sawcutting Waste Management		
Sandblasting Waste Management		
Lime Stabilization Management		
Sanitary Facilities		
Other*		
Other*		

*If another BMP is being used, include the BMP information in Appendix D.

APPENDIX D

BEST MANAGEMENT PRACTICE CHECKLIST AND FACT SHEETS

EROSION AND SEDIMENT CONTROL CHECKLIST

Instructions: Check each item and fill in the blanks below to evaluate compliance for each drainage area and location.

Stabilization Practices:

☐ Stabilization will be initiated on all disturbed areas where construction activity will not occur for a period of more than 21 calendar days by the 14th day after construction activity has permanently or temporarily ceased. Stabilization measures to be used include:

- ☐ Temporary Seeding
- ☐ Permanent Seeding
- ☐ Mulching
- ☐ Sod Stabilization
- ☐ Geotextiles
- ☐ Other _____

Structural Practices

☐ Flows from upstream areas will be diverted from exposed soils to the degree attainable. Measures to be used include:

- ☐ Earth Dike
- ☐ Drainage Swale
- ☐ Interceptor Dike and Swale
- ☐ Pipe Slope Drain
- ☐ Other _____

For Drainage locations serving less than 10 disturbed acres, Sediment *Basin will be installed and will include:*

- ☐ Sediment Trap
- ☐ Silt Fence or equivalent along all sideslopes & downstream boundaries

For Drainage locations serving 10 or more disturbed acres, a Sediment Basin will be installed (See Appendix N), if a Sediment Basin is not attainable on-site, Sediment Controls will be installed & will include:

- ☐ Sediment Trap
- ☐ Silt Fence or equivalent along all sideslopes & downstream boundaries
- ☐ Sediment Basin

FINAL STABILIZATION / TERMINATION CHECKLIST

1. All soil disturbing activities are complete.

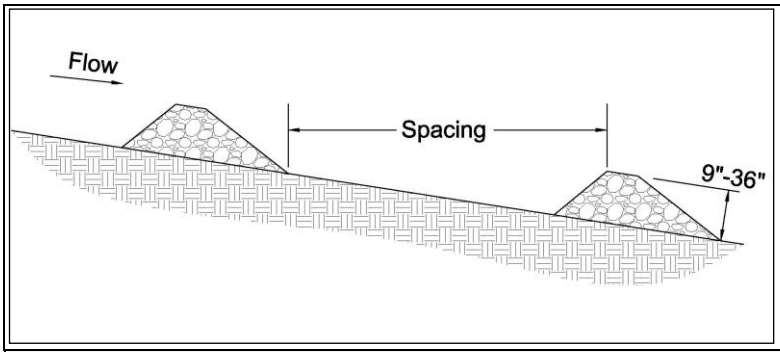
2. Temporary erosion and sediment control measures have been, or will be, removed at an appropriate time.

3. All areas of the construction site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed.

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 ⅓ 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 ¾ 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

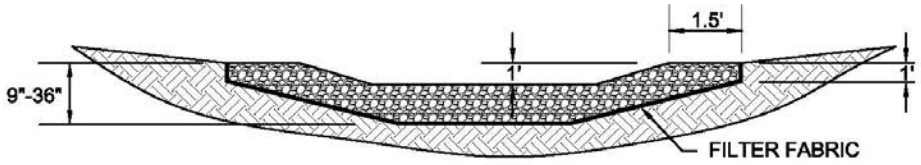
Check dams should be inspected regularly (at least as often as required by the TPDES Construction General Permit). Silt must be removed when it reaches approximately 1/3 the height of the dam or 12 inches, whichever is less. Inspectors should monitor the edges of the dam where it meets the sides of the 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.

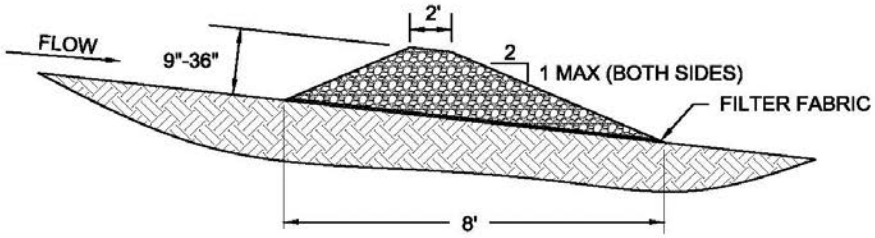
2.1.6 Example Schematics

The following schematics are example applications of the construction control. They are intended to assist in understanding the control's design and function.

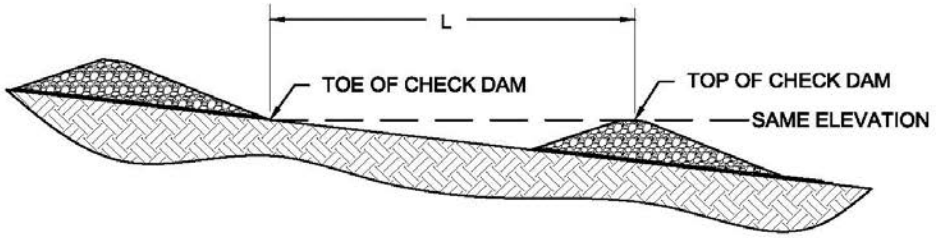
The schematics are **not for construction**. They may serve as a starting point for creating a construction detail, but they must be adapted for the site by the designer. Dimensions and notes appropriate for the application must also be added by the designer.



ROCK CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.



CROSS SECTION OF ROCK CHECK DAM
N.T.S.

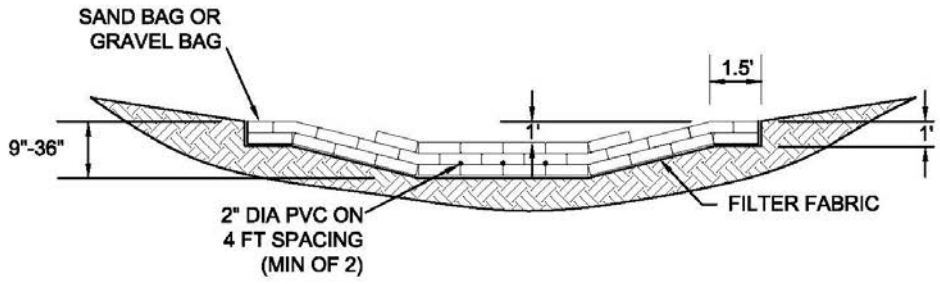


SPACING BETWEEN ROCK CHECK DAMS
N.T.S.

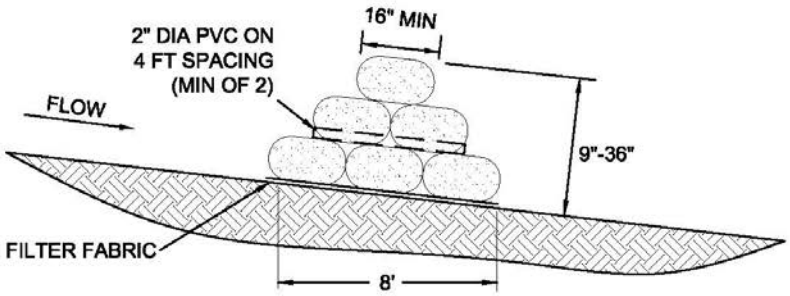
NOTES: ACTUAL DIMENSIONS OF THE CHECK DAMS SHALL BE DESIGNED BASED ON FLOW CONDITIONS IN THE DRAINAGE SWALE OR DITCH. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THE CHECK DAMS.

- HEIGHT OF CHECK DAMS BASED ON SWALE OR DITCH DIMENSIONS AND FLOW CONDITIONS.
- SPACING OF CHECK DAMS BASED ON GRADE OF THE SWALE OR DITCH. TOP OF DOWNSTREAM DAM SHALL BE AT SAME ELEVATION AS TOE OF UPSTREAM DAM

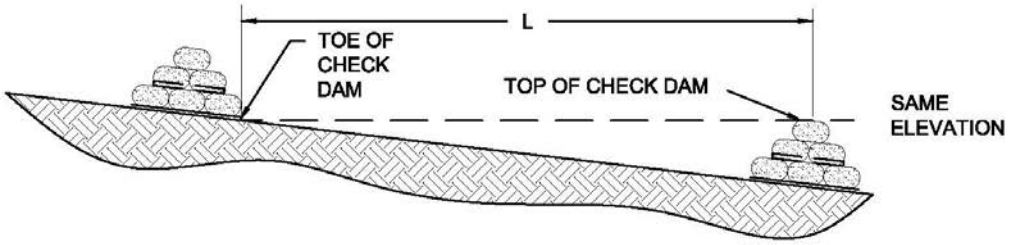
Figure 2.1 Schematics of Rock Check Dams
(Source: Modified from Stormwater Management Manual for Western Washington)



ROCK BAG CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.



CROSS SECTION OF ROCK BAG CHECK DAM
N.T.S.

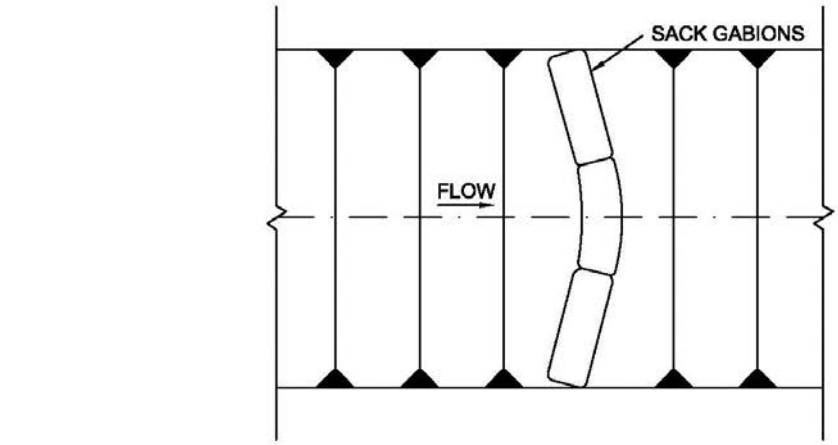


SPACING BETWEEN ROCK BAG CHECK DAMS
N.T.S.

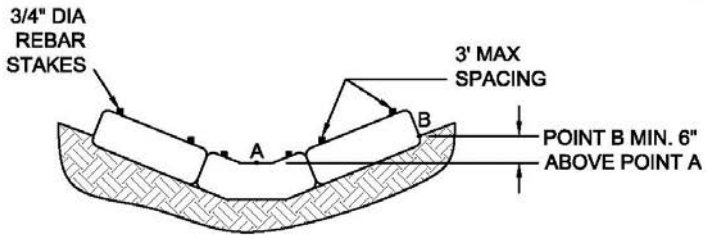
NOTES: ACTUAL DIMENSIONS OF THE CHECK DAMS SHALL BE DESIGNED BASED ON FLOW CONDITIONS IN THE DRAINAGE SWALE OR DITCH. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THE CHECK DAMS.

- HEIGHT OF CHECK DAMS BASED ON SWALE OR DITCH DIMENSIONS AND FLOW CONDITIONS.
- SPACING OF CHECK DAMS BASED ON GRADE OF THE SWALE OR DITCH. TOP OF DOWNSTREAM DAM SHALL BE AT SAME ELEVATION AS TOE OF UPSTREAM DAM.

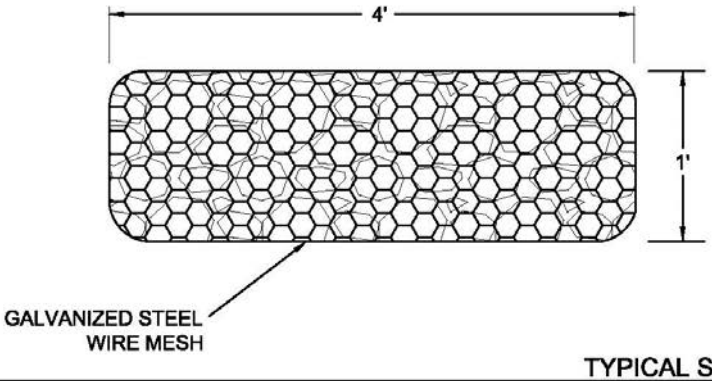
Figure 2.2 Schematics of Rock Bag Check Dams



SACK GABION CHECK DAM PLAN VIEW
N.T.S.



SACK GABION CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.

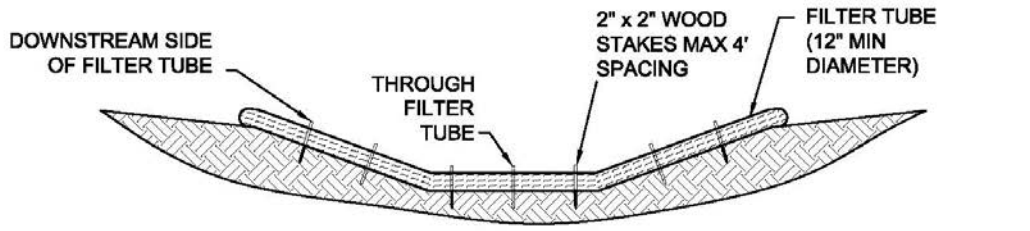


TYPICAL SACK GABION
N.T.S.

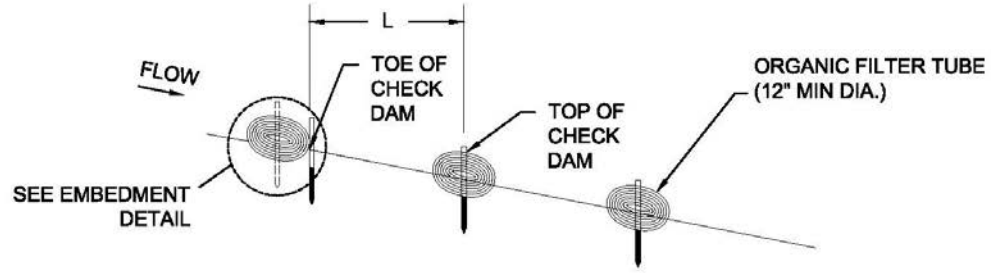
NOTES: ACTUAL DIMENSIONS OF THE CHECK DAMS SHALL BE DESIGNED BASED ON FLOW CONDITIONS IN THE DRAINAGE SWALE OR DITCH. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THE CHECK DAMS.

- HEIGHT OF CHECK DAMS BASED ON SWALE OR DITCH DIMENSIONS AND FLOW CONDITIONS.
- SPACING OF CHECK DAMS BASED ON GRADE OF THE SWALE OR DITCH. TOP OF DOWNSTREAM DAM SHALL BE AT SAME ELEVATION AS TOE OF UPSTREAM DAM.

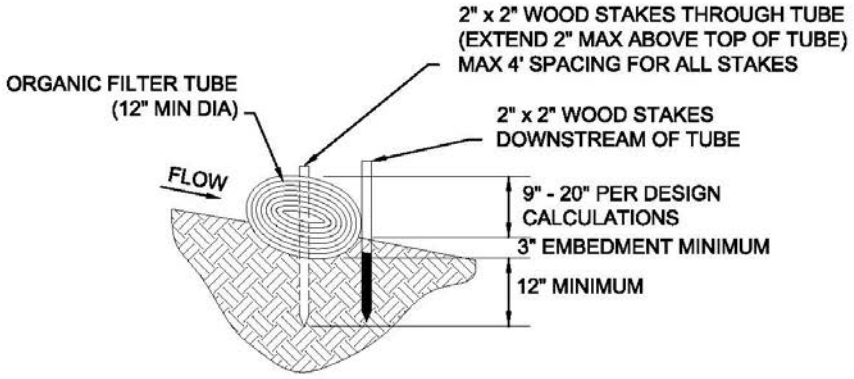
Figure 2.3 Schematics of Sack Gabion Check Dams
(Source: Modified from Texas Department of Transportation Detail Sheet EC (2)-93)



ORGANIC FILTER TUBE CHECK DAM VIEW LOOKING UPSTREAM
N.T.S.



ORGANIC FILTER TUBE CHECK DAM PROFILE
N.T.S.



EMBEDMENT DETAIL FOR ORGANIC FILTER TUBE CHECK DAM
N.T.S.

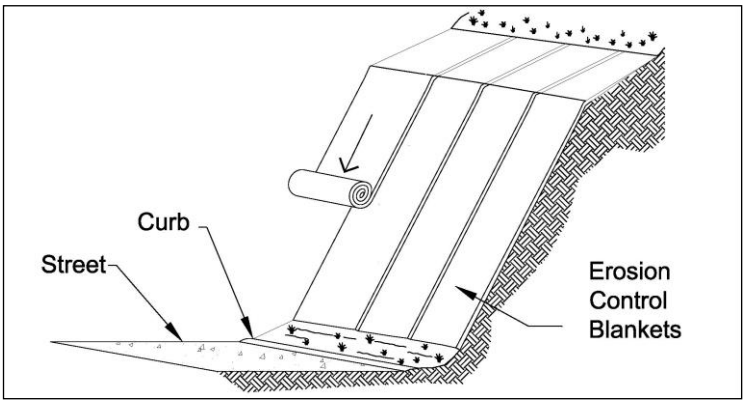
NOTES: ACTUAL DIMENSIONS OF THE CHECK DAMS SHALL BE DESIGNED BASED ON FLOW CONDITIONS IN THE DRAINAGE SWALE OR DITCH. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THE CHECK DAMS.

- HEIGHT OF CHECK DAMS BASED ON SWALE OR DITCH DIMENSIONS AND FLOW CONDITIONS.
- SPACING OF CHECK DAMS BASED ON GRADE OF THE SWALE OR DITCH. TOP OF DOWNSTREAM DAM SHALL BE AT SAME ELEVATION AS TOE OF UPSTREAM DAM.

Figure 2.4 Schematics of Organic Filter Tube Check Dams
(Source: Modified from City of Plano BMP S-7)

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 in 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.

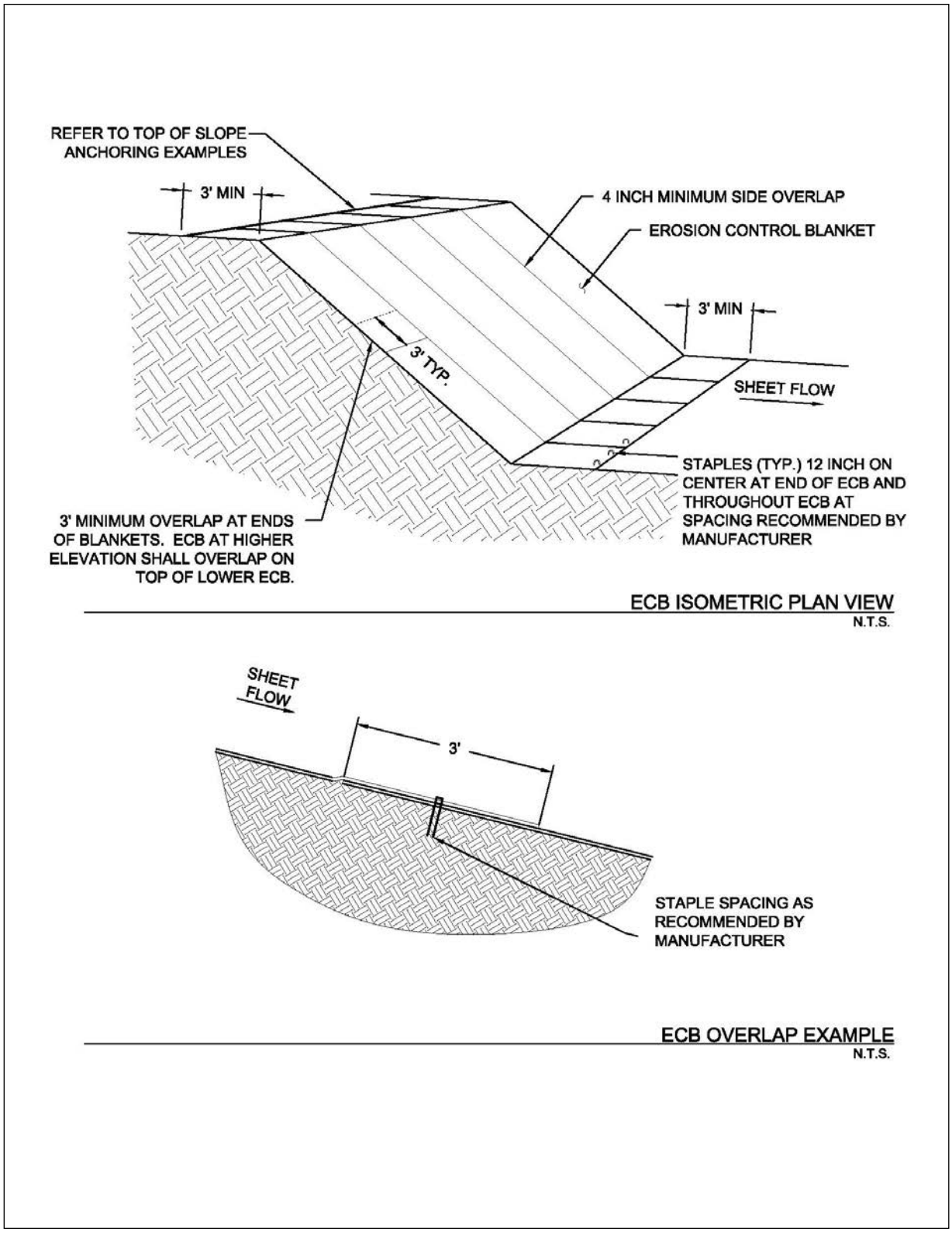
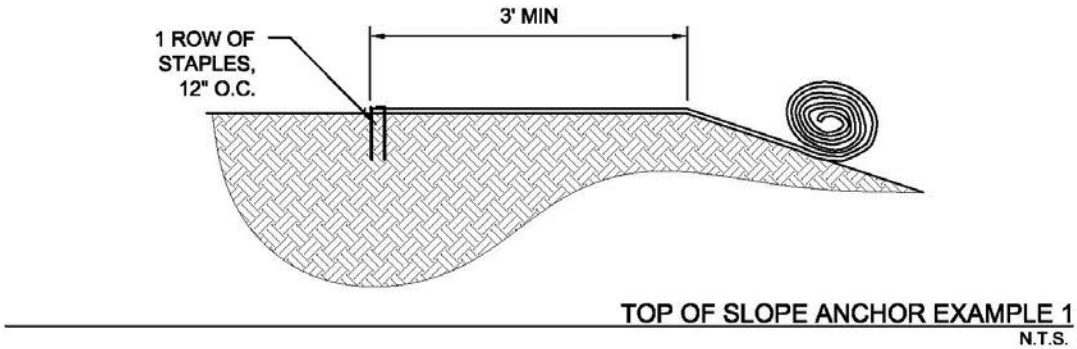
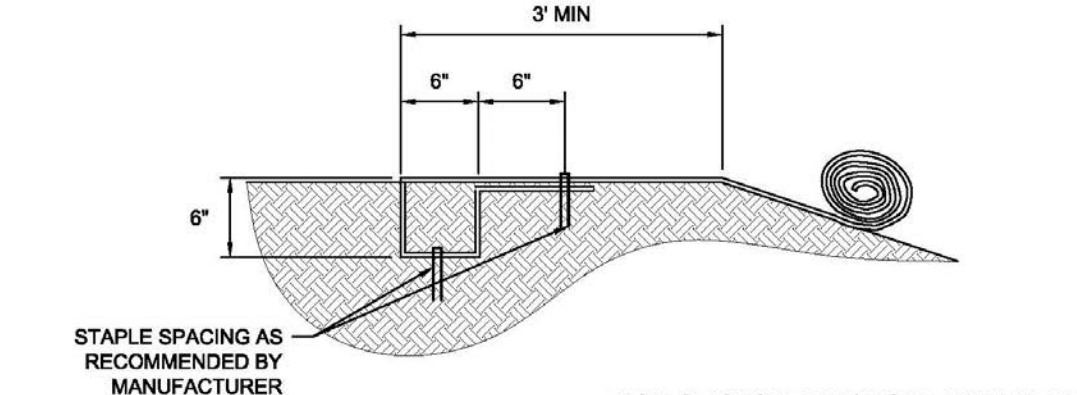


Figure 2.7 Schematics of Erosion Control Blankets



TOP OF SLOPE ANCHOR EXAMPLE 1
N.T.S.



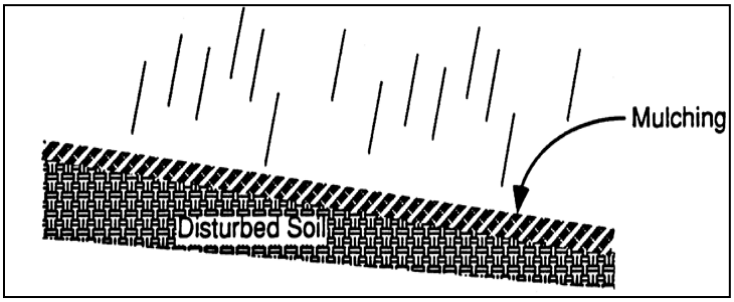
TOP OF SLOPE ANCHOR EXAMPLE 2
N.T.S.

NOTE: ANCHORING METHODS PROVIDED ARE EXAMPLES OF THE TYPE OF ANCHORING THE ECB MANUFACTURER MAY RECOMMEND. THERE ARE MORE THAN A DOZEN DIFFERENT TOP OF SLOPE ANCHORING METHODS BASED ON TYPE OF ECB, TYPE OF SOIL, SPECIFIED PERFORMANCE PERIOD, SLOPE STEEPNESS, ETC. ALWAYS FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR ANCHORING BASED ON THE SITE-SPECIFIC APPLICATION.

Figure 2.8 Anchor Examples for Erosion Control Blankets
(Sources: American Excelsior Company and Western Excelsior Corporation)

2.5 Mulching

Erosion Control



Description: Mulching is the application of a uniform layer of organic material over barren areas to reduce the effects of erosion from rainfall. Types of mulch include compost mixtures, straw, wood chips, bark, or other fibers. Commercialized surface treatments that combine straw or other mulch material with organic or inorganic soil binding systems are also available and are particularly useful on steep slopes.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Specify even, uniform application
- Thickness of 1 to 2 inches, depending on application
- Application criteria specific to type of mulch
- Anchor mulch on slopes of 3:1 to 1.5:1
- Do not use mulch on slopes steeper than 1.5:1

ADVANTAGES / BENEFITS:

- Provides immediate stabilization of bare areas
- May be used with seeding for final stabilization
- Decreases soil moisture loss
- Decreases velocity of sheet flow
- Reduces volume of sediment-laden flow

DISADVANTAGES / LIMITATIONS:

- Subject to removal by wind or water
- Results in lower soil temperature, which may yield longer seed germination periods
- Should not be applied within the ordinary high-water mark of natural surface waters or within the design flow depth of constructed ditches and channels

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Replace regularly in high traffic areas to maintain uniform thickness
- Maintain a stockpile of excess mulch at the site to repair problem spots

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=0.75-0.90

(Depends on coverage)

IMPLEMENTATION CONSIDERATIONS

- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes > 5%

Other Considerations:

- *Availability of materials for mulch*
- *Application depends on slope*

2.5.1 Primary Use

Mulch may be used by itself to temporarily stabilize bare areas or with seed to establish final stabilization of bare areas. Mulch protects the soil from erosion and moisture loss by lessening the effects of wind, water, and sunlight. It also decreases the velocity of sheet flow, thereby reducing the volume of sediment-laden water flow leaving the mulched area.

2.5.2 Applications

Mulch may be applied on most areas disturbed by construction that require surface protection including:

- Freshly seeded or planted areas;
- Disturbed areas at risk of erosion due to the time period being unsuitable for growing vegetation;
- Disturbed areas that are not conducive to vegetation for temporary stabilization; or
- Steep slopes of 3:1 to 1.5:1, provided the mulch is anchored to the soil by use of soil stabilizers, netting, or crimping.

Mulch is frequently applied with seeding for vegetation. In these cases, refer to *Section 2.9 Vegetation* for related criteria that may affect mulching.

Mulch may also be applied with commercially available polymers for soil surface treatment to bind the mulch with the soil. This method is particularly useful on steep slopes. Related criteria are available in *Section 2.7 Soil Surface Treatments*.

2.5.3 Design Criteria

General

- Specific design information is required for the use of this control. The designer shall specify the type of mulch to be used, the application rate and/or thickness, and the type of anchoring (if applicable) based on site conditions.
- Choice of mulch depends largely on slope and soil type, in addition to availability of materials.
- Netting, adhesive polymers, or other methods of anchoring the mulch are required on slopes of 3:1 to 1.5:1. Do not use mulch on slopes steeper than 1.5:1.
- Mulch should be applied in an even and uniform manner where concentrated water flow is negligible. Do not apply mulch within the ordinary high-water mark of natural surface waters or within the design flow depth of constructed ditches and channels.
- Hay should not be used as mulch.
- Organic mulches may be distributed by hand or by mechanical means, provided a uniform thickness is achieved.
- When mulch is used with vegetation for final stabilization, fertilization and soil treatment for vegetation establishment should be done prior to placement of mulch, with the exception of hydroseeding or when seed is distributed following straw mulch spread during winter months.
- Table 2.1 on the following page contains a summary of mulch types and general guidelines.

Table 2.1 Mulch Standards and Guidelines			
Mulch Material	*Quality Standards*	*Application Rates*	*Remarks*
Straw	Air-dried, free of mold and not rotten. Certified Weed Free.	1.5 to 2 tons per acre	Cost-effective when applied with adequate thickness. Straw must be held in place by crimping, netting, or soil stabilizer.
Chipped Site Vegetation	Should include gradation from fine to coarse to promote interlocking properties. Must be free of waste materials such as plastic bags, metal debris, etc.	10 to 12 tons per acre	Cost-effective method to dispose of vegetative debris from site. Best application is for temporary stabilization where construction will resume. Use cautiously on areas where vegetation will be established, as wood chips will deplete soil nitrogen.
Erosion Control Compost (Wood Chip and Compost Mixture)	Shall meet the Physical Requirements in Table 1 of TxDOT Special Specification 1001.	Approx. 10 tons per acre	Special caution is advised regarding the source and composition of wood mulches. Ensure compost is free of herbicides. Ensure wood chips are from unpainted and untreated wood.
Hydraulic Mulch	Must not contain sawdust, cardboard, paper, paper byproducts, plastics, or synthetics. No petroleum-based tackifiers.	Follow the manufacturer's recommendations. Application rate increases with slope steepness.	May be particularly effective on slopes steeper than 3:1. Ensure wood fibers are from unpainted and untreated wood.

Straw Mulch

- Straw mulch shall be free of weed and grass seed.
- Straw mulch shall be air-dried, free of mold, and not rotten.
- Straw fibers shall be a minimum of 4 inches and a maximum of 8 inches in length.
- Straw mulch must be anchored by using a tractor-drawn crimper to punch into the soil, by placing degradable netting above the mulch, or by application of a soil stabilizer (*Section 2.7 Soil Surface Treatments*).

Chipped Site Vegetation

- Chipped site vegetation is suitable mulch for temporary stabilization before construction will resume in an area of the construction site.
- Ensure the cleared vegetation is free of trash, litter, and debris prior to chipping.

- Chipped pieces shall be a minimum of 2 inches and a maximum of 6 inches in length.
- Chipped woody vegetation that is greater than 50% wood chips by volume may result in mulch that depletes nitrogen in the soil. It is useful as mulch for temporary stabilization where construction activity will resume and result in removal of the mulch. However, it should be used with care on areas where vegetation will be established for final stabilization.
- Chipped vegetation that is greater than 50 percent wood chips by volume may require treatment with a nitrogen fertilizer when used for mulch with seeding.
- Chipped vegetation that includes green matter will include seeds. It should not be used on areas that have specific landscaping requirements.

Erosion Control Compost (Wood Chip and Compost Mixture)

- Wood chip and compost mixture used for mulch shall meet the criteria for Erosion Control Compost in TxDOT Special Specification 1001.
- Wood chips for the mixture shall be less than or equal to 5 inches in length with 95 percent passing a 2 inch screen and less than 30 percent passing a 1 inch screen. Mulch should not contain chipped manufactured boards or chemically treated wood such as particleboard, railroad ties, or similar treated wood.
- Compost for the mixture shall meet the Physical Requirements specified in Table 1 of 2004 TxDOT Special Specification 1001, Compost. It must be free of herbicides and other chemicals.
- Mixing of the Erosion Control Compost into the soil surface is allowed when vegetation is established for final stabilization, except for drill seeding, in which case it is best to leave the mulch as an undisturbed top layer.

Hydraulic Mulch (Including Bonded Fiber Matrix)

- Hydraulic mulch shall consist of a mixture of shredded wood fiber and a stabilizing binder. The mulch must not contain sawdust, cardboard, paper or paper byproducts.
- Shredded wood fiber shall be long strand, whole wood fibers that are:
    - Minimum of 25 percent of fibers 3/8 inch long;
    - Minimum of 50 percent held on a No. 25 sieve;
    - Free from paint, printing ink, varnish, petroleum products, seed germination inhibitors; and
    - Free from synthetic or plastic materials.
- Mulch binders may be organic or inorganic polymers. Asphaltic emulsions and other petroleum-based tackifiers shall not be used.
- The stabilizing emulsion must be nonflammable, non-toxic to aquatic organisms, and free from growth or germination inhibiting factors.
- Areas hydraulically mulched shall be protected from all traffic, including foot traffic, a minimum of 24 hours to allow the mulch to dry and cure. Depending on the mulch, up to 48 hours of protection may be required. Always follow manufacturer's recommendations.
- Hydraulic mulch provides limited to no protection until cured. Do not apply when rain is forecast within the next 24 hours.
- Hydraulic mulch may be particularly effective on slopes steeper than 3:1.

2.5.4 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 201.16 Mulching. Specifications for

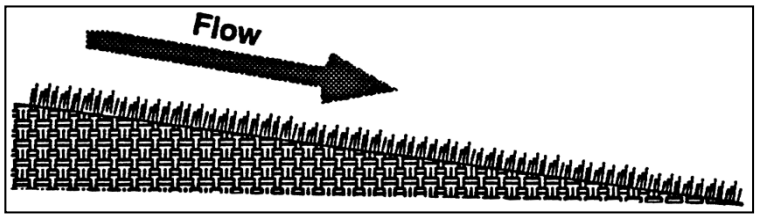
compost may be found in Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (TxDOT 2004) Item 161.

2.5.5 Inspection and Maintenance Requirements

Mulched areas should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for thin or bare spots caused by natural decomposition or weather related events. Mulch in high traffic areas should be replaced on a regular basis to maintain uniform protection. Excess mulch should be brought to the site and stockpiled for use during the maintenance period to dress problem spots.

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.

Table 2.4 Recommended Grass Mixture for Temporary Erosion Control

Season	*Common Name*	*Pure Live Seed Rate (Lbs/Acre)*
Sep 1 - Nov 30	Tall Fescue Western Wheat Grass Wheat (Red, Winter)	4.5 5.6 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.

Table 2.5 Recommended Grass Mixture for Final Stabilization of Upland in Rural Areas			
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 0.3 Sideoats Grama (El Reno) 2.7 Bermudagrass 0.9 Little Bluestem (Native) 1.0 Blue Grama (Hachita) 0.9 Illinois Bundleflower 1.0	Green Sprangletop 0.3 Sand Lovegrass 0.5 Bermudagrass 1.8 Weeping Lovegrass (Ermelo) 0.8 Sand Dropseed 0.4 Partridge Peal 1.0
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop 0.3 Bermudagrass 1.2 Sideoats Grama (El Reno) 2.7 Little Bluestem (Native) 2.0 Buffalograss (Texoka) 1.6 Illinois Bundleflower 1.0	Green Sprangletop 0.3 Bermudagrass 1.8 Weeping Lovegrass (Ermelo) 0.6 Sand Lovegrass 0.6 Sand Dropseed 0.4 Partridge Pea 1.0
Hunt	February 1 – May 15	Green Sprangletop 0.3 Sideoats Grama (El Reno) 3.2 Bermudagrass 1.8 Little Bluestem (Native) 1.7 Illinois Bundleflower 1.0	Green Sprangletop 0.3 Bermudagrass 1.5 Bahiagrass (Pensacola) 6.0 Sand Lovegrass 0.6 Weeping Lovegrass (Ermelo) 0.8 Partridge Pea 1.0

(Source: TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, Item 164)

Table 2.6 Recommended Grass Mixture for Final Stabilization of Upland in Urban Areas			
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 0.3 Sideoats Grama (El Reno) 3.6 Bermudagrass 2.4 Buffalograss (Texoka) 1.6	Green Sprangletop 0.3 Sideoats Grama (El Reno) 3.6 Bermudagrass 2.1 Sand Dropseed 0.3
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop 0.3 Sideoats Grama (El Reno) 3.6 Buffalograss (Texoka) 1.6 Bermudagrass 2.4	Green Sprangletop 0.3 Buffalograss (Texoka) 1.6 Bermudagrass 3.6 Sand Dropseed 0.4
Hunt	February 1 – May 15	Green Sprangletop 0.3 Bermudagrass 2.4 Sideoats Grama (Haskell) 4.5	Green Sprangletop 0.3 Bermudagrass 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

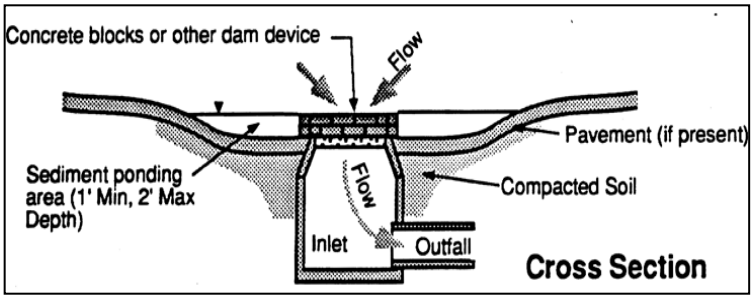
Protect newly seeded areas from excessive runoff and traffic until vegetation is established. Include a watering and fertilizing schedule in the iSWM Construction Plan facilitate the establishment of the vegetation. Vegetation for final stabilization must be maintained until the vegetative cover is 70 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

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=0.35-0.65
(*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*

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 completed 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 in 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 or 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.

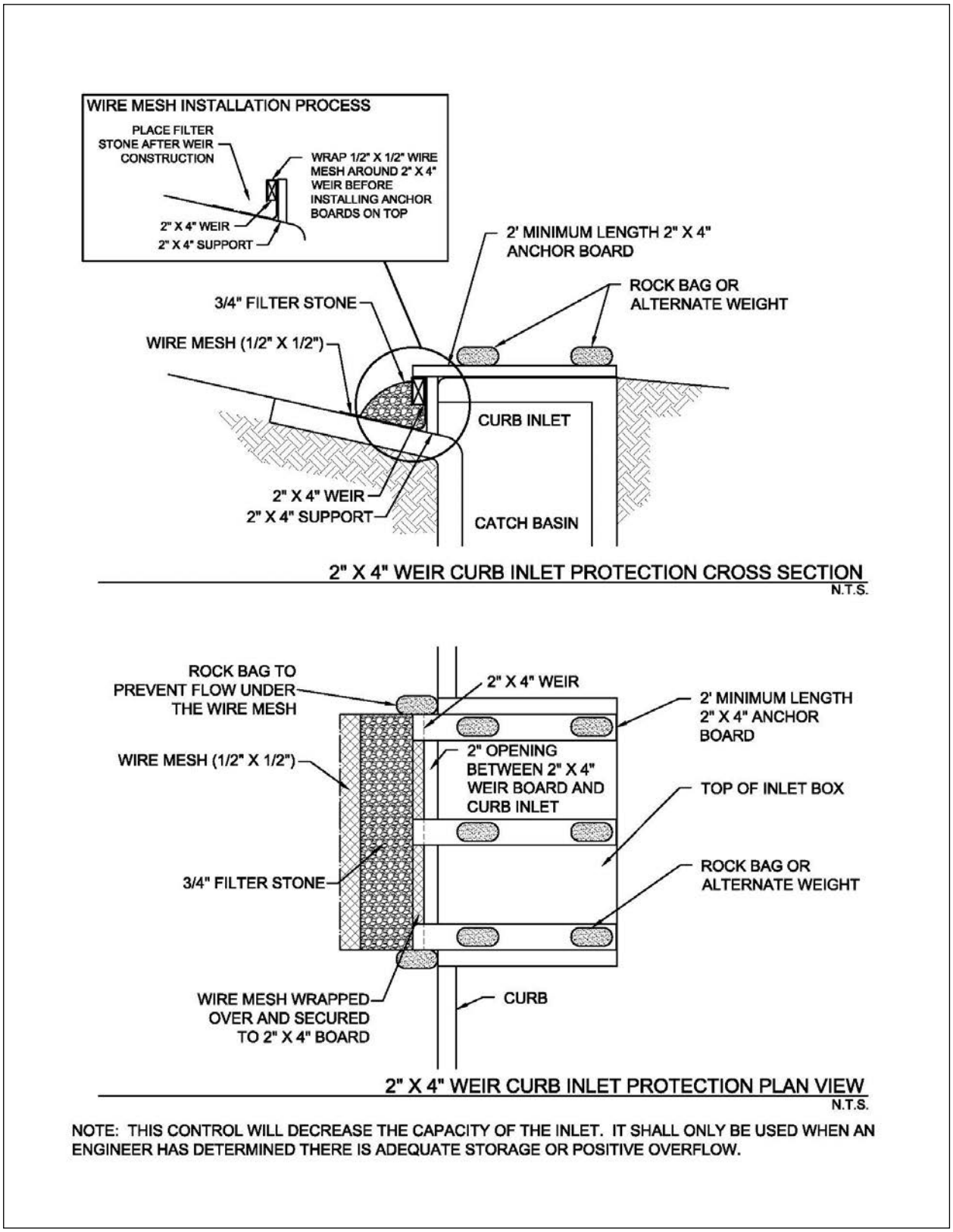
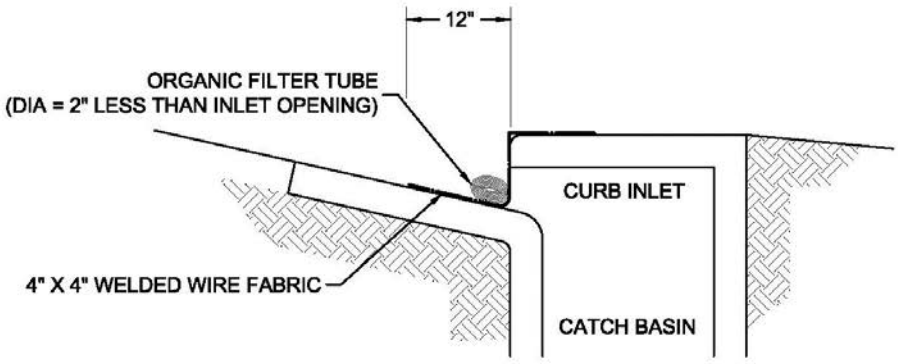
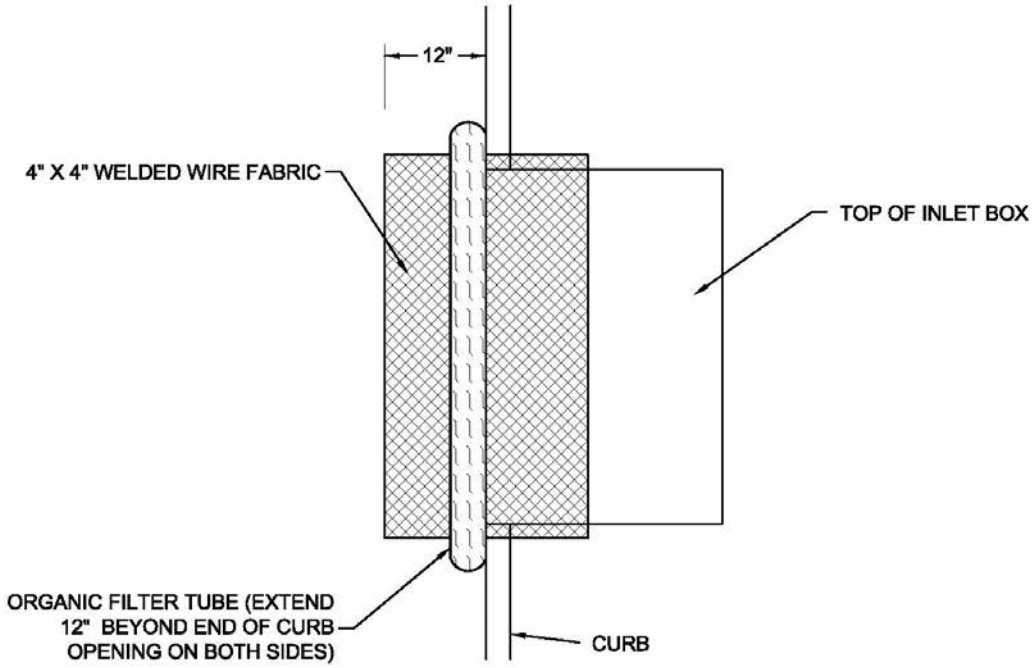


Figure 3.5 Schematics of 2"x4" Weir Curb Inlet Protection
(Source: Modified from Washington Suburban Sanitary Commission Detail SC-16.0)



ORGANIC FILTER TUBE CURB INLET PROTECTION CROSS SECTION
N.T.S.



ORGANIC FILTER TUBE CURB INLET PROTECTION PLAN VIEW
N.T.S.

NOTE: THIS CONTROL WILL DECREASE THE CAPACITY OF THE INLET. IT SHALL ONLY BE USED WHEN AN ENGINEER HAS DETERMINED THERE IS ADEQUATE STORAGE OR POSITIVE OVERFLOW.

Figure 3.6 Schematics of Organic Filter Tube Curb Inlet Protection
(Source: Modified from City of Plano BMP SP-4)

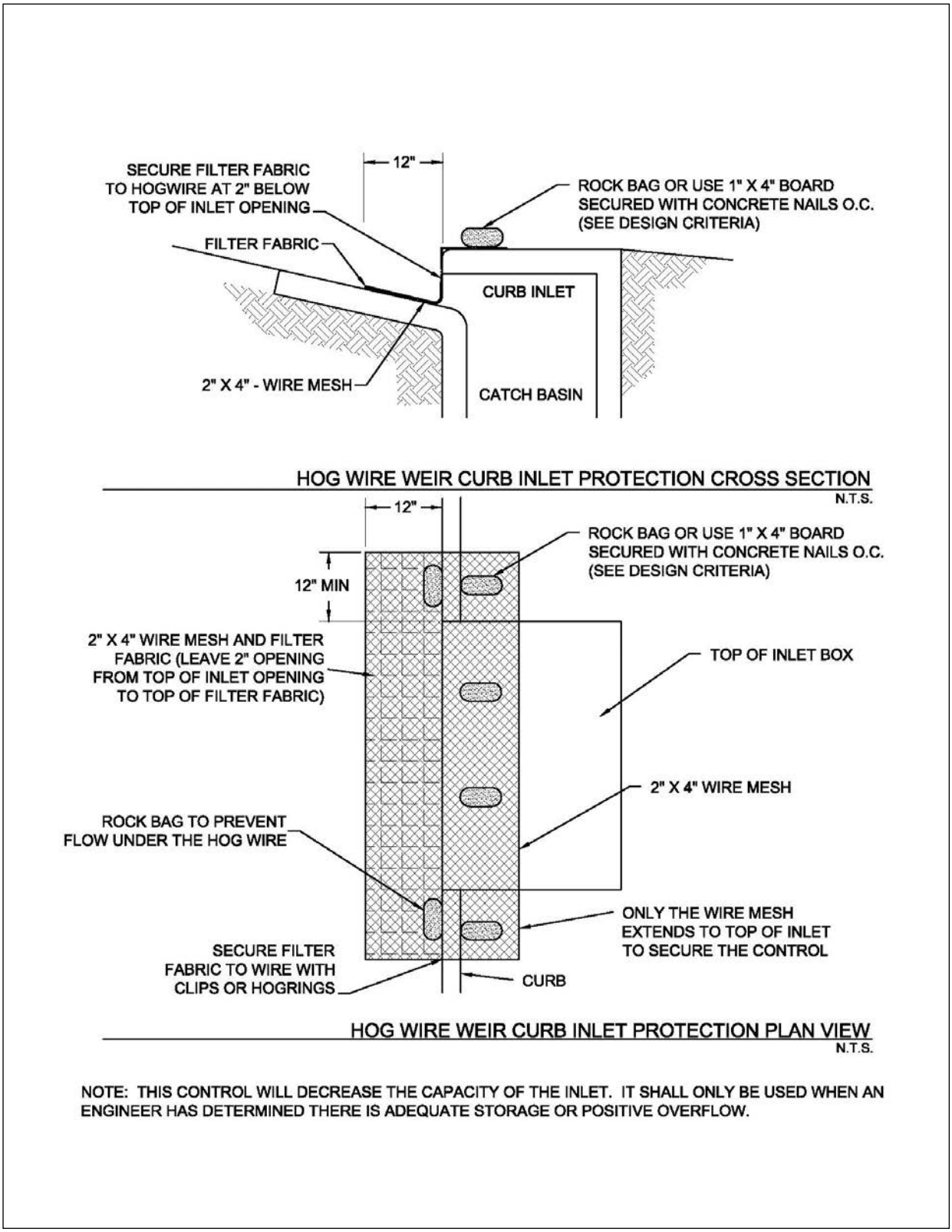
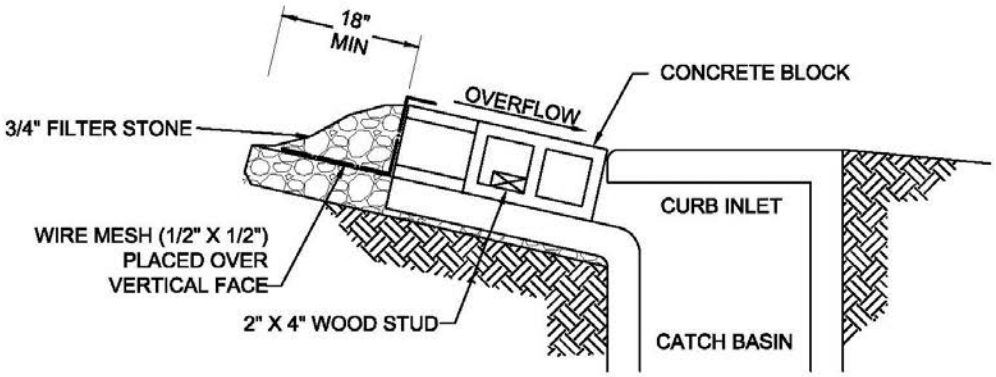
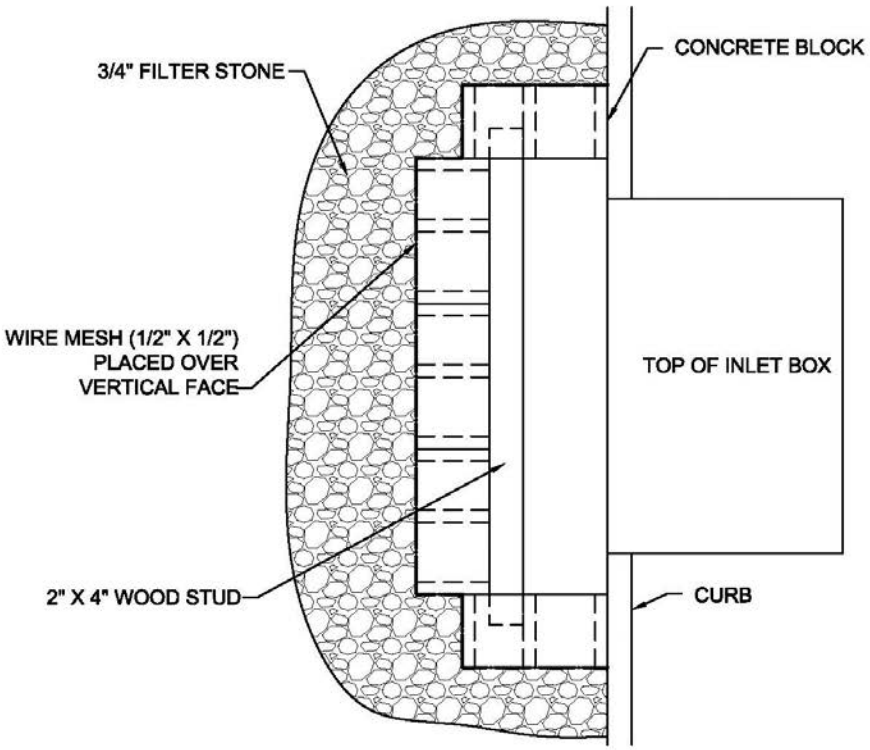


Figure 3.7 Schematics of Hog Wire Weir Curb Inlet Protection
(Source: Modified from City of Round Rock Detail E-03)



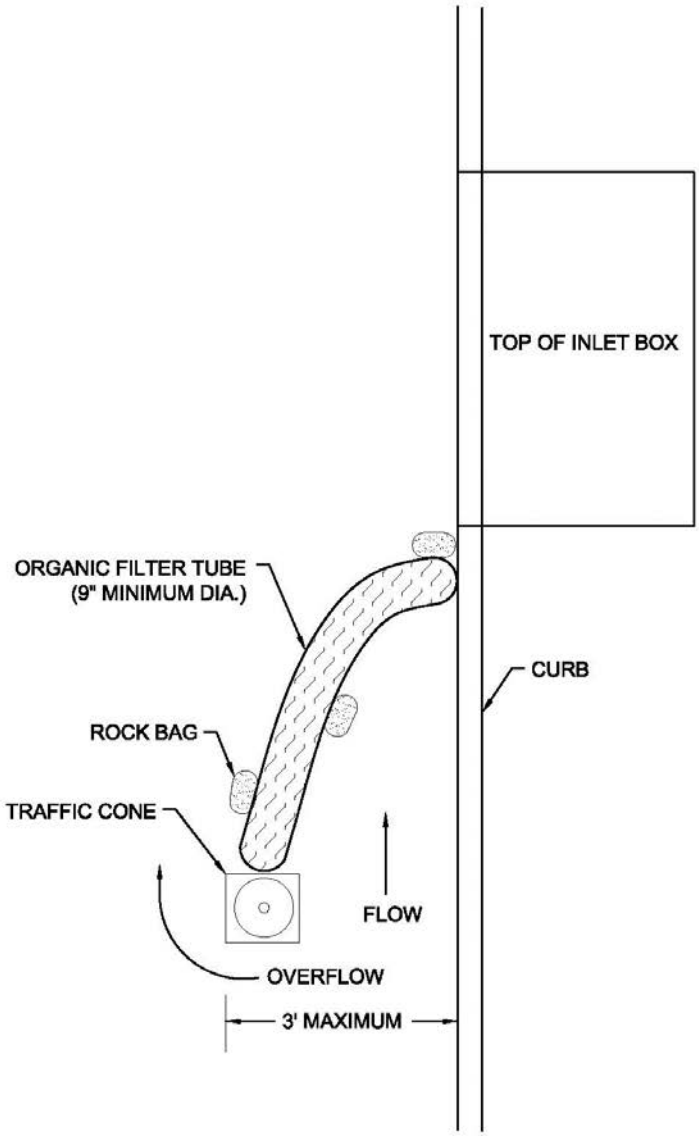
BLOCK AND GRAVEL FILTER CURB INLET PROTECTION CROSS SECTION
N.T.S.



BLOCK AND GRAVEL FILTER CURB INLET PROTECTION PLAN VIEW
N.T.S.

NOTES:
1. DO NOT INSTALL ON INLETS IN A PUBLIC STREET OR OTHER ACTIVE TRAVEL LANE. BLOCK AND GRAVEL FILTER IS INTENDED FOR USE ON LOW POINT (SUMP) INLETS IN PARKING LOTS AND OTHER PAVEMENT THAT IS NOT AN ACTIVE TRAVEL LANE. THIS INLET PROTECTION METHOD ALLOWS FOR FULL USE OF THE INLET DESIGN CAPACITY.
2. INSTALL TRAFFIC CONES AS NEEDED TO MINIMIZE THE POTENTIAL FOR CARS HITTING THE BLOCK AND GRAVEL.

Figure 3.8 Schematics of Block and Gravel Filter Curb Inlet Protection

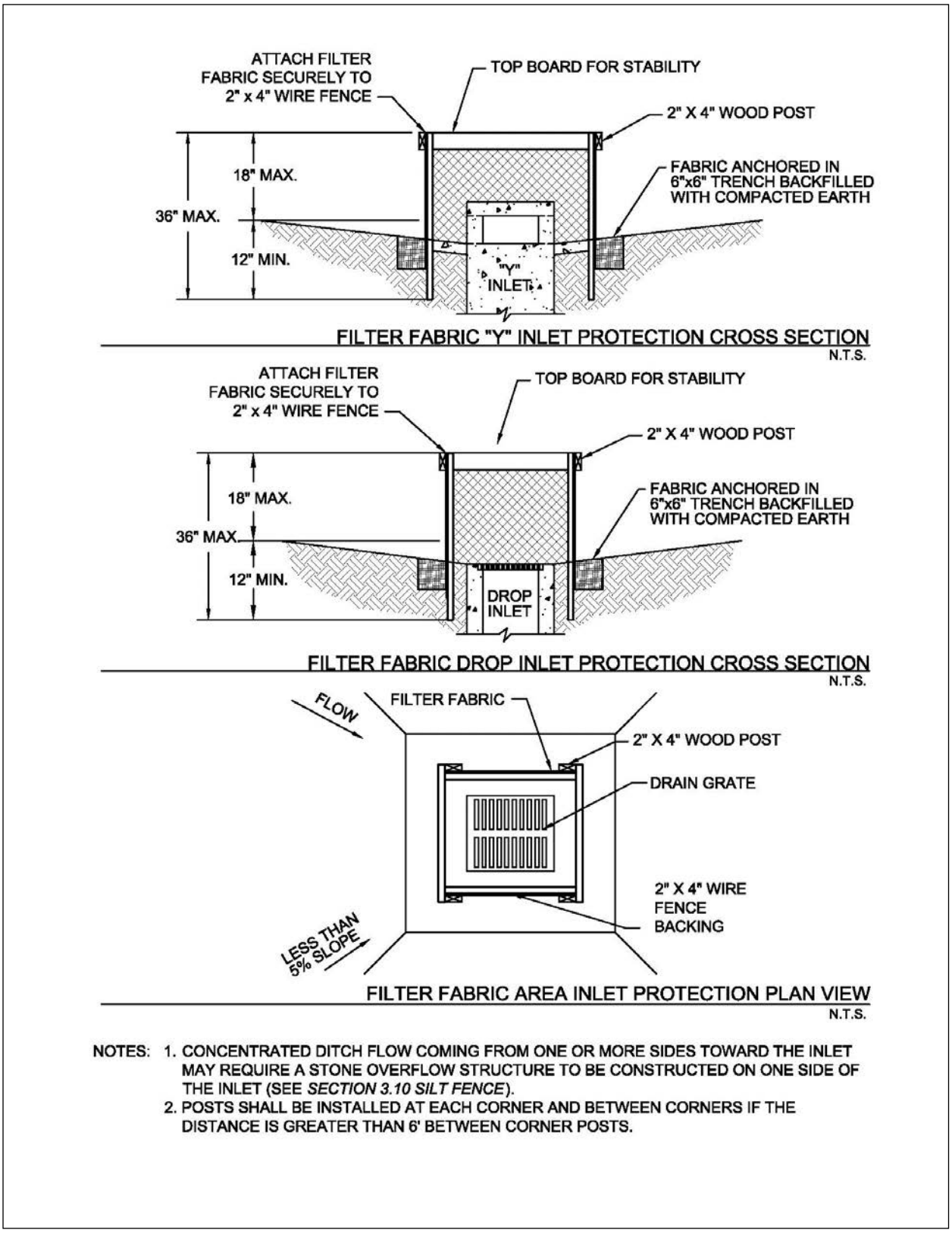


ORGANIC FILTER TUBE ON-GRADE CURB INLET PROTECTION DETAIL

N.T.S.

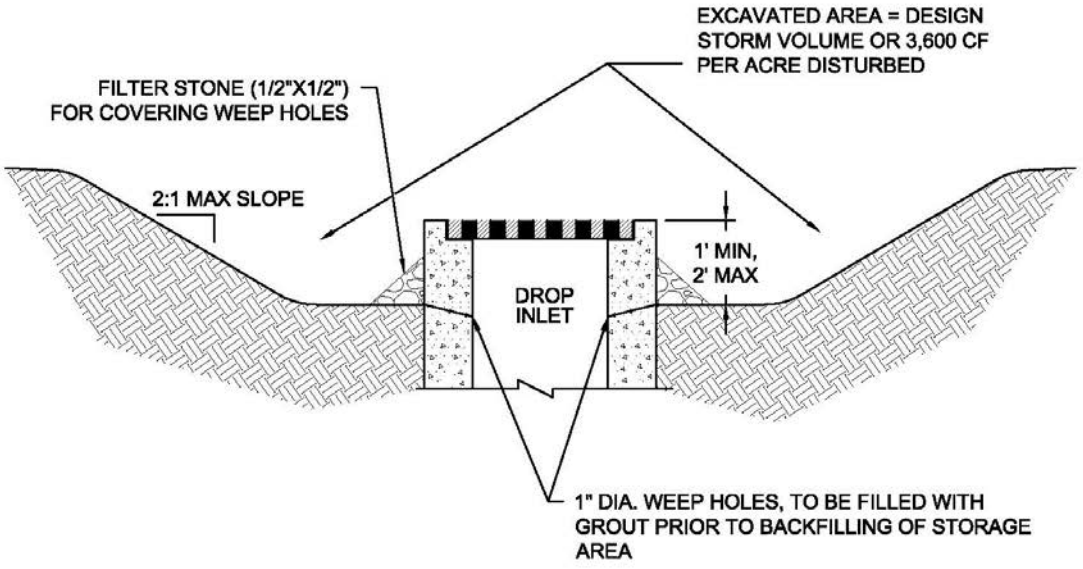
NOTES: 1. THIS DETAIL IS INTENDED FOR USE WITH ON-GRADE INLETS (NOT A LOW POINT) WHERE WATER WOULD BE DIVERTED INSTEAD OF PONDING BEHIND THE OTHER TYPES OF INLET PROTECTION.
2. DO NOT INSTALL ON INLETS WHERE THE ORGANIC FILTER TUBE WOULD EXTEND INTO AN ACTIVE TRAVEL LANE.

Figure 3.9 Schematic of Organic Filter Tube On-Grade Curb Inlet Protection

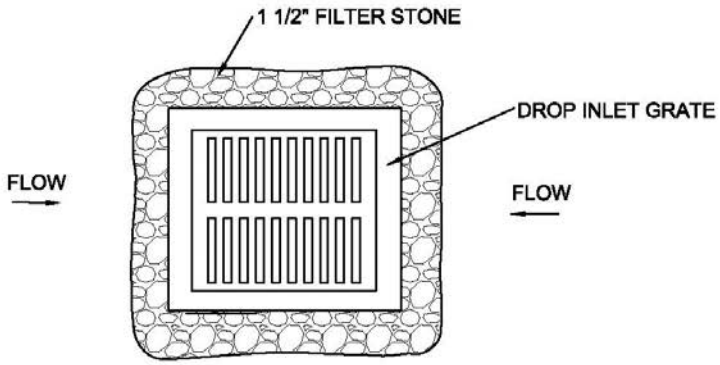


NOTES:
1. CONCENTRATED DITCH FLOW COMING FROM ONE OR MORE SIDES TOWARD THE INLET MAY REQUIRE A STONE OVERFLOW STRUCTURE TO BE CONSTRUCTED ON ONE SIDE OF THE INLET (SEE *SECTION 3.10 SILT FENCE*).
2. POSTS SHALL BE INSTALLED AT EACH CORNER AND BETWEEN CORNERS IF THE DISTANCE IS GREATER THAN 6' BETWEEN CORNER POSTS.

Figure 3.10 Schematics of Filter Fabric Area Inlet Protection
(Source: City of Plano BMP SP-4)

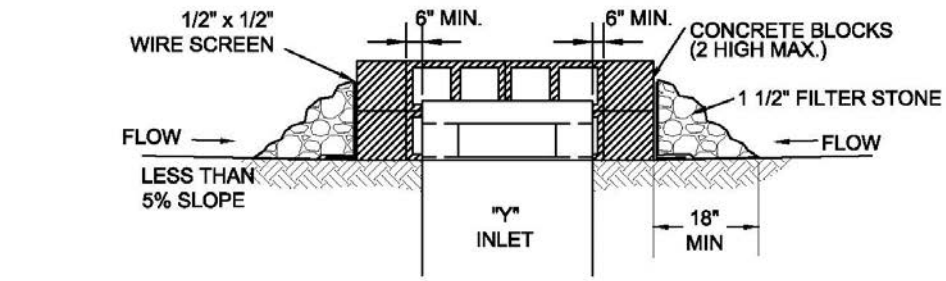


EXCAVATED IMPOUNDMENT DROP INLET PROTECTION CROSS SECTION
N.T.S.

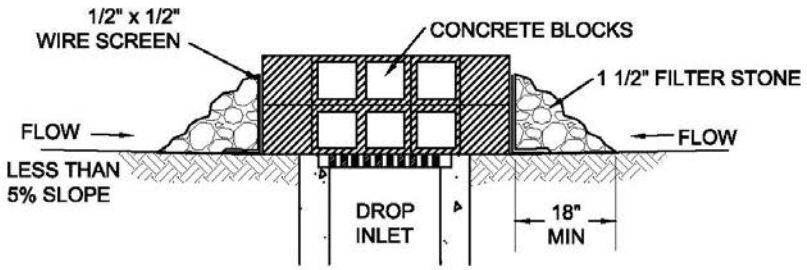


EXCAVATED IMPOUNDMENT AREA INLET PROTECTION PLAN VIEW
N.T.S.

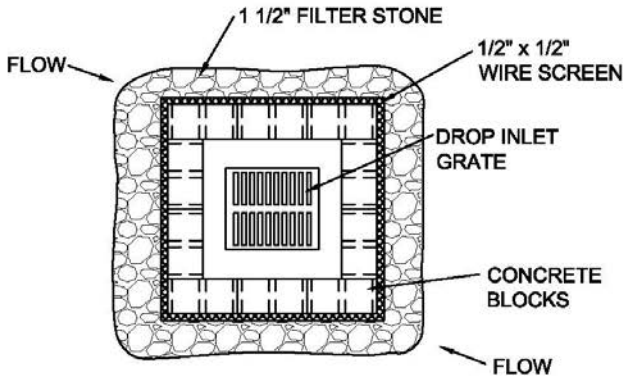
Figure 3.11 Schematics of Excavated Impoundment Area Inlet Protection



BLOCK AND GRAVEL "Y" INLET PROTECTION CROSS SECTION
N.T.S.



BLOCK AND GRAVEL DROP INLET PROTECTION CROSS SECTION
N.T.S.



BLOCK AND GRAVEL AREA INLET PROTECTION PLAN VIEW
N.T.S.

Figure 3.12 Schematics of Block and Gravel Area Inlet Protection
(Source: Modified from City of Plano BMP SP-4)

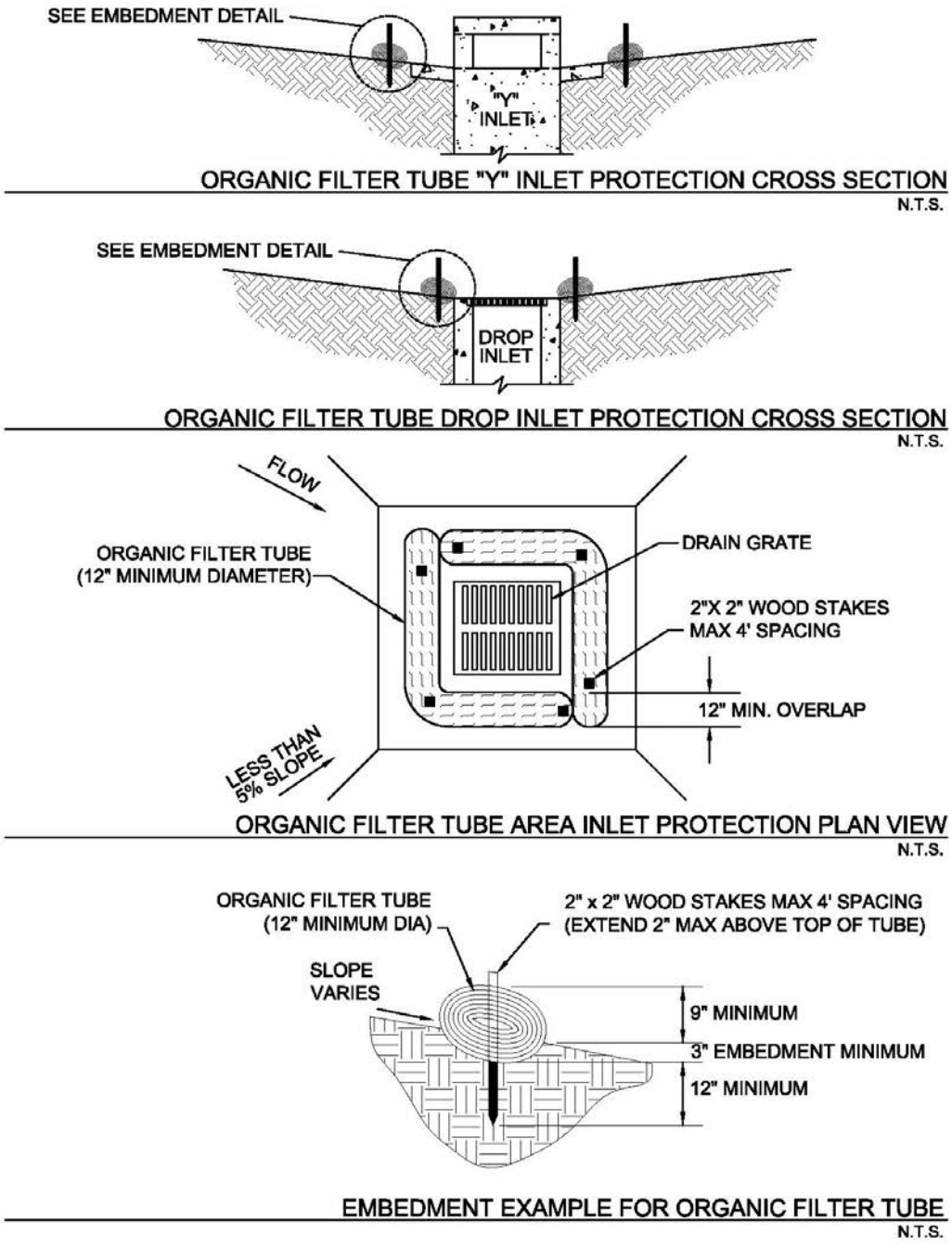
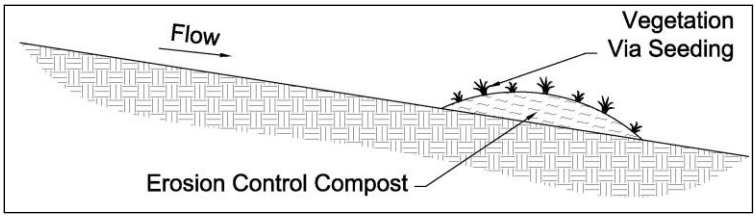


Figure 3.13 Schematics of Organic Filter Tube Area Inlet Protection

3.5 Organic Filter Berm

Sediment Control



Description: Organic filter berms, also called compost filter berms, are linear berms constructed of a mix of compost and wood chips. They are placed on a contour to control runoff. The organic filter berm 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 berm
- Maximum 200 feet distance of flow to silt fence; 50 feet if slope exceeds 10 percent
- 1½ to 3 feet high, top width of 2 to 3 feet, and base of 3 to 5 feet for trapezoidal shaped berms
- 1 to 2 feet high and 2 to 4 feet wide for windrow (triangular) berms

ADVANTAGES / BENEFITS:

- Economical means to trap sediment
- Most effective with coarse to silty soil types
- May be tilled into the soil at end of project, thus adding organic content to the soil

DISADVANTAGES / LIMITATIONS:

- Localized flooding due to minor ponding upslope of the filter berm
- Not for use in swales or low areas where berms will be subject to concentrated flow
- Can interfere with construction operations
- Repeated clogging may require replacement of berm with another control

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Repair undercutting and other failures
- Remove sediment when before it reaches one-half the height of the berm
- Maintain dimensions of the berm by replacing organic filter material when necessary

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*

3.5.1 Primary Use

Organic filter berms are used as perimeter controls down slope of disturbed areas and on side slopes where stormwater may runoff the area. They are very well suited to sites with small disturbed drainage areas that are not subjected to concentrated flows and that will ultimately be seeded, sodded, or landscaped.

3.5.2 Applications

Properly designed, the organic filter berm is economical due to the ease of installation and because it can be tilled into the soil at the end of project, limiting the cost of removal and adding to the organic content of the soil. The berms are used as perimeter control devices for both development sites and linear (roadway) type projects. They are most effective with coarse to silty soil types. Additional controls, such as a passive treatment system, may be needed to remove fine silts and clay soils suspended in stormwater.

3.5.3 Design Criteria

- Filter berms are to be constructed along a line of constant elevation (along a contour line) where possible.
- Berms 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 filter berm.
- Maximum flow to any 20 foot section of filter berm shall be 1cubic feet per second.
- Maximum distance of flow to berm 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 filter berm shall be 4:1.
- Trapezoidal shaped berms should be 1½ to 3 feet high with a top width of 2 to 3 feet and a base of 3 to 6 feet wide.
- Windrow (triangular) shaped berms should be 1 to 2 feet high and 2 to 4 feet wide.
- Berm side slopes shall be 2:1 or flatter.
- Roughen the soil surface before placing the berm to increase adherence of the compost.
- Compost shall conform to the requirements for Erosion Control Compost in Item 161 of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004).
- Organic filter berms should be stabilized by seeding if there are no other sediment controls down slope of the filter berm. Seeding shall be as specified in *Section 2.9 Vegetation* at a seed loading of 1 lb. per 10 linear feet for small berms (1ft. by 2 ft.) or 2.25 lbs per 10 linear ft. for larger berms (1.5 ft. by 3 ft.)

3.5.4 Design Guidance and Specifications

Specifications for Erosion Control Compost to be used as filter material may be found in Item 161 of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004).

3.5.5 Inspection and Maintenance Requirements

Filter berms should be inspected regularly (at least as often as required by the TPDES Construction General Permit) for buildup of excess sediment, undercutting, and other failures. Silt must be removed

when before it reaches half the height of the berm. Silt may be raked from the disturbed side of the device to clean side the berm for the first few times that it becomes clogged to prevent ponding. Repeated clogging of the berm at one location will require replacement of the organic filter material or may require installation of another control to prevent failure of the berm.

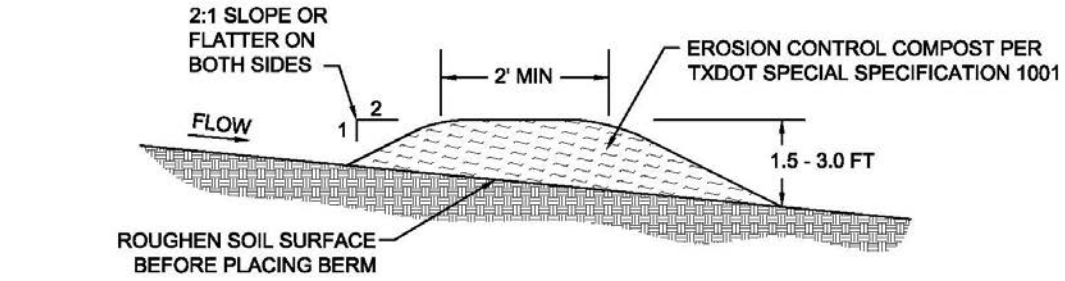
Dimensions of the berm must be maintained by replacing organic filter material when necessary. Typically excess material is stockpiled onsite for repairs to berms disturbed by construction activity.

There shall be no signs of erosion, breeching or runoff around or under the berm.

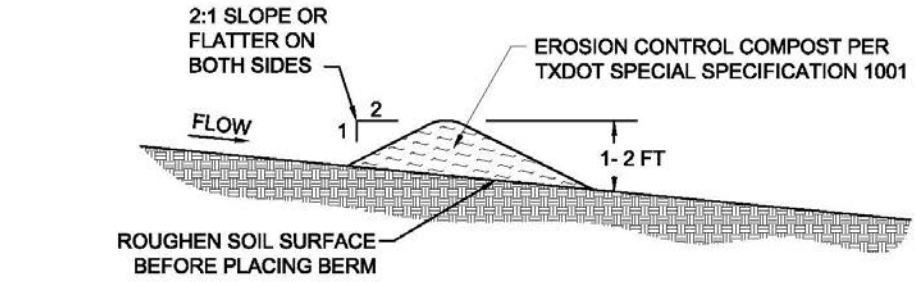
3.5.6 Example Schematics

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.



TRAPEZOIDAL SHAPED ORGANIC FILTER BERM
N.T.S.



TRIANGULAR SHAPED ORGANIC FILTER BERM
N.T.S.

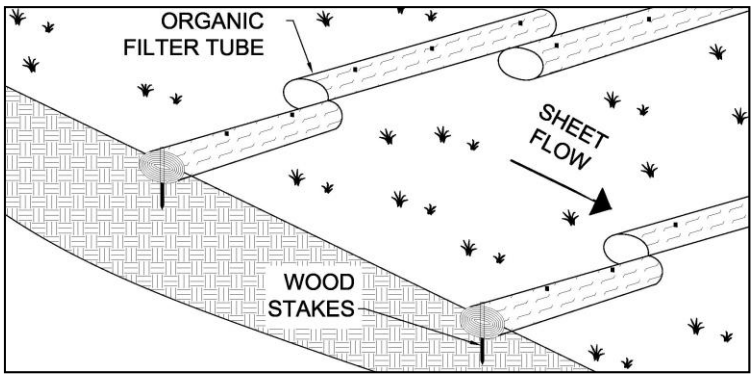
NOTE: DIMENSIONS OF THE BERM SHALL BE DESIGNED BASED ON FLOW CONDITIONS. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS TO DESIGN THE SWALE:

- SIZE OF CONTRIBUTING DRAINAGE AREA
- DESIGN STORM
- FLOW RATE
- BERM HEIGHT AND WIDTH

Figure 3.14 Schematics of Organic Filter Berm

3.6 Organic Filter Tubes

Sediment Control



Description: Organic filter tubes are comprised of an open weave, mesh tube that is filled with a filter material (compost, wood chips, straw, coir, aspen fiber, or a mixture of materials). The tube may be constructed of geosynthetic material, plastic, or natural materials. Organic filter tubes are also called fiber rolls, fiber logs, wattles, mulch socks, and/or coir rolls. Filter tubes detain flow and capture sediment as linear controls along the contours of a slope or as a perimeter control down-slope of a disturbed area.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Tube diameter when filled shall be specified on the plans
- 3 inch minimum embedment in soil
- 18 inch minimum overlap at ends of tubes
- Spacing based on drainage area and slope
- Must be staked on soil and secured with rockbags on pavement
- Turn ends of tube lines upslope a minimum of 10 feet

ADVANTAGES / BENEFITS:

- Effective means to treat sheet flow over a short distance
- Relatively easy to install
- May be used on steep slopes
- Can provide perimeter control on paved surfaces or where soil type prevents embedment of other controls
- Work well as perimeter controls around stockpiles

DISADVANTAGES / LIMITATIONS:

- Difficult to remove when wet and/or filled with sediment
- Relatively small effective areas for sediment capture

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Repair eroded areas underneath the organic filter tubes
- Re-align and stake tubes that are dislodged by flow
- Remove sediment before it reaches half the height of the exposed tube

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:

- *None*

3.6.1 Primary Use

Organic filter tubes are long, flexible controls that are used along a line of constant elevation (along a contour) on slopes. They are used as perimeter controls down slope of disturbed areas, around temporary stockpiles and on side slopes where stormwater may runoff the area. The tubes maintain sheet flow, slow velocities, and capture sediment. When used in series on slopes, they also shorten the slope length and protect the slope from erosion.

3.6.2 Applications

Organic filter tubes include a wide variety of tube and filter materials. Organic filter tubes are used as a perimeter sediment barrier, similar to silt fence, for development projects and linear projects, such as roadways and utilities. They work well on individual residential lots and on lots being re-developed, where space may be limited. Organic filter tubes are most effective with coarse to silty soil types. Additional controls may be needed to remove fine silts and clay soils suspended in stormwater.

Organic filter tubes can be used on paved surfaces where it's not possible to stake a silt fence. Applications on paved surfaces include perimeter controls for soil stockpiles, pavement repair areas, utility trenching, and building demolition. When compost filter material is used in tubes on pavement, the material has the added benefit of removing some oil and grease from stormwater runoff.

Applications on slopes include temporary sediment control during construction and erosion control of the disturbed soil on the slope. Organic filter tubes may be used to control sheet flow on slopes when final stabilization measures are being applied and established.

Organic filter tubes may also be used for inlet protection and, in limited cases, as check dams in small drainage swales. Refer to *Section 3.4 Inlet Protection* and *Section 2.1 Check Dam* for the design criteria to use organic filter tubes in these applications.

3.6.3 Design Criteria

General Criteria

- Filter tubes should be installed along the contour.
- Tubes shall be staked with 2 inch by 2 inch wooden stakes at a maximum spacing of 4 feet. Rebar or similar metal stakes may be used instead of wooden stakes.
- When placed on pavement, sand or rock bags shall be placed abutting the down-slope side of the tubes to prevent runoff from dislodging the tubes. At a minimum, bags shall be placed one foot from each end of the tube and at the middle of the tube.
- Filter tubes shall be embedded a minimum of three inches when placed on soil. Placement on rock shall be designed as placement on pavement.
- The end of tubes shall overlap a minimum of 18 inches when multiple tubes are connected to form a linear control along a contour or a perimeter.
- Loose mulch material shall be placed against the log on the upstream side to facilitate contact with the ground.
- The last 10 feet (or more) at the ends of a line of tubes shall be turned upslope to prevent bypass by stormwater. Additional upslope lengths of tubes may be needed every 200 to 400 linear feet, depending on the traverse slope along the line of tubes.
- The most common sizes of tubes are 6 to 24 inches in diameter; however, tubes are available in sizes as small as 4 inches and up to 36 inches in diameter. The designer shall specify a diameter based on the site application. Tubes less than 8 inches in diameter when filled will require more frequent maintenance if used.

- Manufactured organic filter tube products shall have documentation of a minimum 75 percent soil retention using ASTM D7351 Standard Test Method for Determination of Sediment Retention Device Effectiveness in Sheet Flow Applications.
- When using manufactured tubes, the manufacturer's recommendations for diameter and spacing based on slope, flow velocities, and other site conditions shall be followed when they are more stringent than the design criteria in this section.
- When used as a perimeter control on grades of 10:1 or less, criteria in the following table shall be used as a guide for the size and installation rate of the organic filter tube.

Table 3.1 Perimeter Control Applications*

Drainage Area (Max)	*Max Flow Length to the Tube*	*Tube Diameter (Min)*
1/3 Acre per 100 feet	145 feet	18 inches
1/4 Acre per 100 feet	110 feet	15 inches
1/5 Acre per 100 feet	85 feet	12 inches
1/8 Acre per 100 feet	55 feet	9 inches

(Source: Modified and expanded from City of Plano Fact Sheet SP-13)
*Applicable on grades of 10:1 or flatter.

- When installing organic filter tubes along contours on slopes, criteria in the following table shall be used as a general guide for size and spacing of the tubes. Actual tube diameter and spacing shall be specified by the designer. The designer shall consider the tube manufacturers recommendations, the soil type, flow volume on the slope, required performance life, and erosion control measures that may be used in conjunction with the tubes.

Table 3.2 Maximum Spacing for Slope Protection

	Tube Diameter (Min)			
Slope (H:V)	*9 Inches*	*12 Inches*	*18 Inches*	*24 Inches*
5:1 to 10:1	35 feet	40 feet	55 feet	60 feet
4:1	30 feet	40 feet	50 feet	50 feet
3:1	25 feet	35 feet	40 feet	40 feet
2:1	20 feet	25 feet	30 feet	30 feet
1:1	10 feet	15 feet	20 feet	20 feet

(Source: Modified and expanded from Iowa Statewide Urban Design and Specifications Standards for Filter Socks)

Tube Material

- The designer shall specify the type of mesh based on the required life of the tube. At a minimum, the mesh shall have a rated life of one year under field conditions.
- If the tubes will be left onsite as part of the final stabilization, they must be constructed of 100 percent biodegradable jute, coir, sisal or similar natural fiber or 100 percent UV photodegradable plastic, polyester or geosynthetic material.
- Mesh tubes may be oval or round in cross-section.
- Mesh for the tubes shall be open and evenly woven. Size of weave openings shall be specified based on filter material. Openings may range from ½ inch for Erosion Control Compost to 2 inches for straw and coir.
- Mesh openings should not exceed ½ inch in diameter.

Filter Material

- Different filter materials have different properties and will affect sheet flow differently. The designer shall specify the type of material to be used (or excluded) on a particular site.
- Straw filter material shall be Certified Weed Free Forage. The straw must be in good condition, air-dried, and not rotten or moldy.
- Compost shall conform to the requirements for Erosion Control Compost in Item 161 of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004).
- Compost may provide some oil and grease removal; however, the large percentage of fines in compost will result in less filtering and more ponding of stormwater.
- Wood chips shall be 100 percent untreated chips and free of inorganic debris, such as plastic, glass, metal, etc. Wood chip size shall not be smaller than 1 inch and shall not exceed 3 inches in diameter. Shavings shall not be more than 5% of the total mass.

3.6.4 Design Guidance and Specifications

Specifications for Erosion Control Compost to be used as filter material may be found in Item 161 of the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT 2004).

3.6.5 Inspection and Maintenance Requirements

Organic filter tubes should be inspected regularly (at least as often as required by the TPDES Construction General Permit). The filter tube should be checked to ensure that it is in continuous contact with the soil at the bottom of the embedment trench. Closely check for rill erosion that may develop under the filter tubes. Eroded spots must be repaired and monitored to prevent reoccurrence. If erosion under the tube continues, additional controls are needed.

Staking shall be checked to ensure that the filter tubes are not moving due to stormwater runoff. Repair and re-stake slumping filter tubes. Tubes that are split, torn or unraveling shall be repaired or replaced.

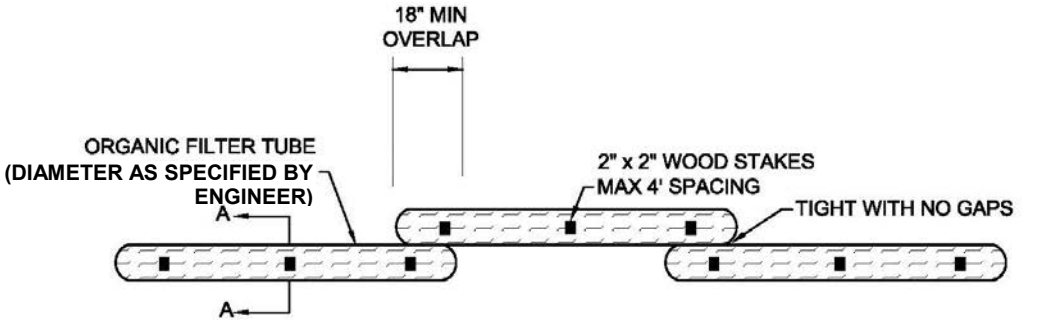
Check the filter tube material to make sure that it has not become clogged with sediment or debris. Clogged filter tubes usually lead to standing water behind the filter tube after the rain event. Sediment shall be removed from behind the filter tube before it reaches half the height of the exposed portion of the tube.

When sediment control is no longer needed on the site, the tubes may be split open and the filter material may be used for mulching during establishment of vegetation for final stabilization if it meets the criteria in *Section 2.5 Mulching*.

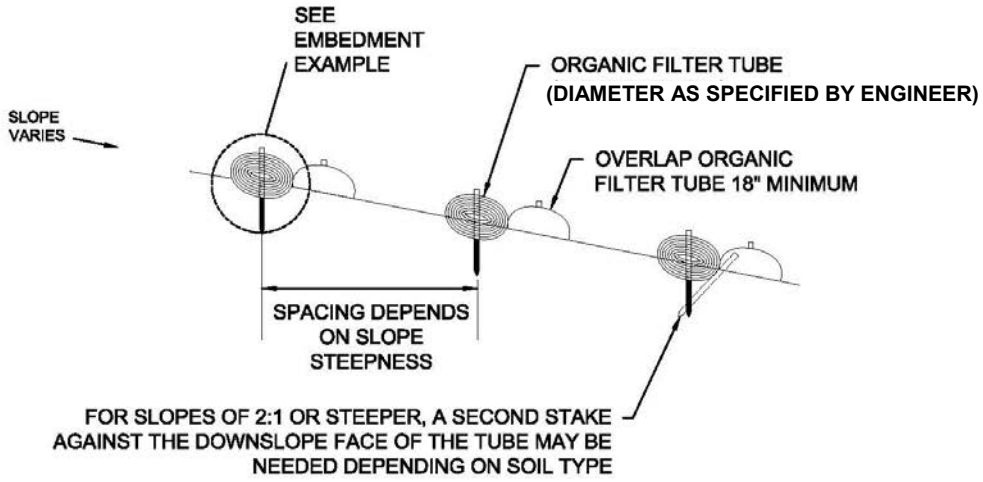
3.6.6 Example Schematics

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.



ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.



ORGANIC FILTER TUBE SLOPE PROTECTION PROFILE
N.T.S.

NOTES:

1. TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS.
   - SIZE OF CONTRIBUTING DRAINAGE AREA
   - STEEPNESS OF SLOPE
   - GROUND CONDITIONS (SOIL OR PAVEMENT)
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBES ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.

Figure 3.15 Schematics of Organic Filter Tubes

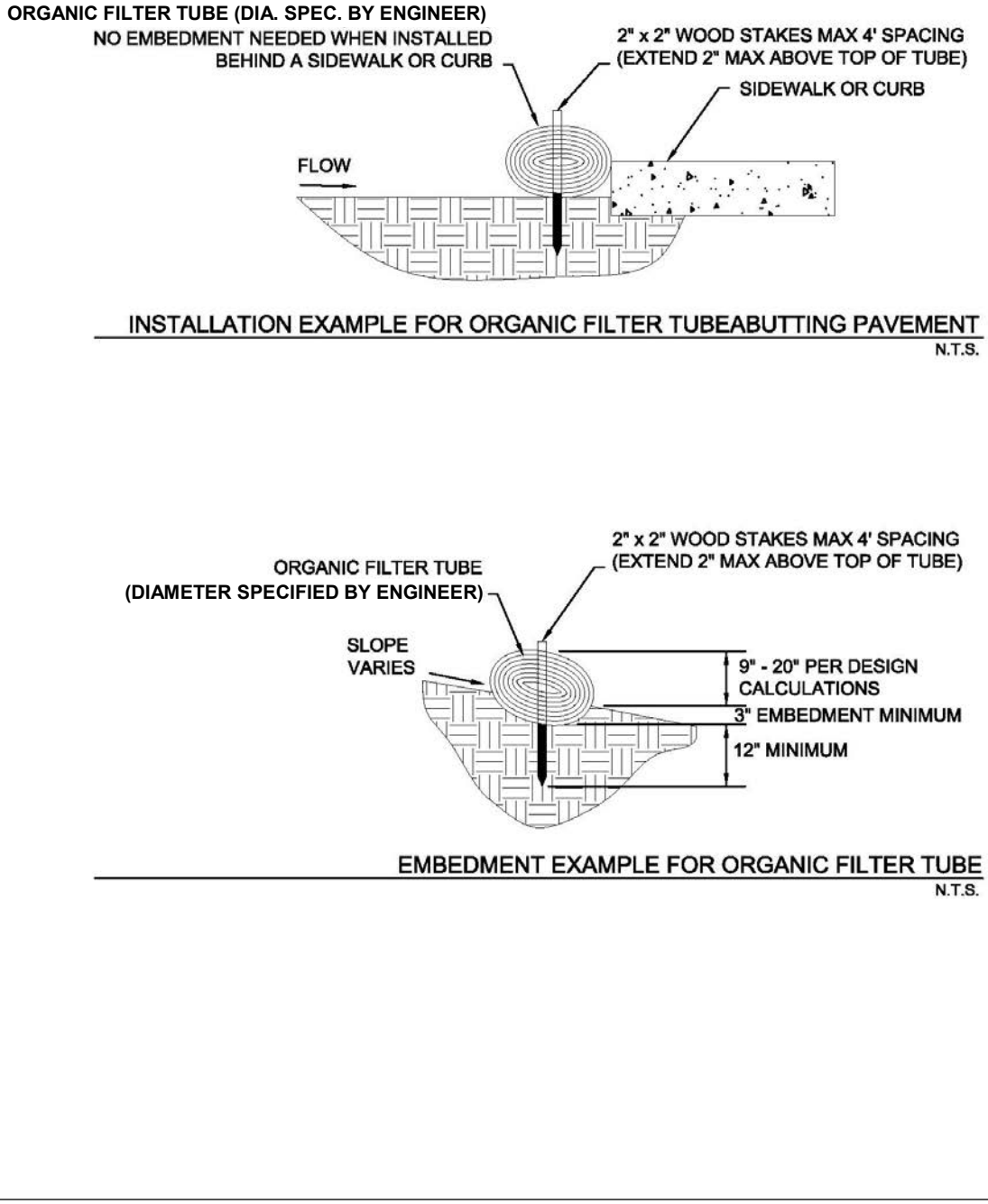
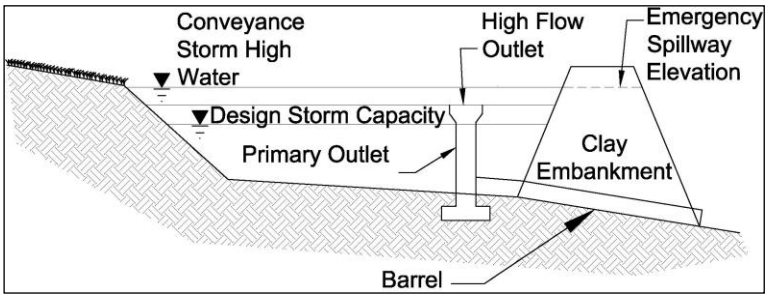


Figure 3.16 Examples of Organic Filter Tube Installation Methods

3.9 Sediment Basin

Sediment Control



Description: A sediment basin is an embankment with a controlled outlet that detains stormwater runoff, resulting in the settling of suspended sediment. The basin provides treatment for the runoff as well as detention and controlled release of runoff, decreasing erosion and flood impacts downstream.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Minimum 4:1 length to width ratio
- Maximum embankment height and storage capacity limited by TCEQ requirements
- Minimum dewatering time of 36 hours
- Safely pass 25-year, 24-hour storm event without structure damage

ADVANTAGES / BENEFITS:

- Effective at removing suspended sand and loam
- May be both a temporary and permanent control
- Can be used in combination with passive treatment

DISADVANTAGES / LIMITATIONS:

- Effectiveness depends on type of outlet
- Limited effectiveness in removing fine silt and clay
- May require a relatively large portion of the site
- Storm events that exceed the design storm event may damage the structure and cause downstream impacts

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Remove obstructions from discharge structures
- Remove sediment and re-grade basin when storage capacity reduced by 20 percent

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=0.50-0.90
(*Depends on soil type*)

IMPLEMENTATION CONSIDERATIONS

- ● Capital Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes > 5%

Other Considerations:

- *Public safety*
- *Mosquito breeding habitat*
- *Requires comprehensive planning and design*

3.9.1 Primary Use

Sediment basins should be used for all sites with adequate open space for a basin and where the site topography directs a majority of the site drainage to one point. Sediment basins are necessary as either temporary or permanent controls for sites with disturbed areas of 10 acres and larger that are part of a common drainage area unless specific site conditions limit their use.

3.9.2 Applications

Sediment basins serve as treatment devices that can be used on a variety of project types. They are normally used in site development projects in which large areas of land are available for the basin, a minor stream or off-line drainage way crosses the site, or a specific water feature is planned for the site. Sediment basins are highly effective at reducing sediment and other pollutants for design storm conditions. Sediment basins are typically easier to maintain than other structural controls (e.g. silt fences, etc).

A sediment basin by itself does not typically remove a sufficient percentage of fine silts and clays to be an effective sediment barrier. Table 3.3 provides a summary of sediment basin effectiveness based on soil type.

Table 3.3 Sediment Basin Effectiveness for Different Soil Types

Soil Type	*Runoff Potential*	*Settling Rate*	*Sediment Basin Effectiveness*	*Efficiency Rating (Fe)*
Sand	Low	High	High	0.90
Sandy Loam	Low	High	High	0.90
Sandy Silt Loam	Moderate	Moderate	Moderate	0.75
Silt Loam	Moderate	Moderate	Moderate	0.75
Silty Clay Loam	Moderate	Low	Low	0.75
Clay Loam	Great	Low	Low	0.50
Clay	Great	Low	Low	0.50

(Source: Michigan Department of Environmental Quality Soil Erosion and Sedimentation Control Training Manual)

When the disturbed area contains a high percentage of fine silt or clay soil types, the sediment basin may be used with a passive or active treatment system to remove these finer suspended solids. Design criteria may be found in *Section 3.1 Active Treatment System* and *Section 3.7 Passive Treatment System*.

3.9.3 Design Criteria

Texas Administrative Code Title 30, Chapter 299 (30 TAC 299), Dams and Reservoirs, contains specific requirements for dams that:

- Have a height greater than or equal to 25 feet and a maximum storage capacity greater than or equal to 15 acre-feet; or
- Have a height greater than six feet and a maximum storage capacity greater than or equal to 50 acre feet.

If the size of the detention basin meets or exceeds the above applicability, the design must be in accordance with state criteria, and the final construction plans and specifications must be submitted to the TCEQ for review and approval.

The following design criteria are for temporary sediment basins that are smaller than the TCEQ thresholds. The sediment basin shall be designed by a licensed engineer in the State of Texas. The criteria and schematics are the minimum and, in some cases, only concept level. It is the responsibility of the engineer to design and size the embankment, outfall structures, overflow spillway, and downstream

energy dissipaters and stabilization measures. Alternative designs may be acceptable if submitted to the reviewing municipality with supporting design calculations.

Sediment Basin Location and Planning

- Design of the sediment basin should be coordinated with design of the permanent drainage infrastructure for the development.
- The basin shall not be located within a mapped 100-year floodplain unless its effects on the floodplain are modeled, and the model results are approved by the reviewing municipality.
- Basins shall not be located on a live stream that conveys stormwater from upslope property through the construction site.
- Basins may be located at the discharge point of a drainage swale that collects runoff from construction activities, or the basin may be located off-channel with a swale or dike constructed to divert runoff from disturbed areas to the basin. Design criteria for these controls are in *Section 2.2 Diversion Dike* and *Section 2.4 Interceptor Swale*.
- Sediment basins must be designed, constructed, and maintained to minimize mosquito breeding habitats by minimizing the creation of standing water.
- Temporary stabilization measures should be specified for all areas disturbed to create the basin.

Basin Size

- Minimum capacity of the basin shall be the calculated volume of runoff from a 2-year, 24-hour duration storm event plus sediment storage capacity of at least 1,000 cubic feet.
- The basin must be laid out such that the effective flow length to width ratio of the basin is a minimum of 4:1. Settling efficiencies are dependent on flow velocity, basin length, and soil type. Smaller particle sizes require slower velocities and longer basins. Basin dimensions should be designed based on flow velocities and anticipated particle sizes.
- Stoke's equation for settling velocities, as modified to Newton's equation for turbulent flow, may be used to estimate length required based on depth of the basin.

  Settling Velocity (ft/s) = 1.74 $[(\rho_p - \rho)gd/\rho]^{1/2}$ **(3.1)**

  Where:

  ρ_p = density of particles (lb/ ft^3)

  ρ = density of water (lb/ft^3)

  g = gravitational acceleration (ft/s^2)

  d = diameter of particles (ft)
- The effective length of sediment basins may be increased with baffles. Baffles shall be spaced at a minimum distance of 100 feet. Spacing should be proportional to the flow rate, with greater spacing for higher flow rates. Check the flow velocity in the cross section created by the baffles to ensure settling will occur.
- Baffles may be constructed by using excavated soil to create a series of berms within the basin; however, porous baffles are recommended. Porous baffles may consist of coir fiber, porous geotextiles, porous turbidity barriers, and similar materials. Porous materials disrupt the flow patterns, decrease velocities, and increase sedimentation.
- Basins have limited effectiveness on suspended clay soil particles. The basin's length to width ratio typically should be 10:1 to effectively remove suspended clay particles. The use of passive treatment systems can significantly reduce this ratio and improve removal rates. Criteria are in *Section 3.7 Passive Treatment System*.

Embankment

- Top width shall be determined by the engineer based on the total height of the embankment as measured from the toe of the slope on the downstream side.
- Embankment side slopes shall be 3:1 or flatter.
- The embankment shall be constructed with clay soil, minimum Plasticity Index of 30 using ASTM D4318 Standard Test for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- Clay soil for the embankment shall be placed in 8 inch lifts and compacted to 95 percent Standard Proctor Density at optimum moisture content using ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
- The embankment should be stabilized with rock riprap or temporary vegetation.

Outlet and Spillway

- The primary outlet shall have a minimum design dewatering time of 36 hours for the temporary control design storm (2-year, 24-hour).
- Whenever possible, the outlet shall be designed to drain the basin in less than 72 hours to minimize the potential for breeding mosquitoes.
- The basin's primary outlet and spillway shall be sized to pass the difference between the conveyance storm (25-year, 24-hour) and the temporary control design storm without causing damage to the embankment and structures.
- Unless infeasible, the primary outlet structure should withdraw water from the surface of the impounded water. Outlet structures that do this include surface skimmers, solid risers (non-perforated), flashboard risers, and weirs.
- Surface skimmers use a floating orifice to discharge water from the basin. Skimmers have the advantage of being able to completely drain the detention basin. Skimmers typically result in the greatest sediment removal efficiency for a basin, because they allow for a slower discharge rate than other types of surface outlets. Due to this slower discharge rate, a high flow riser may still be needed to discharge the conveyance storm if a large enough spillway is not feasible due to site constraints.
- Discharge rates for surface skimmers are dependent on the orifice configuration in the skimmer. Use manufacturer's flow rate charts to select the skimmer based on the flow rate needed to discharge the design storm from the basin within a selected time period (i.e. Q=Volume/time).
- Risers shall be designed using the procedures in *Section 3.9.7 Design Procedures*.
- Weir outlets should be designed using the guidance in *Section 2.2.2 of the Hydraulics Technical Manual*.
- Use of overflow risers and weirs result in a pool of water that should be accounted for in the design capacity of the basin. These outlet structures are good options when the temporary sediment basin will be retained as a permanent site feature upon completion of construction. If the basin is temporary and standing water is not acceptable during construction, the construction plans shall include procedures for dewatering the basin following criteria in *Section 3.3 Dewatering Controls*.
- Flashboard risers function like an overflow riser pipe, but they contain a series of boards that allow for adjustment of the pool level. The boards may be removed for draining the basin to a lower level. However, this operation can be difficult and a safety hazard when done manually.
- A perforated riser may be used as an outlet when surface discharge is not feasible. A perforated rise has the advantage of dewatering the basin; however, it also results in the lowest sediment removal efficiency. Perforated risers provide a relatively rapid drawdown of the pool, and they discharge water from the entire water column, resulting in more suspended sediment being discharged than with a surface outlet.

- Size and spacing of the orifices on a perforated riser shall be designed to provide the minimum detention time while allowing for the drawdown of detained water.
- Gravel (1½ to 3 inches) may be placed around the perforated riser to aid sediment removal, particularly the removal of fine soil particles, and to keep trash from plugging the perforations. The gravel is most effective when the basin will be used for less than a year. When installed for longer periods of time, the gravel may become clogged with fine sediments and require cleaning while submerged.
- The outlet of the outfall pipe (barrel) shall be stabilized with riprap or other materials designed using the conveyance storm flow rate and velocity. Velocity dissipation measures shall be used to reduce outfall velocities in excess of 5 feet per second.
- The outfall pipe through the embankment shall be provided with anti-seep collars connected to the exterior of the pipe section or at a normal joint of the pipe material. The anti-seep collar material shall be compatible with the pipe material used and shall have a watertight bond to the exterior of the pipe section. The size and number of collars shall be selected by the designer in accordance with the following formula and table:

  Collar Outside Dimension = X + Diameter of pipe in feet

  Example: Pipe Length = 45 feet
  Barrel Pipe Diameter = 12 inches = 1 foot
  2 anti-seep collars

  Anti-seep Collar Dimensions:
  3.4 feet (from table) + 1.0 foot (Pipe dia.) = 4.4 feet
  Use 2 anti-seep collars each being 4.4 feet square or 4.4 feet diameter if round.

Table 3.4 Number and Spacing of Anti-Seep Collars

	X Values - Feet			
Pipe Length	*Number of Anti-Seep Collars*			
	1	**2**	**3**	**4**
40	6.0	3.0		
45	6.8	3.4		
50	7.5	3.8	2.5	
55		4.2	2.8	
60		4.5	3.0	
65		4.9	3.3	
70		5.3	3.5	2.6
75		5.6	3.8	2.8
80		6.0	4.0	3.0

- Risers used to discharge high flows shall be equipped with an anti-vortex device and trash rack.
- Spillways shall be constructed in undisturbed soil material (not fill) and shall not be placed on the embankment that forms the basin.

3.9.4 Design Guidance and Specifications

Design guidance for temporary sediment basins is in *Section 3.9.7 Design Procedures*. Criteria for sediment basins that will become permanent detention basins are in *Section 3.6.3 of the iSWM Criteria Manual*. Additional design guidance for different types of outlet structures is in *Section 2.2 of the Hydraulics Technical Manual*.

No specification for construction of this item is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

3.9.5 Inspection and Maintenance Requirements

Sediment basins should be inspected regularly (at least as often as required by the TPDES Construction General Permit) to check for damage and to insure that obstructions are not diminishing the effectiveness of the structure. Sediment shall be removed and the basin shall be re-graded to its original dimensions when the sediment storage capacity of the impoundment has been reduced by 20 percent. The removed sediment may be stockpiled or redistributed onsite in areas that are protected by erosion and sediment controls.

Inspect temporary stabilization of the embankment and graded basin and the velocity dissipaters at the outlet and spillway for signs of erosion. Repair any eroded areas that are found. Install additional erosion controls if erosion is frequently evident.

3.9.6 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**. Dimensions of the sediment basin, embankment, and appurtenances shall be designed by an engineer licensed in the State of Texas. Construction drawings submitted to the municipality for review shall include, but are not limited to, the following information and supporting calculations.

- Embankment height, side slopes and top width.
- Dimensions of the skimmer, riser, weir or other primary outlet.
- Diameter of outfall pipe (barrel).
- Pool elevation for the temporary control design storm and conveyance storm.
- Outfall pipe flow rate and velocity for the temporary control design storm and conveyance storm.
- Spillway cross section, slope, flow rate, and velocity for the conveyance storm.
- Depth, width, length, and mean stone diameter for riprap apron or other velocity dissipation device at the outfall pipe and spillway discharge points.

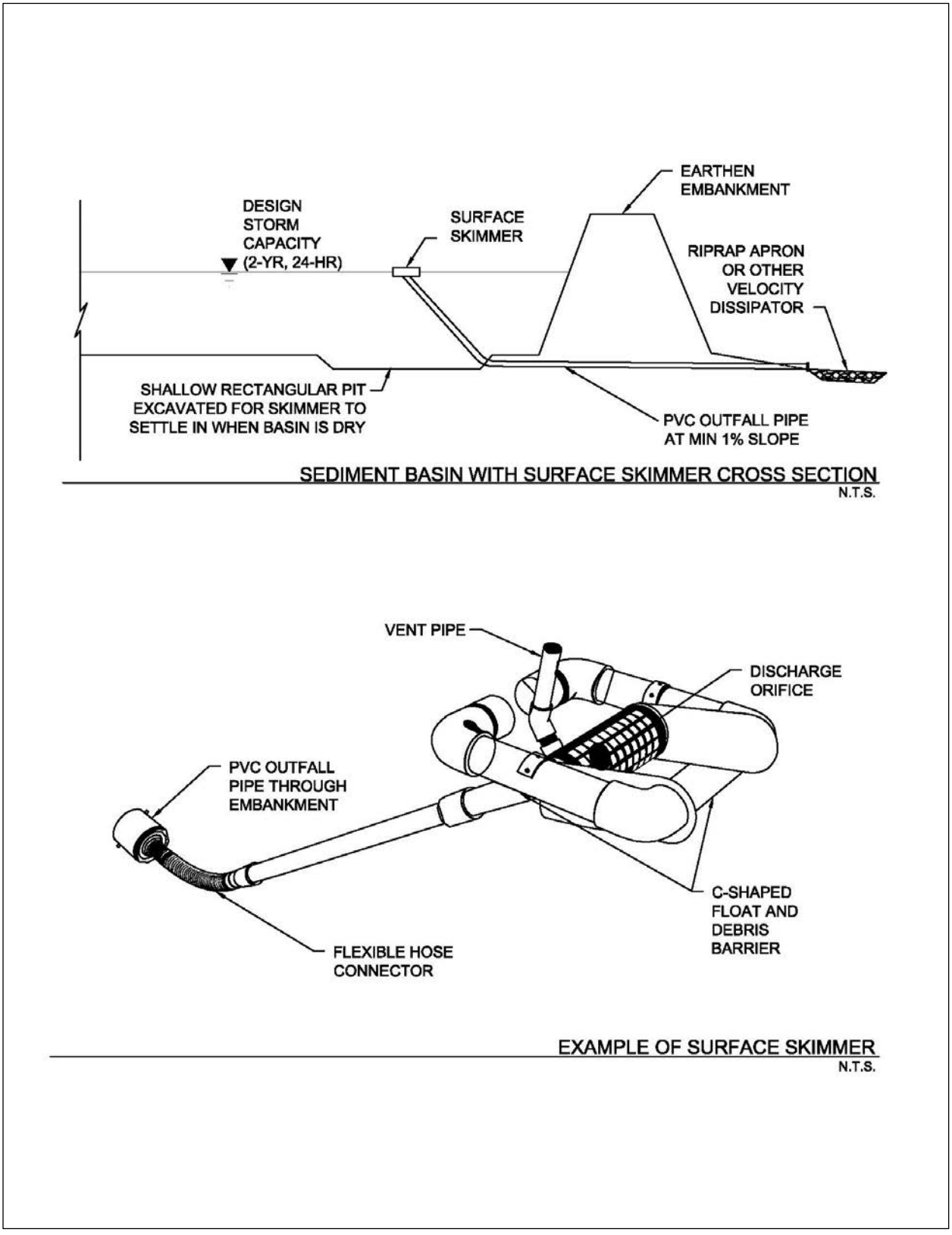


Figure 3.19 Schematics of Sediment Basin with Surface Skimmer
(Source: J.W. Faircloth & Son, Inc.)

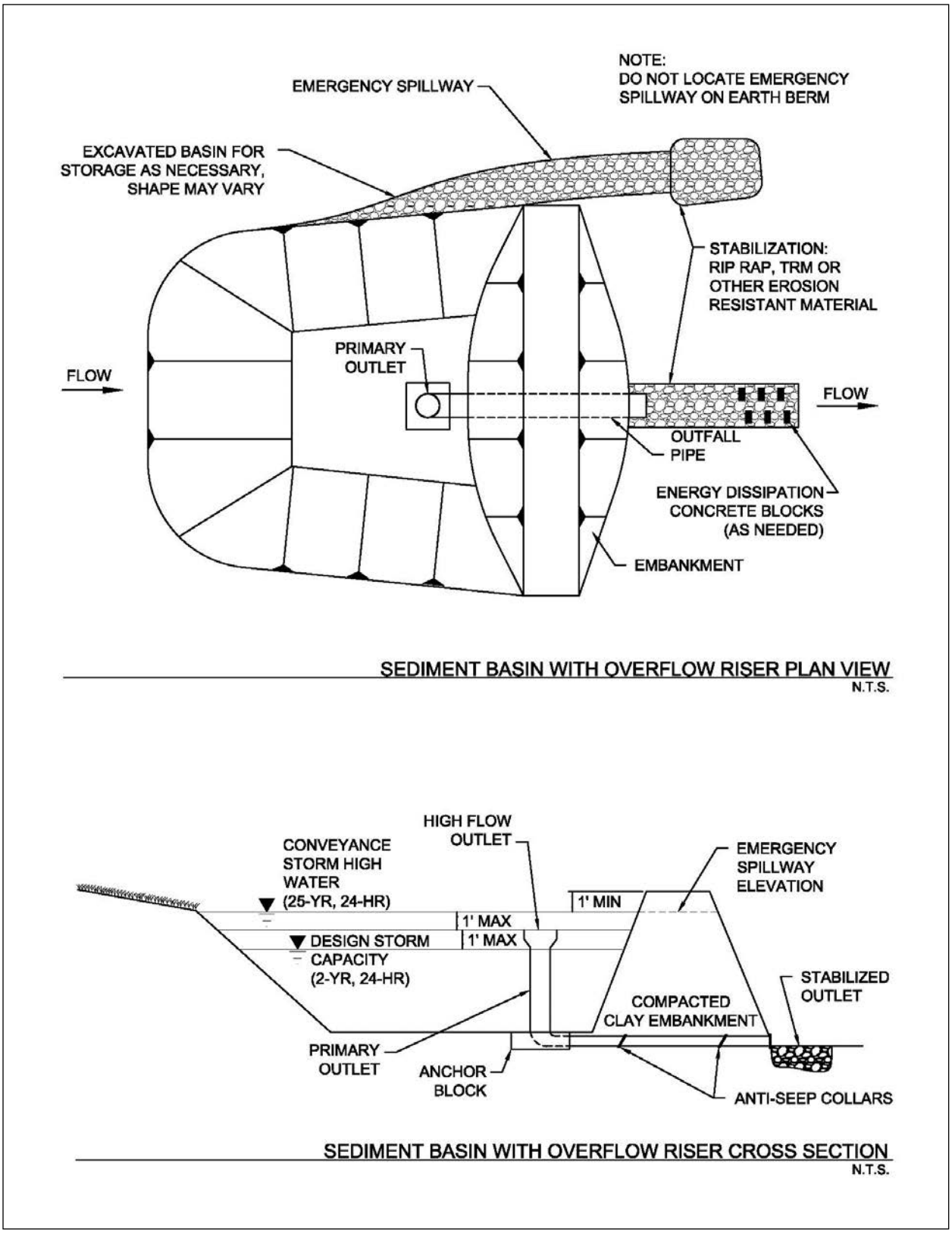


Figure 3.20 Schematics of Sediment Basin with Overflow Riser

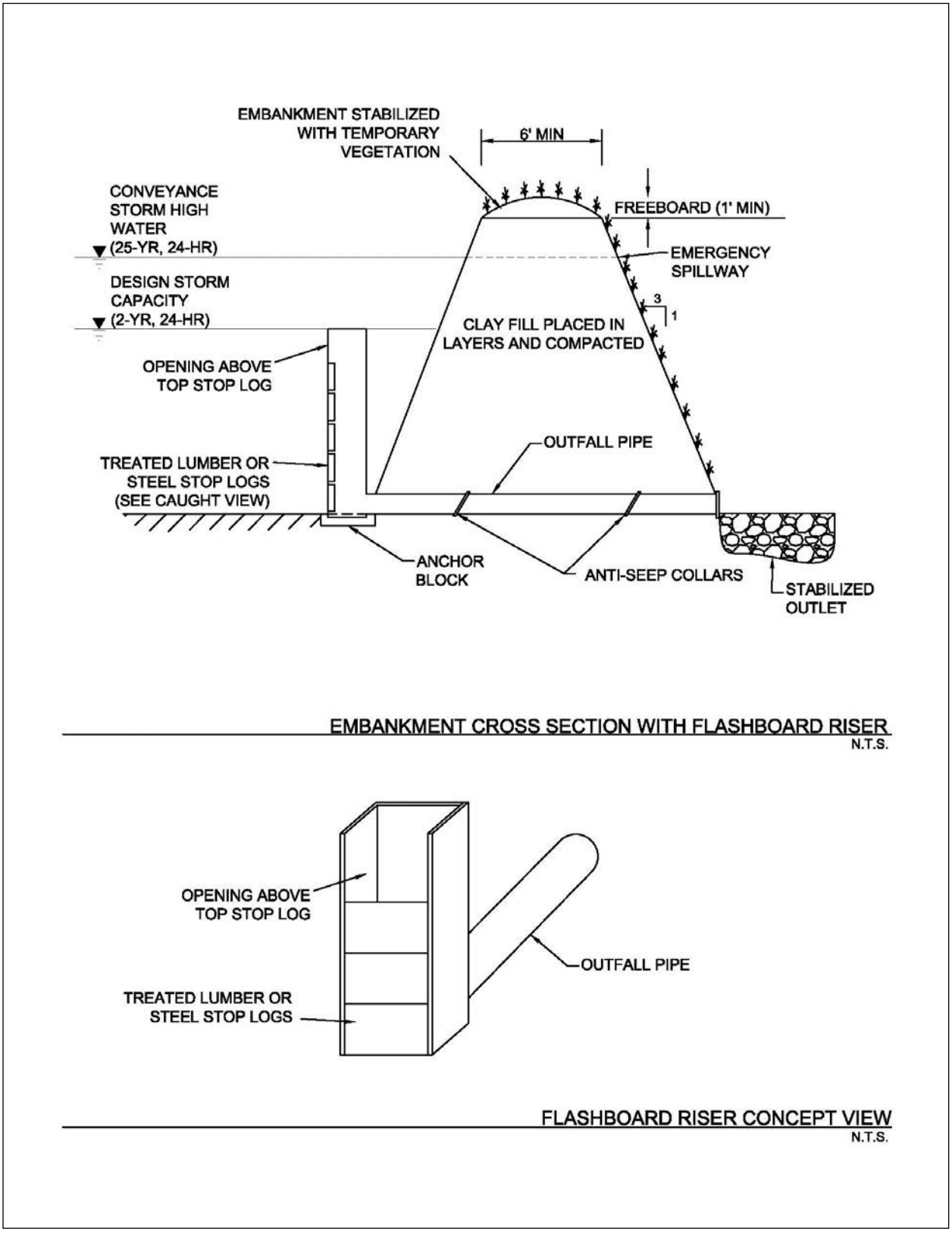


Figure 3.21 Schematics of Basin Embankment with Flashboard Riser

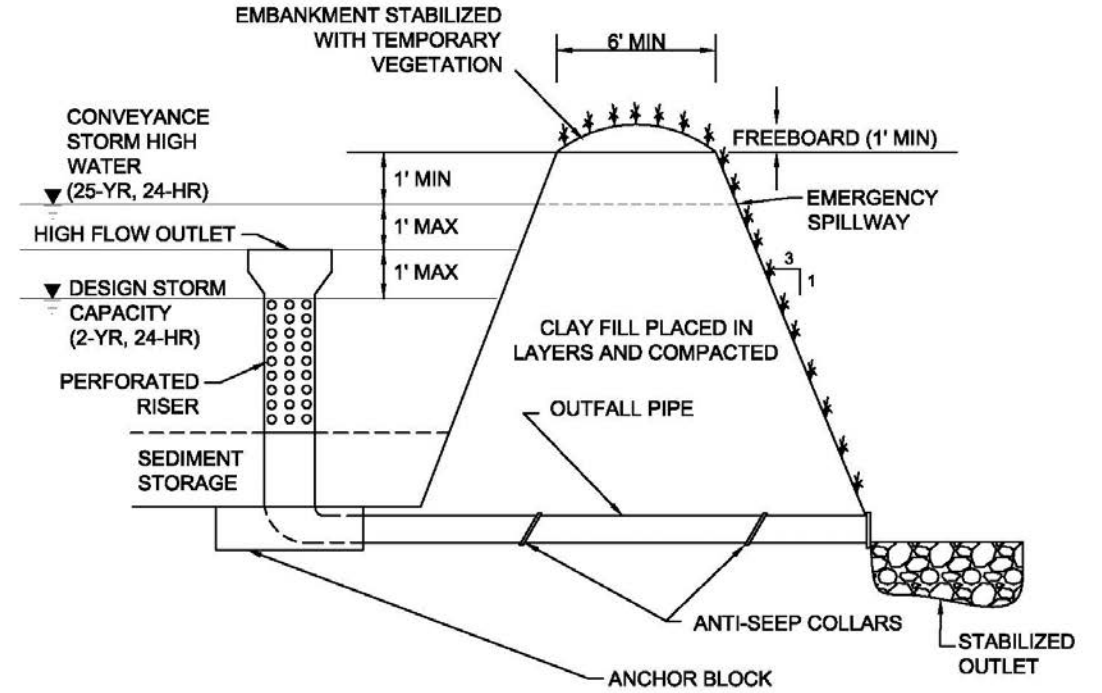


Figure 3.22 Schematic of Basin Embankment with Perforated Riser

3.9.7 Design Procedures

The following procedures provide a step-by-step method for the design of a temporary sediment basin that is smaller than the TCEQ thresholds for state requirements to apply. Criteria in *Section 3.8 of the iSWM Criteria Manual* should be used for the design of permanent basins (dry detention/extended dry detention) and stormwater ponds. *Section 3.9.8 Design Form* should be used to document the design values calculated for the temporary sediment basin.

These design procedures are provided as an example of the steps required to design a temporary sediment basin and are based on a specific type of primary outlet. When designing a sediment basin for a construction site, it's the engineer's responsibility to select the type of outlet that is appropriate based on criteria in the preceding sections and to modify the following procedures as needed to use appropriate calculations for the selected outlet, particularly in Steps 12, 13, and 14.

Step 1 Determine the required basin volume.

The basin volume shall be the calculated volume of runoff from the temporary control design storm (2-year, 24-hour) from each disturbed acre draining to the basin. When rainfall data is not available, a design volume of 3600 cubic feet of storage per acre drained may be used.

For a natural basin, the storage volume may be approximated as follows:

$$\mathbf{V_1 = 0.4 \times A_1 \times D_1} \qquad \mathbf{(3.2)}$$

where:

V_1 = the storage volume in cubic feet

A_1 = the surface area of the flooded area at the crest of the basin outlet, in square feet

D_1 = the maximum depth in feet, measured from the low point in the basin to the crest of the basin riser

Note 1: The volumes may be computed from more precise contour information or other suitable methods.

Note 2: Conversion between cubic feet and cubic yards is as follows:

Number of cubic feet x 0.037 = number of cubic yards

If the volume of the basin is inadequate or embankment height becomes excessive, pursue the use of excavation to obtain the required volume.

Step 2 Determine the basin shape.

The shape of the basin must be such that the length-to-width ratio is at least 4 to 1 according to the following equation:

$$\mathbf{\text{Length-to-width Ratio} = \frac{L}{We}} \qquad \mathbf{(3.3)}$$

where:

We = A/L = the effective width

A = the surface area of the normal pool

L = the length of the flow path from the inflow to the outflow. If there is more than one inflow point, any inflow that carries more than 30 percent of the peak rate of inflow must meet these criteria.

The correct basin length can be obtained by proper site selection, excavation, or the use of baffles. Baffles increase the flow length by interrupting flow and directing it through the basin in a circuitous path to prevent short-circuiting. Porous baffles are recommended. Spacing of baffles should be wide enough to not cause a channeling effect within the basin. Analyze the

flow cross section and velocity between baffles to ensure that velocities are not too fast for settling to occur.

Step 3 Design the embankment.

The side slopes of the embankment should be 3:1 or flatter.

Top width shall be determined by the engineer based on the total height of the embankment.

The area under the embankment should be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, or other objectionable materials. The pool area should also be cleared of all brush and trees.

The embankment fill material should be clay soil from an approved borrow area. It should be clean soil, free from roots, woody vegetation, oversized stones, and rocks.

Step 4 Select the type(s) of outlet(s).

The outlets for the basin may consist of a combination of a primary outlet and emergency spillway or a primary outlet alone. In either case, the outlet(s) must pass the peak runoff expected from the drainage area for the conveyance storm (25-year, 24-hour) without damage to the embankment, structures, or basin.

Step 5 Determine whether the basin will have a separate emergency spillway.

A side channel emergency spillway is required for sediment basins receiving stormwater from more than 10 acres.

Step 6 Determine the elevation of the crest of the basin outlet riser for the required volume.

Step 7 Estimate the elevation of the conveyance storm and the required height of the dam.

(a) If an emergency spillway is included, the crest of the basin outlet riser must be at least 1.0 foot below the crest of the emergency spillway.

(b) If an emergency spillway is included, the elevation of the peak flow through the emergency spillway (which will be the design high water for the conveyance storm) must be at least 1.0 foot below the top of embankment.

(c) If an emergency spillway is not included, the crest of the basin outlet riser must be at least 3 feet below the top of the embankment.

(d) If an emergency spillway is not included, the elevation of the design high water for the conveyance storm must be 2.0 feet below the top of the embankment.

Step 8 Determine the peak rate of runoff for a 25-year storm.

Using SCS TR 55 Urban Hydrology for Small Watersheds or other methods, determine the peak rate of runoff expected from the drainage area of the basin for the conveyance storm. The "C" factor or "CN" value used in the runoff calculation should be derived from analysis of the contributing drainage area at the peak of land disturbance (condition which will create greatest peak runoff).

Step 9 Design the basin outlet.

(a) If an emergency spillway is included, the basin outfall must at least pass the peak rate of runoff from the basin drainage area for the temporary control design storm (2-year, 24-hour).

Q_p = the 2-year peak rate of runoff.

(b) If an emergency spillway is not included, the basin outfall must pass the peak rate of runoff from the basin drainage area for the conveyance storm (25-year, 24-hour).

Q_{25} = the 25-year peak rate of runoff.

(c) Refer to Figure 3.23, where h is the difference between the elevation of the crest of the basin outlet riser and the elevation of the crest of the emergency spillway.

(d) Enter Figure 3.24 with Q_p. Choose the smallest riser which will pass the required flow with the available head, h.

(e) Refer to Figure 3.23, where H is the difference in elevation of the centerline of the outlet of the outfall and the crest of the emergency spillway. L is the length of the barrel through the embankment.

(f) Enter Table 3.5 or Table 3.6 with H. Choose the smallest size outlet that will pass the flow provided by the riser. If L is other than 70 feet, make the necessary correction.

(g) The basin riser shall consist of a solid (non-perforated), vertical pipe or box of corrugated metal joined by a watertight connection to a horizontal pipe (outfall) extending through the embankment and discharging beyond the downstream toe of the fill. Another approach is to utilize a perforated vertical riser section surrounded by filter stone.

(h) The basin outfall, which extends through the embankment, shall be designed to carry the flow provided by the riser with the water level at the crest of the emergency spillway. The connection between the riser and the outfall must be watertight. The outlet of the outfall must be protected to prevent erosion or scour of downstream areas.

(i) Weirs, skimmers and other types of outlets may be used if accompanied with appropriate calculations.

Step 10 Design the emergency spillway.

(a) The emergency spillway must pass the remainder of the 25-year peak rate of runoff not carried by the basin outlet.

(b) Compute: $Q_e = Q_{25} - Q_p$

(c) Refer to Figure 3.25 and Table 3.7.

(d) Determine approximate permissible values for b, the bottom width; s, the slope of the exit channel; and X, minimum length of the exit channel.

(e) Enter Table 3.7 and choose the exit channel cross-section which passes the required flow and meets the other constraints of the site.

(f) Notes:

1. The maximum permissible velocity for vegetated waterways must be considered when designing an exit channel.
2. For a given Hp, a decrease in the exit slope from S as given in the table decreases spillway discharge, but increasing the exit slope from S does not increase discharge. If an exit slope (Se) steeper than S is used, then the exit should be considered an open channel and analyzed using the Manning's Equation.
3. Data to the right of heavy vertical lines should be used with caution, as the resulting sections will be either poorly proportioned or have excessive velocities.

(g) The emergency spillway should not be constructed over fill material.

(h) The emergency spillway should be stabilized with rock riprap or temporary vegetation upon completion of the basin.

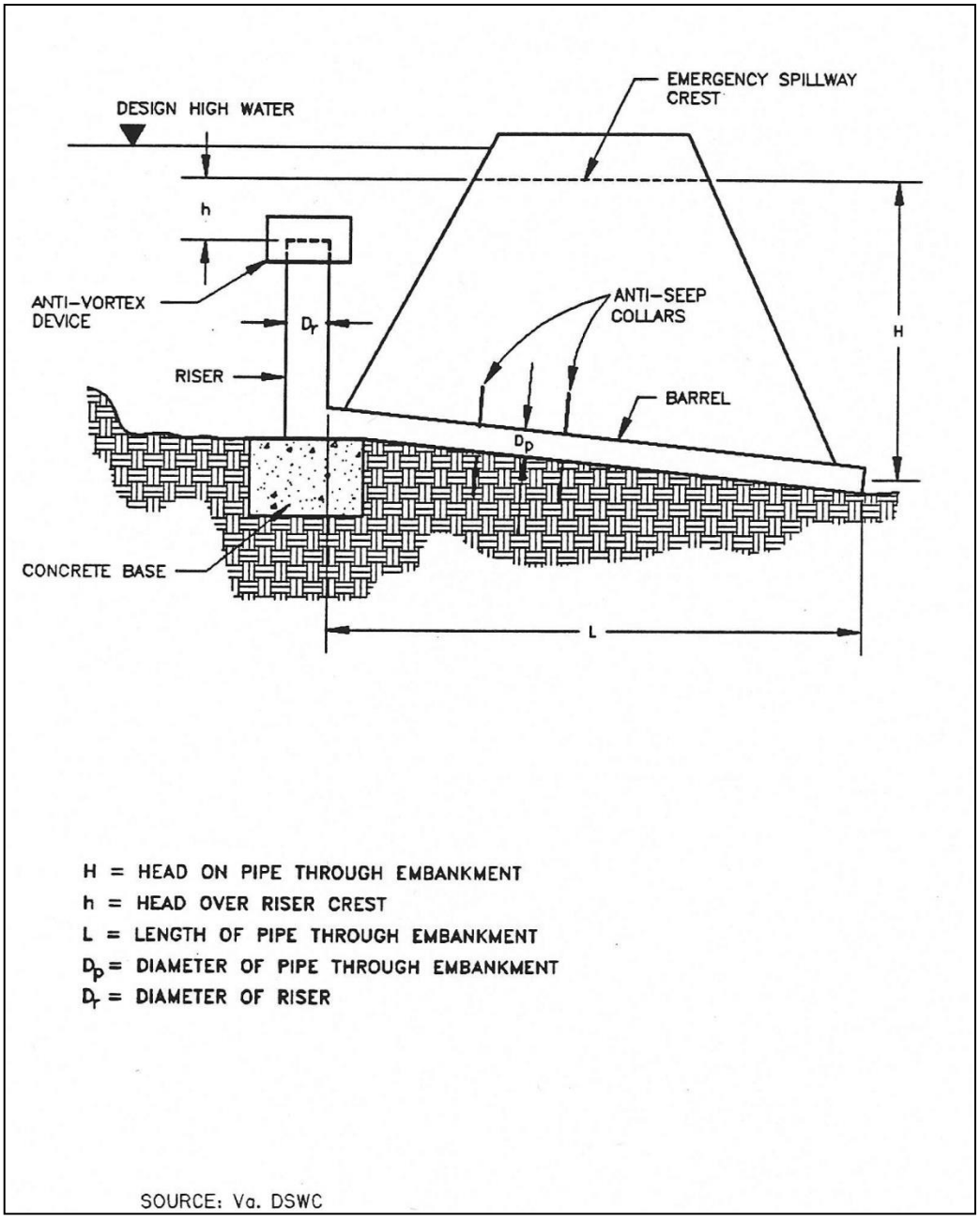


Figure 3.23 Example of Basin Outlet Design

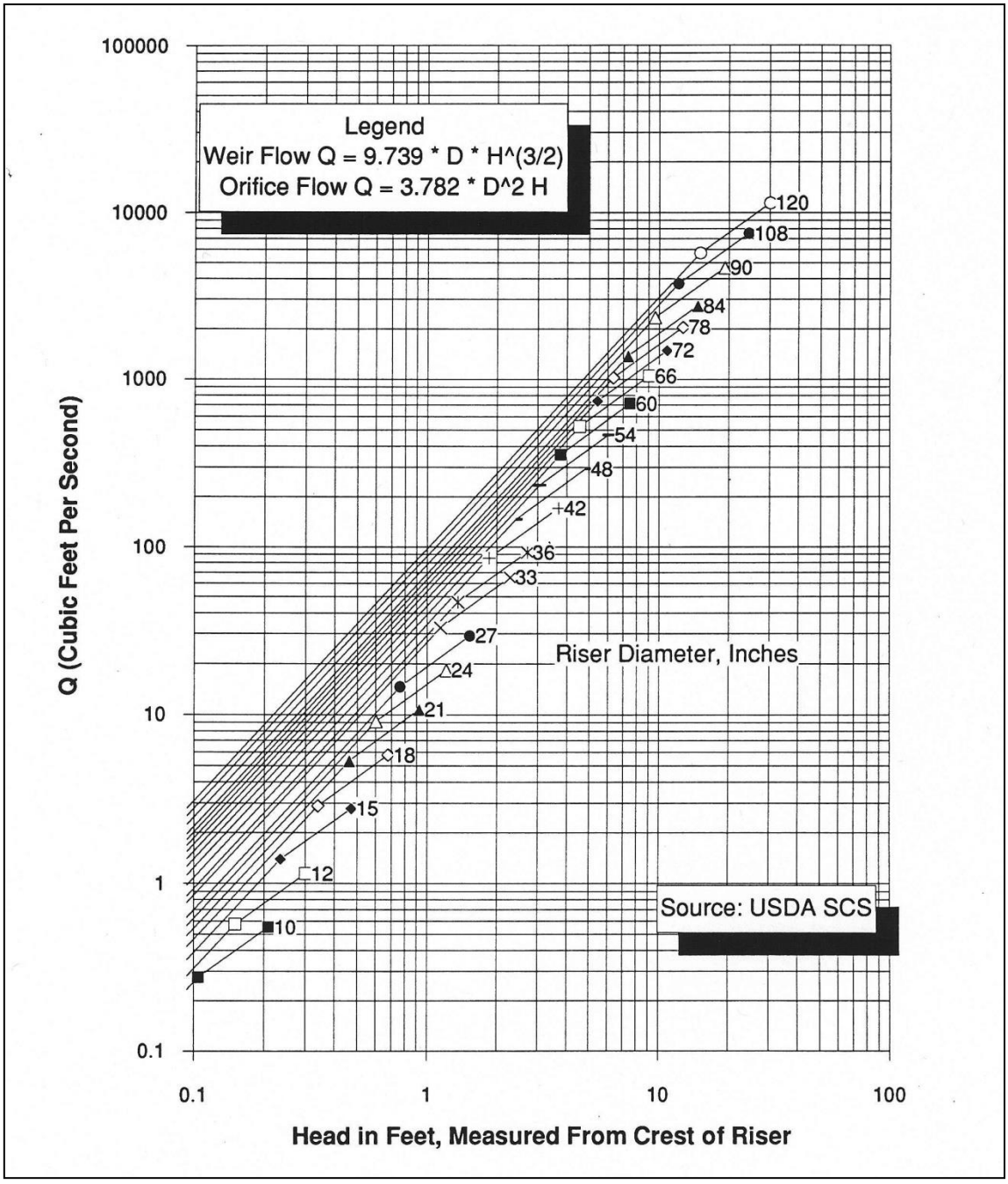
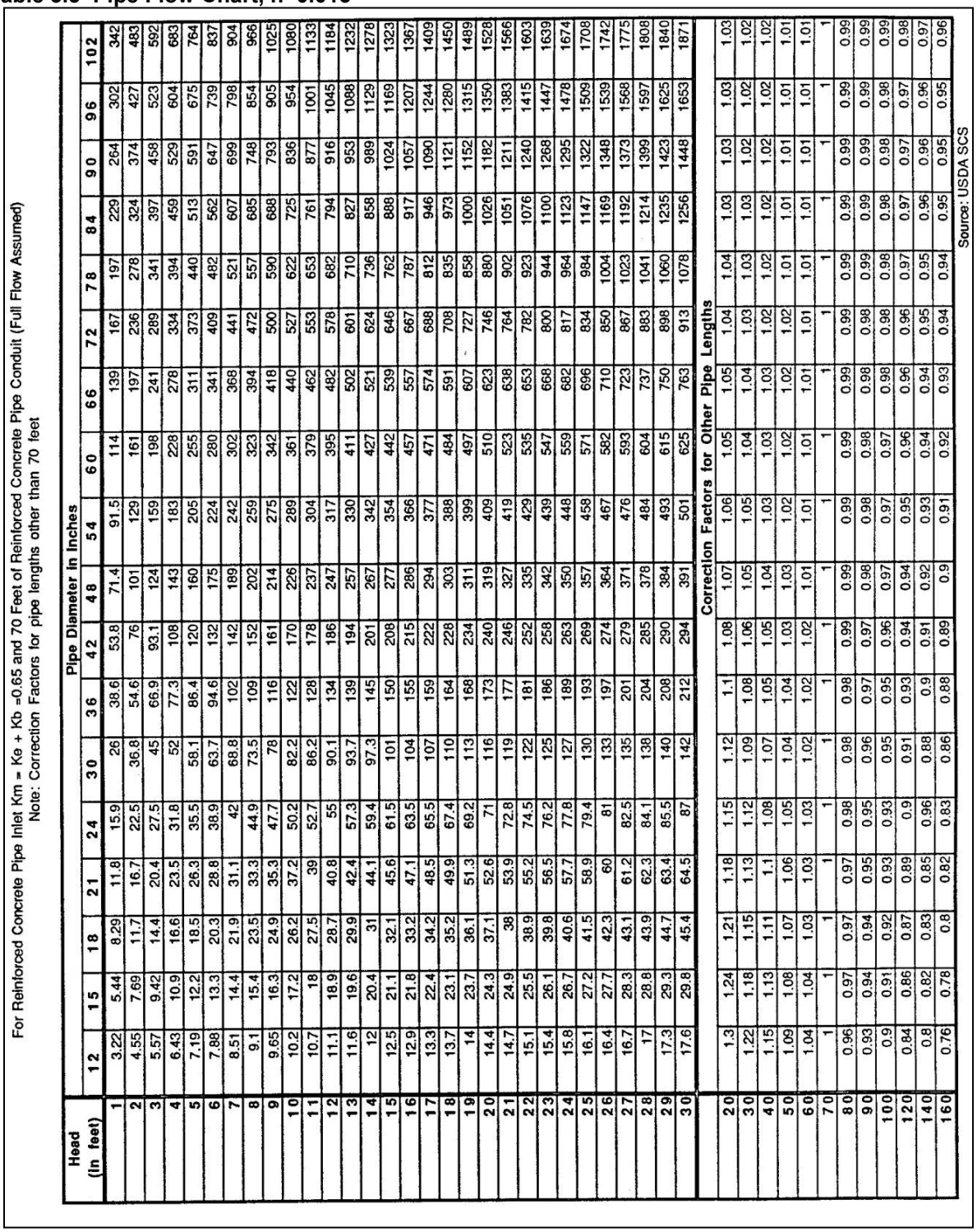


Figure 3.24 Riser Inflow Curves for Basin Outlet Design

Table 3.5 Pipe Flow Chart, n=0.013

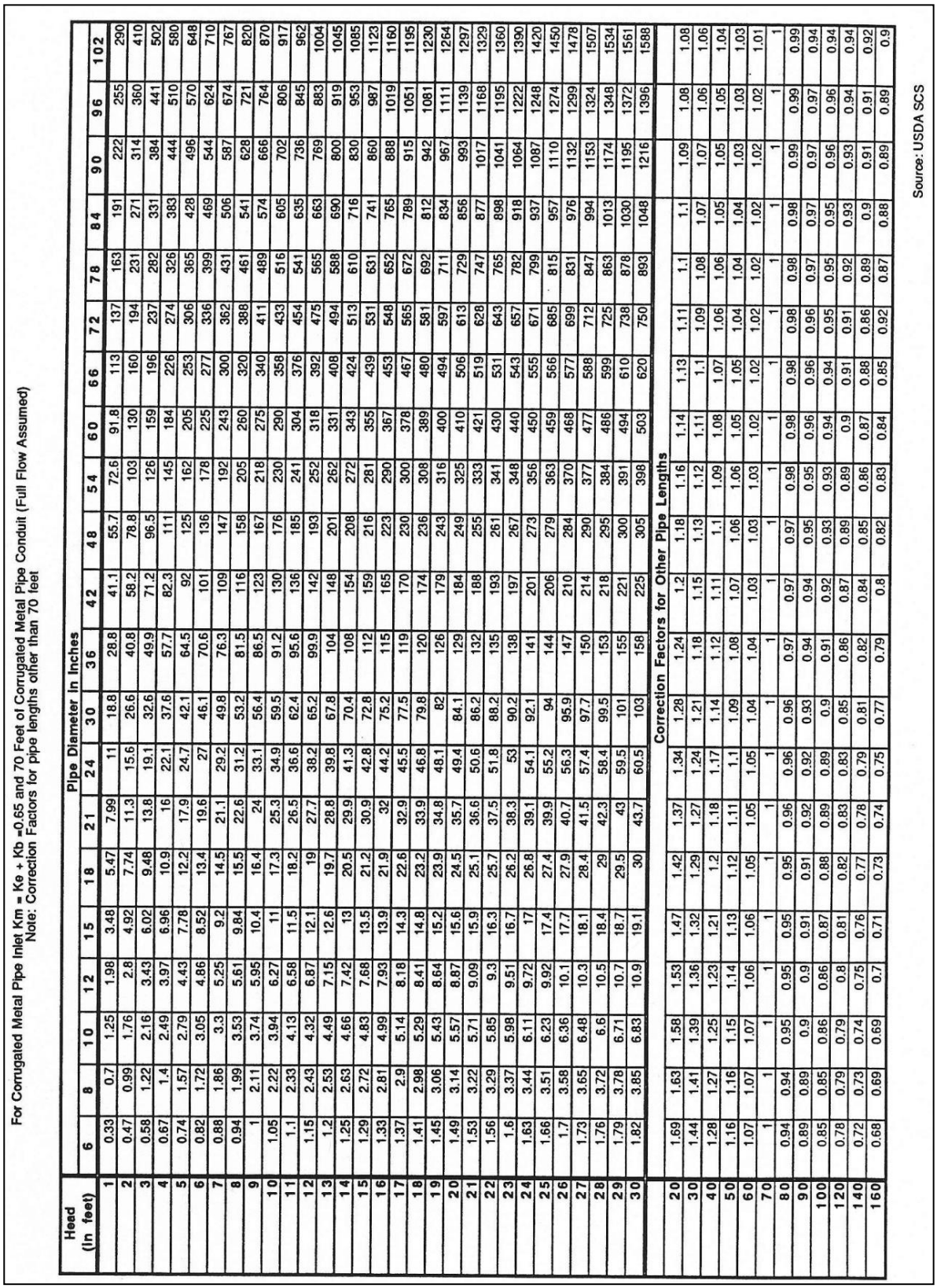


For Reinforced Concrete Pipe Inlet Km = Ke + Kb =0.65 and 70 Feet of Reinforced Concrete Pipe Conduit (Full Flow Assumed)
Note: Correction Factors for pipe lengths other than 70 feet

Head (in feet)	Pipe Diameter in Inches																	
	12	15	18	21	24	30	36	42	48	54	60	66	72	78	84	90	96	102
1	3.22	5.44	8.29	11.8	15.9	26	38.6	53.8	71.4	91.5	114	139	167	197	229	264	302	342
2	4.55	7.69	11.7	16.7	22.5	36.8	54.6	76	101	129	161	197	236	278	324	374	427	483
3	5.57	9.42	14.4	20.4	27.5	45	66.9	93.1	124	159	198	241	289	341	397	458	523	592
4	6.43	10.9	16.6	23.5	31.8	52	77.3	108	143	183	228	278	334	394	459	529	604	683
5	7.19	12.2	18.5	26.3	35.5	58.1	86.4	120	160	205	255	311	373	440	513	591	675	764
6	7.88	13.3	20.3	28.8	38.9	63.7	94.6	132	175	224	280	341	409	482	562	647	739	837
7	8.51	14.4	21.9	31.1	42	68.8	102	142	189	242	302	368	441	521	607	699	798	904
8	9.1	15.4	23.5	33.3	44.9	73.5	109	152	202	259	323	394	472	557	685	748	854	966
9	9.65	16.3	24.9	35.3	47.7	78	116	161	214	275	342	418	500	590	688	793	905	1025
10	10.2	17.2	26.2	37.2	50.2	82.2	122	170	226	289	361	440	527	622	725	836	954	1080
11	10.7	18	27.5	39	52.7	86.2	128	178	237	304	379	462	553	653	761	877	1001	1133
12	11.1	18.9	28.7	40.8	55	90.1	134	186	247	317	395	482	578	682	794	916	1045	1184
13	11.6	19.6	29.9	42.4	57.3	93.7	139	194	257	330	411	502	601	710	827	953	1088	1232
14	12	20.4	31	44.1	59.4	97.3	145	201	267	342	427	521	624	736	858	989	1129	1278
15	12.5	21.1	32.1	45.6	61.5	101	150	208	277	354	442	539	646	762	888	1024	1169	1323
16	12.9	21.8	33.2	47.1	63.5	104	155	215	286	366	457	557	667	787	917	1057	1207	1367
17	13.3	22.4	34.2	48.5	65.5	107	159	222	294	377	471	574	688	812	946	1090	1244	1409
18	13.7	23.1	35.2	49.9	67.4	110	164	228	303	388	484	591	708	835	973	1121	1280	1450
19	14	23.7	36.1	51.3	69.2	113	168	234	311	399	497	607	727	858	1000	1152	1315	1489
20	14.4	24.3	37.1	52.6	71	116	173	240	319	409	510	623	746	880	1026	1182	1350	1528
21	14.7	24.9	38	53.9	72.8	119	177	246	327	419	523	638	764	902	1051	1211	1383	1566
22	15.1	25.5	38.9	55.2	74.5	122	181	252	335	429	535	653	782	923	1076	1240	1415	1603
23	15.4	26.1	39.8	56.5	76.2	125	186	258	342	439	547	668	800	944	1100	1268	1447	1639
24	15.8	26.7	40.6	57.7	77.8	127	189	263	350	448	559	682	817	964	1123	1295	1478	1674
25	16.1	27.2	41.5	58.9	79.4	130	193	269	357	458	571	696	834	984	1147	1322	1509	1708
26	16.4	27.7	42.3	60	81	133	197	274	364	467	582	710	850	1004	1169	1348	1539	1742
27	16.7	28.3	43.1	61.2	82.5	135	201	279	371	476	593	723	867	1023	1192	1373	1568	1775
28	17	28.8	43.9	62.3	84.1	138	204	285	378	484	604	737	883	1041	1214	1399	1597	1808
29	17.3	29.3	44.7	63.4	85.5	140	208	290	384	493	615	750	898	1060	1235	1423	1625	1840
30	17.6	29.8	45.4	64.5	87	142	212	294	391	501	625	763	913	1078	1256	1448	1653	1871
Correction Factors for Other Pipe Lengths																		
20	1.3	1.24	1.21	1.18	1.15	1.12	1.1	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.03
30	1.22	1.18	1.15	1.13	1.12	1.09	1.08	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02	1.02	1.02
40	1.15	1.13	1.11	1.1	1.08	1.07	1.05	1.05	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02
50	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01
60	1.04	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80	0.96	0.97	0.97	0.97	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
90	0.93	0.94	0.94	0.95	0.95	0.96	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99
100	0.9	0.91	0.92	0.93	0.93	0.95	0.95	0.96	0.97	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.99
120	0.84	0.86	0.87	0.89	0.9	0.91	0.93	0.94	0.94	0.95	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.98
140	0.8	0.82	0.83	0.85	0.96	0.88	0.9	0.91	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.97
160	0.76	0.78	0.8	0.82	0.83	0.86	0.88	0.89	0.9	0.91	0.92	0.93	0.94	0.94	0.95	0.95	0.95	0.96

Source: USDA SCS

Table 3.6 Pipe Flow Chart, n=0.025



For Corrugated Metal Pipe Inlet Km = Ke + Kb =0.65 and 70 Feet of Corrugated Metal Pipe Conduit (Full Flow Assumed)
Note: Correction Factors for pipe lengths other than 70 feet

Head (In feet)	Pipe Diameter In Inches																							
	6	8	10	12	15	18	21	24	30	36	42	48	54	60	66	72	78	84	90	96	102
1	0.33	0.7	1.25	1.98	3.48	5.47	7.99	11	18.8	28.8	41.1	55.7	72.6	91.8	113	137	163	191	222	255	290
2	0.47	0.99	1.76	2.8	4.92	7.74	11.3	15.6	26.6	40.8	58.2	78.8	103	130	160	194	231	271	314	360	410
3	0.58	1.22	2.16	3.43	6.02	9.48	13.8	19.1	32.6	49.9	71.2	96.5	126	159	196	237	282	331	384	441	502
4	0.67	1.4	2.49	3.97	6.96	10.9	16	22.1	37.6	57.7	82.3	111	145	184	226	274	326	383	444	510	580
5	0.74	1.57	2.79	4.43	7.78	12.2	17.9	24.7	42.1	64.5	92	125	162	205	253	306	365	428	496	570	648
6	0.82	1.72	3.05	4.86	8.52	13.4	19.6	27	46.1	70.6	101	136	178	225	277	336	399	469	544	624	710
7	0.88	1.86	3.3	5.25	9.2	14.5	21.1	29.2	49.8	76.3	109	147	192	243	300	362	431	506	587	674	767
8	0.94	1.99	3.53	5.61	9.84	15.5	22.6	31.2	53.2	81.5	116	158	205	260	320	388	461	541	628	721	820
9	1	2.11	3.74	5.95	10.4	16.4	24	33.1	56.4	86.5	123	167	218	275	340	411	489	574	666	764	870
10	1.05	2.22	3.94	6.27	11	17.3	25.3	34.9	59.5	91.2	130	176	230	290	358	433	516	605	702	806	917
11	1.1	2.33	4.13	6.58	11.5	18.2	26.5	36.6	62.4	95.6	136	185	241	304	376	454	541	635	736	845	962
12	1.15	2.43	4.32	6.87	12.1	19	27.7	38.2	65.2	99.9	142	193	252	318	392	475	565	663	769	883	1004
13	1.2	2.53	4.49	7.15	12.6	19.7	28.8	39.8	67.8	104	148	201	262	331	408	494	588	690	800	919	1045
14	1.25	2.63	4.66	7.42	13	20.5	29.9	41.3	70.4	108	154	208	272	343	424	513	610	716	830	953	1085
15	1.29	2.72	4.83	7.68	13.5	21.2	30.9	42.8	72.8	112	159	216	281	355	439	531	631	741	860	987	1123
16	1.33	2.81	4.99	7.93	13.9	21.9	32	44.2	75.2	115	165	223	290	367	453	548	652	765	888	1019	1160
17	1.37	2.9	5.14	8.18	14.3	22.6	32.9	45.5	77.5	119	170	230	300	378	467	565	672	789	915	1051	1195
18	1.41	2.98	5.29	8.41	14.8	23.2	33.9	46.8	79.8	120	174	236	308	389	480	581	692	812	942	1081	1230
19	1.45	3.06	5.43	8.64	15.2	23.9	34.8	48.1	82	126	179	243	316	400	494	597	711	834	967	1111	1264
20	1.49	3.14	5.57	8.87	15.6	24.5	35.7	49.4	84.1	129	184	249	325	410	506	613	729	856	993	1139	1297
21	1.53	3.22	5.71	9.09	15.9	25.1	36.6	50.6	86.2	132	188	255	333	421	519	628	747	877	1017	1168	1329
22	1.56	3.29	5.85	9.3	16.3	25.7	37.5	51.8	88.2	135	193	261	341	430	531	643	765	898	1041	1195	1360
23	1.6	3.37	5.98	9.51	16.7	26.2	38.3	53	90.2	138	197	267	348	440	543	657	782	918	1064	1222	1390
24	1.63	3.44	6.11	9.72	17	26.8	39.1	54.1	92.1	141	201	273	356	450	555	671	799	937	1087	1248	1420
25	1.66	3.51	6.23	9.92	17.4	27.4	39.9	55.2	94	144	206	279	363	459	566	685	815	957	1110	1274	1450
26	1.7	3.58	6.36	10.1	17.7	27.9	40.7	56.3	95.9	147	210	284	370	468	577	699	831	976	1132	1299	1478
27	1.73	3.65	6.48	10.3	18.1	28.4	41.5	57.4	97.7	150	214	290	377	477	588	712	847	994	1153	1324	1507
28	1.76	3.72	6.6	10.5	18.4	29	42.3	58.4	99.5	153	218	295	384	486	599	725	863	1013	1174	1348	1534
29	1.79	3.78	6.71	10.7	18.7	29.5	43	59.5	101	155	221	300	391	494	610	738	878	1030	1195	1372	1561
30	1.82	3.85	6.83	10.9	19.1	30	43.7	60.5	103	158	225	305	398	503	620	750	893	1048	1216	1396	1588
Correction Factors for Other Pipe Lengths																					
20	1.69	1.63	1.58	1.53	1.47	1.42	1.37	1.34	1.28	1.24	1.2	1.18	1.16	1.14	1.13	1.11	1.1	1.1	1.09	1.08	1.08
30	1.44	1.41	1.39	1.36	1.32	1.29	1.27	1.24	1.21	1.18	1.15	1.13	1.12	1.11	1.1	1.09	1.08	1.07	1.07	1.06	1.06
40	1.28	1.27	1.25	1.23	1.21	1.2	1.18	1.17	1.14	1.12	1.11	1.1	1.09	1.08	1.07	1.06	1.06	1.05	1.05	1.05	1.04
50	1.16	1.16	1.15	1.14	1.13	1.12	1.11	1.1	1.09	1.08	1.07	1.06	1.06	1.05	1.05	1.04	1.04	1.04	1.03	1.03	1.03
60	1.07	1.07	1.07	1.06	1.06	1.05	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01
70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80	0.94	0.94	0.95	0.95	0.95	0.95	0.96	0.96	0.96	0.97	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99
90	0.89	0.89	0.9	0.9	0.91	0.91	0.92	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.97	0.97	0.97	0.97	0.94
100	0.85	0.85	0.86	0.86	0.86	0.87	0.88	0.89	0.89	0.9	0.91	0.92	0.93	0.93	0.94	0.94	0.95	0.95	0.95	0.96	0.94
120	0.78	0.79	0.79	0.8	0.81	0.82	0.83	0.83	0.85	0.86	0.87	0.89	0.89	0.9	0.91	0.91	0.92	0.93	0.93	0.94	0.94
140	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.81	0.82	0.84	0.85	0.86	0.87	0.88	0.86	0.89	0.9	0.91	0.91	0.92
160	0.68	0.69	0.69	0.7	0.71	0.73	0.74	0.75	0.77	0.79	0.8	0.82	0.83	0.84	0.85	0.92	0.87	0.88	0.89	0.89	0.9

Source: USDA SCS

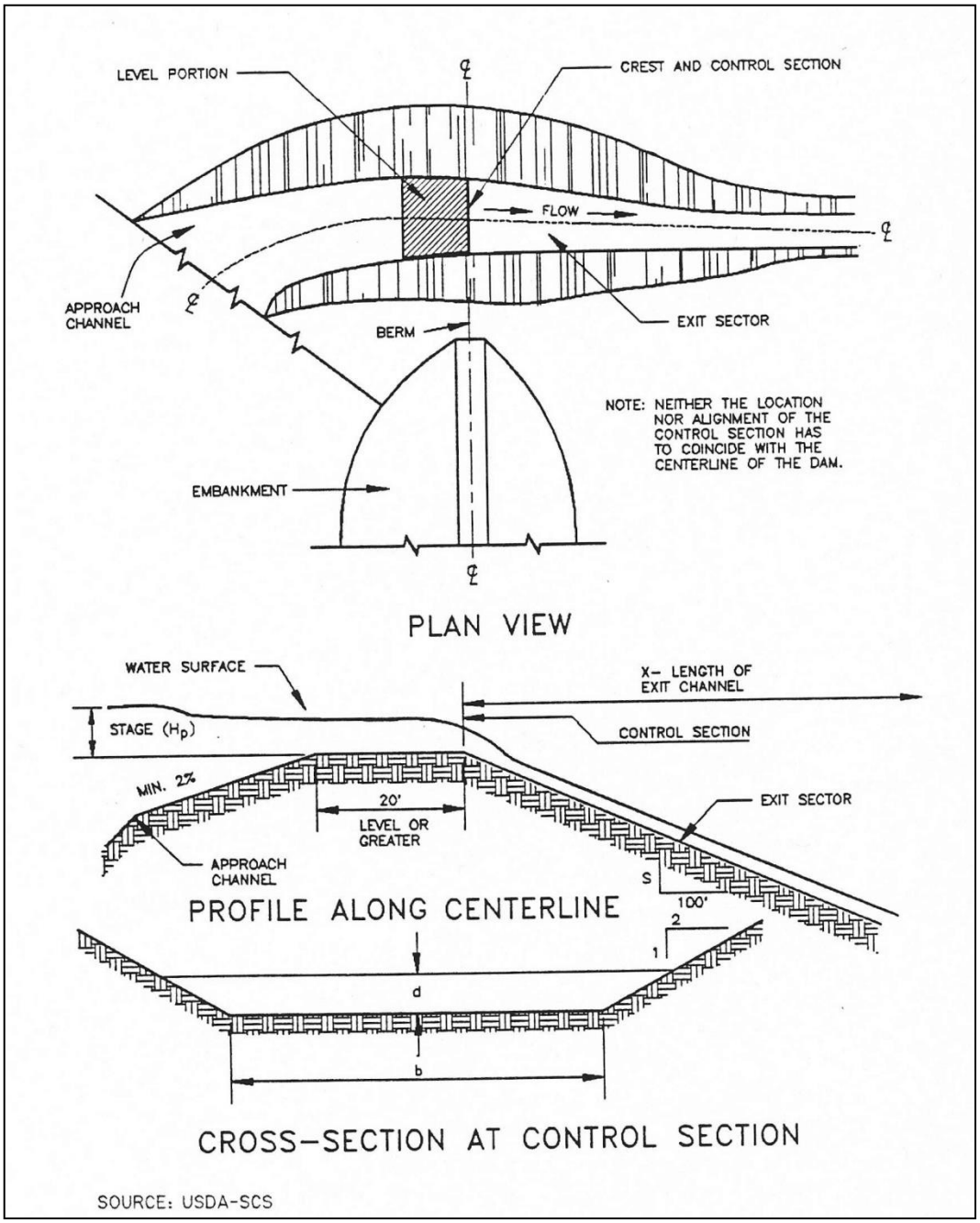


Figure 3.25 Example of Excavated Earth Spillway Design

Table 3.7 Design Data for Earth Spillways

Stage (Hp) In Feet	Spillway Variables	Bottom Width (b) In Feet																
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
0.5	Q	6	7	8	10	11	13	14	15	17	18	20	21	22	24	25	27	28
	V	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	S	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	X	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
0.6	Q	8	10	12	14	16	18	20	22	24	26	28	30	32	34	35	37	39
	V	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	S	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
	X	36	36	36	36	36	36	37	37	37	37	37	37	37	37	37	37	37
0.7	Q	11	13	16	18	20	23	25	28	30	33	35	38	41	43	44	46	48
	V	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
	S	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
	X	39	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	41
0.8	Q	13	16	19	22	26	29	32	35	38	42	45	46	48	51	54	57	60
	V	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
	S	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	X	44	44	44	44	44	45	45	45	45	45	45	45	45	45	45	45	45
0.9	Q	17	20	24	28	32	35	39	43	47	51	53	57	60	64	68	71	75
	V	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	S	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
	X	47	47	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49
1	Q	20	24	29	33	38	42	47	51	56	61	63	68	72	77	81	86	90
	V	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	S	3.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	X	51	51	51	51	52	52	52	52	52	52	52	52	52	52	52	52	52
1.1	Q	23	28	34	39	44	49	54	60	65	70	74	79	84	89	95	100	105
	V	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	S	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	X	55	55	55	55	55	55	55	56	56	56	56	56	56	56	56	56	56
1.2	Q	28	33	40	45	51	58	64	69	76	80	86	92	98	104	110	116	122
	V	4.4	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	S	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	X	58	58	59	59	59	59	59	59	60	60	60	60	60	60	60	60	60
1.3	Q	32	38	46	53	58	65	73	80	86	91	99	106	112	119	125	133	140
	V	4.5	4.6	4.6	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
	S	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	X	62	62	62	63	63	63	63	63	63	63	63	64	64	64	64	64	64
1.4	Q	37	44	51	59	66	74	82	90	96	103	111	119	127	134	143	150	158
	V	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	S	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	X	65	66	66	66	66	67	67	67	67	67	67	68	68	68	68	68	69

Table 3.7 Design Data for Earth Spillways (continued)

Stage (Hp) In Feet	Spillway Variables	Bottom Width (b) In Feet																
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
1.5	Q	41	50	58	66	75	85	92	101	108	116	125	133	142	150	160	169	178
	V	4.8	4.9	5	5	5	5	5	5	5	5	5	5	5	5	5.1	5.1	5.1
	S	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
	X	69	69	70	70	71	71	71	71	71	71	71	72	72	72	72	72	72
1.6	Q	46	56	65	75	84	94	104	112	122	132	142	149	158	168	178	187	197
	V	5	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	S	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	X	72	74	74	75	75	76	76	76	76	76	76	76	76	76	76	76	76
1.7	Q	52	62	72	83	94	105	115	126	135	145	156	167	175	187	196	206	217
	V	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	S	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	X	76	78	79	80	80	80	80	80	80	80	80	80	80	80	80	80	80
1.8	Q	58	69	81	93	104	116	127	138	150	160	171	182	194	204	214	226	233
	V	5.3	5.4	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6
	S	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
	X	80	82	83	84	84	84	84	84	84	84	84	84	84	84	84	84	84
1.9	Q	64	76	88	102	114	127	140	152	164	175	188	201	213	225	235	248	260
	V	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
	S	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
	X	84	85	86	87	88	88	88	88	88	88	88	88	88	88	88	88	88
2	Q	71	83	97	111	125	138	153	164	178	193	204	218	232	245	256	269	283
	V	5.6	5.7	5.7	5.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9
	S	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	X	88	90	91	91	91	91	92	92	92	92	92	92	92	92	92	92	92
2.1	Q	77	91	107	122	135	149	162	177	192	207	220	234	250	267	276	291	305
	V	5.7	5.8	5.9	5.9	5.9	5.9	5.9	6	6	6	6	6	6	6	6	6	6
	S	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	X	92	93	95	95	95	95	95	95	95	96	96	96	96	96	96	96	96
2.2	Q	84	100	116	131	146	163	177	194	210	224	238	253	269	288	301	314	330
	V	5.9	5.9	6	6	6	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.2	6.2	6.2	6.2
	S	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	X	96	98	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100
2.3	Q	90	108	124	140	158	175	193	208	226	243	258	275	292	306	323	341	354
	V	6	6.1	6.1	6.1	6.2	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	S	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	X	100	102	102	103	103	103	104	104	104	105	105	105	105	105	105	105	105
2.4	Q	99	116	136	152	170	189	206	224	241	260	275	294	312	327	346	364	378
	V	6.1	6.2	6.2	6.3	6.3	6.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
	S	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	X	105	105	106	107	107	108	108	108	108	109	109	109	109	109	109	109	109

Source: USDA - SCS

Step 11 Re-estimate the elevation of the design high water and the top of the dam based upon the design of the basin outlet and the emergency spillway.

Step 12 Design the anti-vortex device and trash rack.

If an outfall riser is used, an anti-vortex device and trash rack shall be attached to the top of the basin riser to improve the flow of water into the outfall and prevent floating debris from being carried out of the basin.

This design procedure for the anti-vortex device and trash rack refers only to round riser pipes of corrugated metal. There are numerous ways to provide protection for concrete pipe; these include various hoods and grates and rebar configurations which should be a part of project-specific design and will frequently be a part of a permanent structure.

Refer to Figure 3.26 and Table 3.8. Choose cylinder size, support bars, and top requirements from Table 3.8 based on the diameter of the riser pipe.

Step 13 Design the anchoring for the basin outlet.

The basin outlet must be firmly anchored to prevent its floating.

If the riser is over 10 feet high, the forces acting on the spillway must be calculated. A method of anchoring the spillway which provides a safety factor of 1.25 must be used (downward forces = 1.25 x upward forces).

If the riser is 10 feet or less in height, choose one of the two methods in Figure 3.27 to anchor the basin outlet.

Determine the number and spacing of anti-seep collars for the outfall pipe through the embankment.

Step 14 Provide for dewatering.

(a) Use a modified version of the discharge equation for a vertical orifice and a basic equation for the area of a circular orifice.

Naming the variables:

- A = flow area of orifice, in square feet
- D = diameter of circular orifice, in inches
- h = average driving head (maximum possible head measured from radius of orifice to crest of basin outlet divided by 2), in feet
- Q = volumetric flow rate through orifice needed to achieve approximate 6-hour drawdown, cubic feet per second
- S = total storage available in dry storage area, cubic feet
- Q = S/21,600 seconds

(b) An alternative approach for dewatering is the use of a perforated riser (0.75” to 1” diameter holes spaced every 12 inch horizontally and 8 inch vertically) with 1½ inch to 2 inch filter stone stacked around the exterior.

Use S for basin and find Q. Then substitute in calculated Q and find A:

$$A = \frac{Q}{(0.6) \times (64.32 \times \frac{h}{2})} \qquad (3.4)$$

Then, substitute in calculated A and find d:

$$d^* = 2 \times \frac{(A)}{(3.14)} \qquad (3.5)$$

Diameter of the dewatering orifice should never be less than 3 inches in order to help prevent clogging by soil or debris.

Flexible tubing should be at least 2 inches larger in diameter than the calculated orifice to promote improved flow characteristics.

Additional design guidance for orifices and perforated risers are in *Section 2.2.2 of the Hydraulics Technical Manual*.

(c) If a surface skimmer is used as the basin's primary outlet, it may also be used to dewater the basin. Orifice flowrates for the skimmer will be provided by the manufacturer.

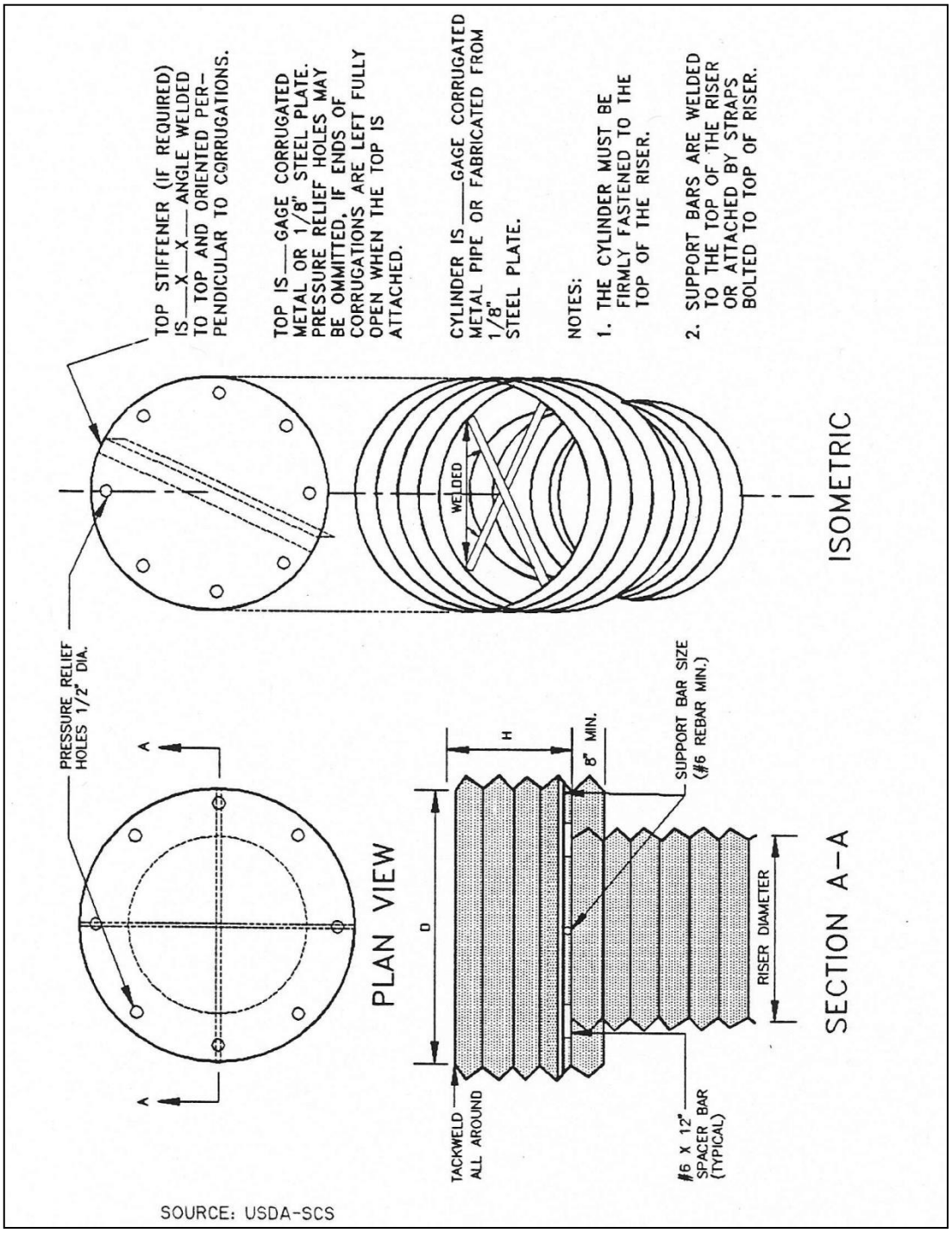


Figure 3.26 Example of Anti-Vortex Design for Corrugated Metal Pipe Riser

Table 3.8 Trash Rack and Anti-Vortex Device Design Table

Riser Diam., in.	Cylinder		Height inches	Minimum Size Support Bar	Minimum Top	
	Diameter inches	Thickness gage			Thickness	Stiffener
12	18	16	6	#6 Rebar or 1 ½ x 1 ½ x 3/16 angle	16 ga. (F&C)	-
15	21	16	7	" "	" "	-
18	27	16	8	" "	" "	-
21	30	16	11	" "	16 ga.(C), 14 ga.(F)	-
24	36	16	13	" "	" "	-
27	42	16	13	" "	" "	-
36	54	14	17	#8 Rebar	14 ga.(C), 12 ga.(F)	-
42	60	16	19	" "	" "	-
48	72	16	21	1 ¼" pipe or 1 ½ x 1 ½ x ¼ angle	14 ga.(C), 10 ga.(F)	-
54	78	16	25	" "	" "	-
60	90	14	29	1 ½" pipe or 1 ½ x 1 ½ x ¼ angle	12 ga.(C), 8 ga.(F)	-
66	96	14	33	2" pipe or 2 x 2 x 3/16 angle	12 ga.(C), 8	2 x 2 x ¼ angle
72	102	14	36	" "	" "	2 ½ x 2 ½ x ¼ angle
78	114	14	39	2 ½" pipe or 2 ½ x ¼ angle	" "	" "
84	120	12	42	2 ½" pipe or 2 ½ x 2 ½ x ¼ angle	" "	2 ½ x 2 ½ x 5/16 angle

Note$_1$: The criterion for sizing the cylinder is that the area between the inside of the cylinder and the outside of the riser is equal to or greater than the area inside the riser. Therefore, the above table is invalid for use with concrete pipe risers.
Note$_2$: Corrugation for 12"-36" pipe measures 2 ⅔ x ½"; for 42"-84" the corrugation measures 5" x 1" or 8" x 1".
Note$_3$: C = corrugated; F = flat.

Source: Adapted from USDA-SCS and Carl M. Henshaw Drainage Products Information.

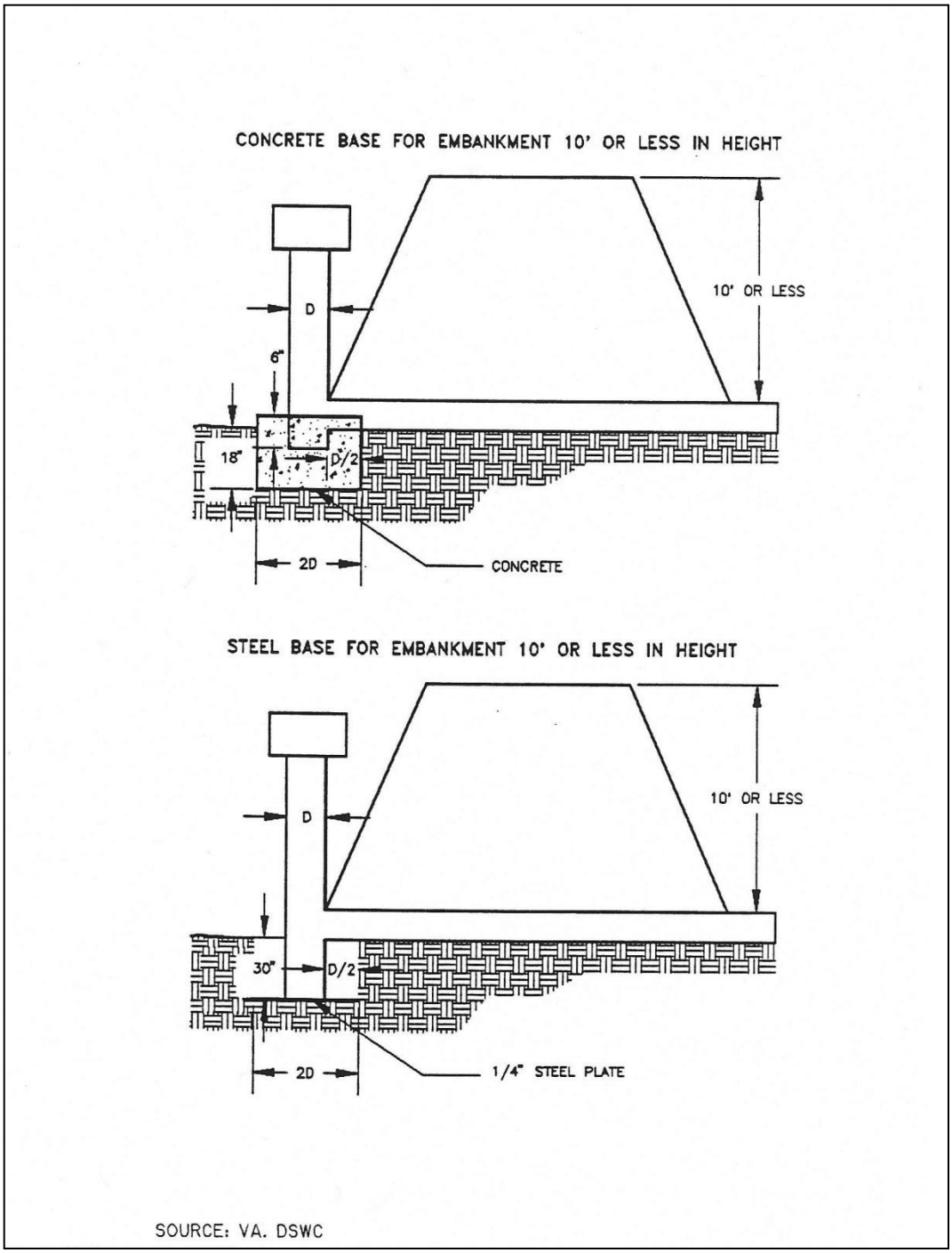


Figure 3.27 Riser Pipe Base Design for Embankment Less Than 10 Feet High

3.9.8 Design Form

Note: This design form is for basins designed with a riser as its primary outlet. It is provided as an example of the type of documentation required for a sediment basin. Different calculations will be needed for other types of outlets.

Project _____

Basin # _____ Location _____

Total area draining to basin: _____ acres.

Total disturbed area draining to basin: _____ acres.

Basin Volume Design

1. Minimum required volume is the lesser of

   a.) (3600 cu. ft. x _____ total drainage acres) / 27 = _____ cu. yds.

   b.) 2 yr, 24 hr storm volume in cubic yards = _____ cu. yds.

2. Total available basin volume at crest of riser* = _____ cu. yds. at elevation _____.
   (From Storage - Elevation Curve)

   * Minimum = Lesser of 3600 cubic feet/acre of Total Drainage Area or
   2yr. 24 hr. storm volume from Disturbed Area drained

3. Excavate _____ cu. yds. to obtain required volume*.

   *Elevation corresponding to required volume = invert of the dewatering orifice.

4. Diameter of dewatering orifice = _____ in.

5. Diameter of flexible tubing = _____ in. (diameter of dewatering orifice plus 2 inches).

Preliminary Design Elevations

6. Crest of Riser = _____

   Top of Dam = _____

   Design High Water = _____

   Upstream Toe of Dam = _____

Basin Shape

7. Length of Flow / Effective Width = L / We = _____

   If > 2, baffles are not required _____

   If < 2, baffles are required _____

Runoff

8. Q_2 = _____ cfs (From TR-55)

9. Q_{25} = _____ cfs (From TR-55)

Basin Outlet Design

10. With emergency spillway, required basin outlet capacity $Q_p = Q_2$ = _____ cfs. (riser and outfall)

    Without emergency spillway, required basin outlet capacity $Q_p = Q_{25}$ = _____ cfs. (riser and outfall)

11. With emergency spillway:

    Assumed available head (h) = _____ ft. (Using Q_2)

    h = Crest of Emergency Spillway Elevation - Crest of Riser Elevation

    Without emergency spillway:

    h = Design High Water Elevation - Crest of Riser Elevation

12. Riser diameter (D_r) = _____ in. Actual head (h) = _____ft.

    (Figure 3.23)

    Note: Avoid orifice flow conditions.

13. Barrel length (l) = _____ ft.

    Head (H) on outfall through embankment = _____ ft.

    (Figure 3.24)

14. Barrel Diameter = _____ in.

    (From Table 3.5 [concrete pipe] or Table 3.6 [corrugated pipe]).

15. Trash rack and anti-vortex device

    Diameter = _____ inches.

    Height = _____ inches.

    (From Table 3.8).

Emergency Spillway Design

16. Required spillway capacity $Q_e = Q_{25} - Q_p$ = _____ cfs.

17. Bottom width (b) = _____ ft.; the slope of the exit channel(s) = _____ ft./foot; and the minimum length of the exit channel (x) = _____ ft.
    (From Figure 3.25 and Table 3.7).

Final Design Elevations

18. Top of Dam = _____

    Design High Water = _____

    Emergency Spillway Crest = _____

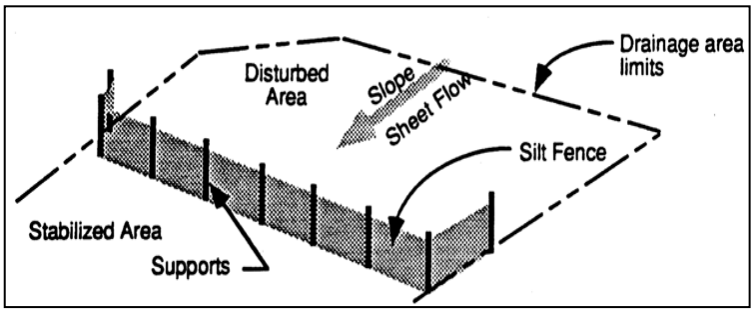
    Basin Riser Crest = _____

    Dewatering Orifice Invert = _____

    Elevation of Upstream Toe of Dam
    (if excavation was performed) = _____

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 be 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 erodiblity 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).

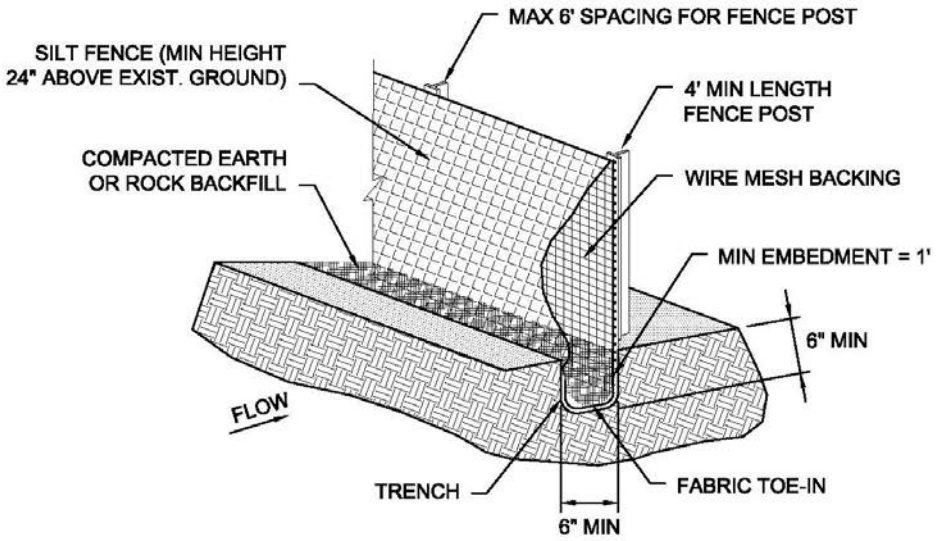
3.10.5 Inspection and Maintenance Requirements

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.

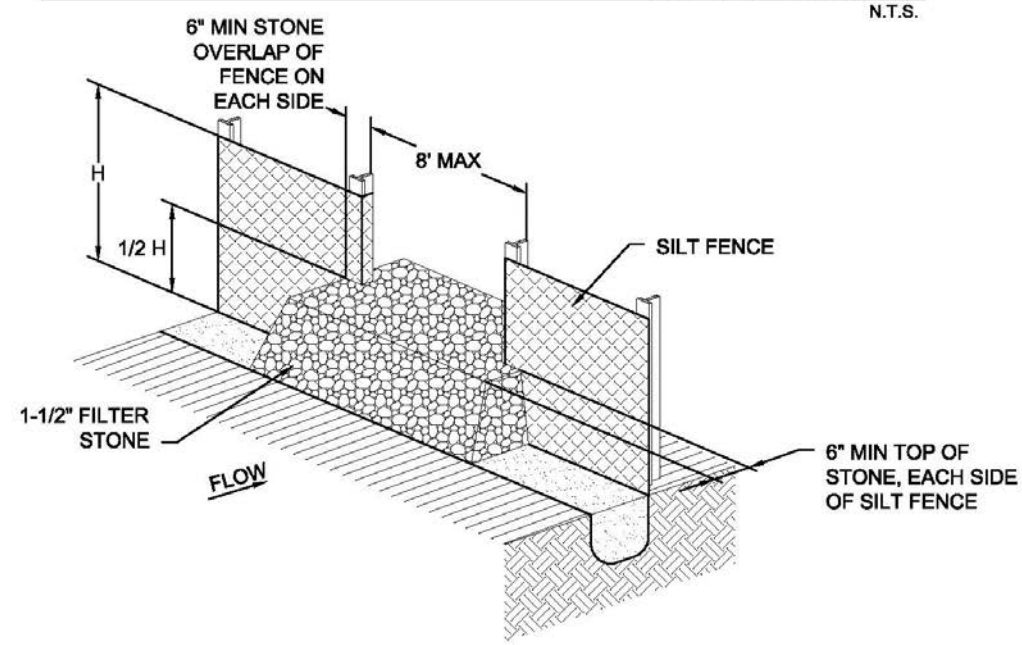
3.10.6 Example Schematics

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.



SILT FENCE EXAMPLE
N.T.S.



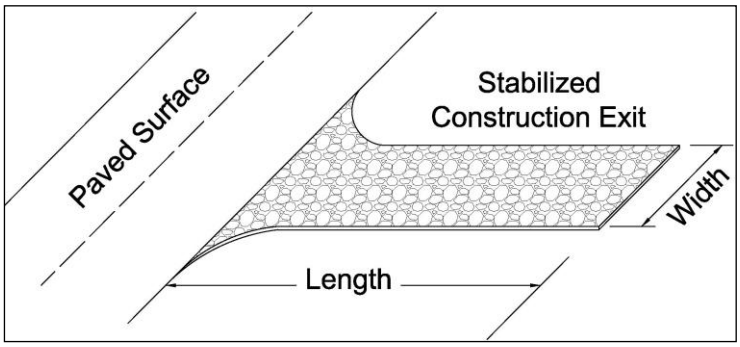
STONE OVERFLOW STRUCTURE EXAMPLE
N.T.S.

NOTES:
1. DESIGN SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE OVERFLOW STRUCTURES SHALL BE INSTALLED. OVERFLOW STRUCTURES ARE REQUIRED AT ALL LOW POINTS AND AT A SPACING OF APPROXIMATELY 300 FT WHERE NO LOW POINT IS APPARENT.
2. DESIGNER SHALL ON THE DRAWINGS THE LOCATIONS WHERE SILT FENCE IS TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE A MINIMUM OF 10 FEET.

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

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=N/A

IMPLEMENTATION CONSIDERATIONS

- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes > 5%

Other Considerations:

- *None*

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:

Table 3.9 Minimum Exit Dimensions		
Disturbed Area	*Min. Width of Exit*	*Min. Length of Exit*
< 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.

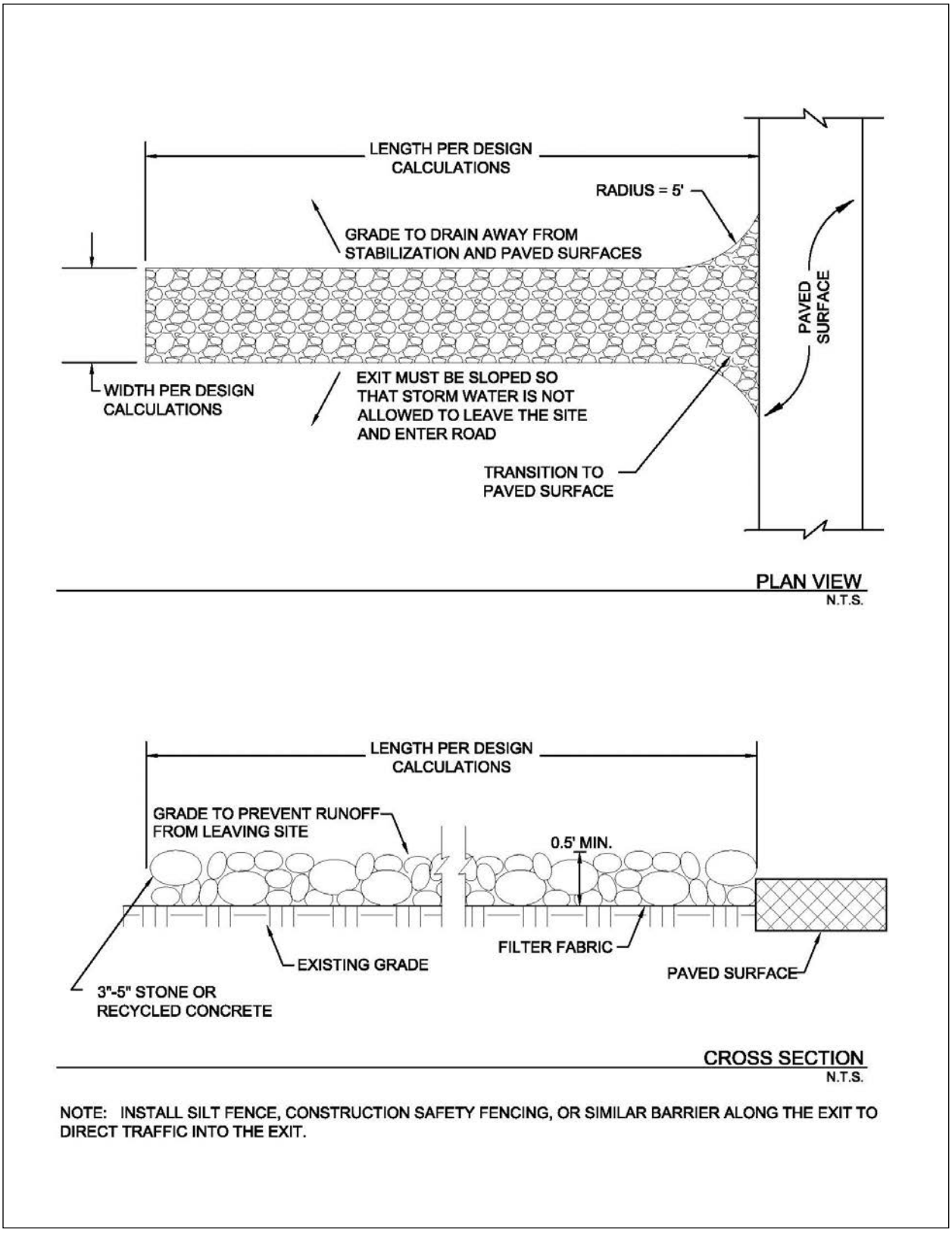
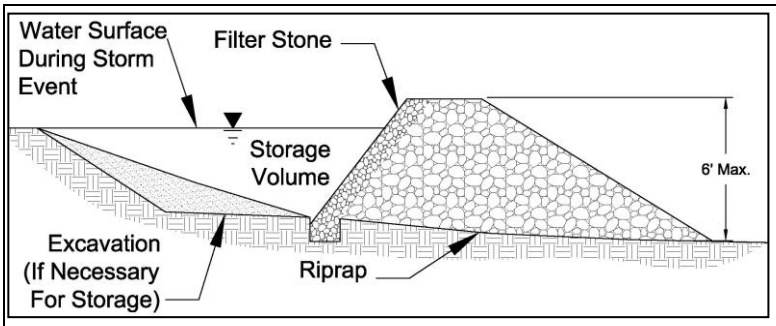


Figure 3.29 Schematics of Stabilized Construction Exit

3.12 Stone Outlet Sediment Trap

Sediment Control



Description: A stone outlet sediment trap is a small detention area formed by placing a stone embankment with an integral stone filter outlet across a drainage swale for the purpose of detaining sediment-laden runoff from construction activities. The sediment trap detains runoff long enough to allow most of the suspended sediment to settle while still allowing for diffused flow of runoff.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Maximum contributing drainage area of 10 acres for excavated trap and 5 acres for bermed trap
- Provide storage volume for the 2-year, 24-hour design storm
- Maximum embankment height of 6 feet
- Embankment slope of 1.5:1 or flatter
- 2 foot minimum top width

ADVANTAGES / BENEFITS:

- Effectively traps sediment in a drainage swale
- Reduces flow velocities
- Relatively long effective life

DISADVANTAGES / LIMITATIONS:

- Amount of land required
- Can cause minor upstream flooding, possibly impacting construction operations
- Not for use in “live” (normally flowing) channels

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Replace filter stone when it appears to be silted in such that efficiency is diminished
- Remove trash and debris after each storm event
- Remove deposited sediment when before the storage capacity is reduced by one third or has reached a depth of one foot, 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=0.50-0.85
(*Depends on soil type*)

IMPLEMENTATION CONSIDERATIONS

- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes > 5%

Other Considerations:

- *Re-grading and stabilization of the control area after construction*

3.12.1 Primary Use

A sediment trap is used where flows are concentrated in a drainage swale or channel. The sediment trap detains and temporarily impounds stormwater, which allows for settling of sediment as the water is slowly discharged from the trap. Sediment traps may be used in combination with check dams when erosive velocities exist in the swale upstream of the sediment trap.

3.12.2 Applications

Temporary stone outlet sediment traps are installed at locations where concentrated flows require a protected outlet to contain sediment or spread flow prior to discharge. They are an effective, long term (12 – 18 months) application for sediment control on large construction sites where a sediment basin is not feasible due to site or construction method restrictions. Several traps may be used to control sediment on drainage sub-basins within the construction site, instead of one large sediment basin at the discharge point from the entire construction site. Sediment traps may also be used with a passive treatment system to provide better removal of fine silt and clay soil particles.

3.12.3 Design Criteria

- Design calculations are required for the use of this control. The designer shall provide drainage computations and dimensions for the stone outlet, berms, and excavated areas associated with this control.
- The maximum drainage area contributing to the trap shall be less than 10 acres for the excavated stone outlet sediment trap and 5 acres or less for the bermed trap.
- The minimum storage volume shall be the volume of runoff from the temporary control design storm (2-year, 24 hour) for the sediment trap's drainage area.
- The surface area of the design storage area shall not be less than 1 percent of the area draining to the device.
- The maximum height of the rock shall be 6 feet, as measured from the toe of the slope on the downstream side to the low point in the rock dam.
- Minimum width of the rock dam at the top shall be 2 feet.
- Rock dam slope shall be 1.5:1 or flatter.
- The rock dam shall have a depressed area, over the center of swale, to serve as the outlet with a minimum width of 4 feet.
- A six inch minimum thickness layer of 1½ inch filter stone shall be placed on the upstream face of the stone embankment when the stormwater runoff contains fine silt and clay soil particles.
- The embankment shall be comprised of well graded stone with a size range of 6 to 12 inches in diameter. The stone may be enclosed in wire mesh or gabion basket and anchored to the channel bottom to prevent washing away.
- The dam shall consist of stone riprap or a combination of compacted fill with a stone riprap outlet.
- Fill placed to constrict the swale for construction of the excavated stone outlet sediment trap and fill placed for the berm in the bermed stone outlet sediment trap shall consist of clay material, minimum Plasticity Index of 30, using ASTM D4318 Standard Test for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- Fill shall be placed in 8 inch loose lifts (maximum) and compacted to 95% Standard Proctor Density at optimum moisture content using ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
- The outlet shall be designed to have a minimum freeboard of 6" at design flow.

- Rock shall be placed on geotextilefilter fabric meeting 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).
- The geotextile fabric, covered with a layer of stone, shall extend past the base of the embankment on the downstream side a minimum of 2 feet.

3.12.4 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 201.12 Stone Outlet Sediment Trap.

3.12.5 Inspection and Maintenance Requirements

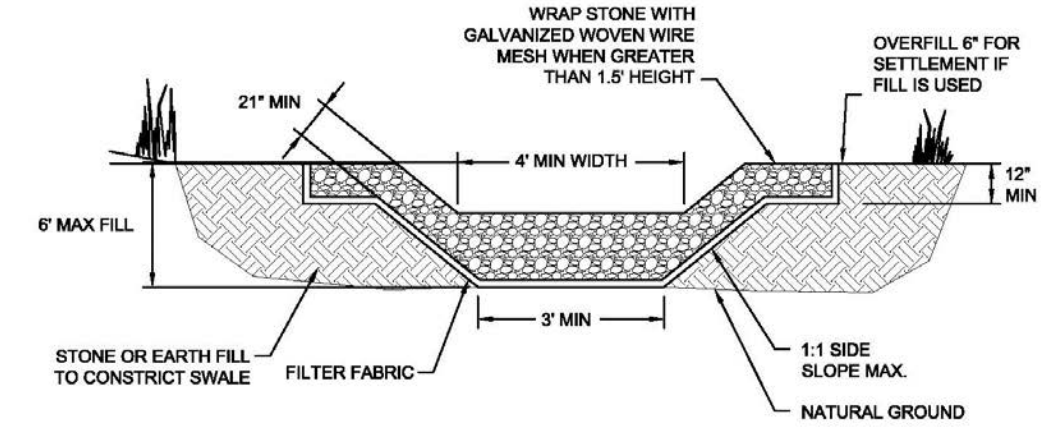
The stone outlet sediment trap should be inspected regularly (at least as often as required by the TPDES Construction General Permit) to check for clogging of the void spaces between stones. If the filter stone appears to be clogged, such that the basin will not completely drain, then the filter stone will require maintenance. If the filter stone is not completely clogged it may be raked with a garden rake to allow the water to release from the basin. If filter stone is completely clogged with mud and sediment, then the filter stone will have to be removed and replaced. Failure to keep the filter stone material properly maintained will lead to clogging of the stone riprap embankment. When this occurs, the entire stone rip-rap structure will need to be replaced. If the aggregate appears to be silted in such that efficiency is diminished, the stone should be replaced.

Trash and debris should be removed from the trap after each storm event to prevent it from plugging the rock. Deposited sediment shall be removed before the storage capacity is decreased by one-third, or sediment has reached a depth of one foot, whichever is less. The removed sediment shall be stockpiled or redistributed in areas that are protected with erosion and sediment controls.

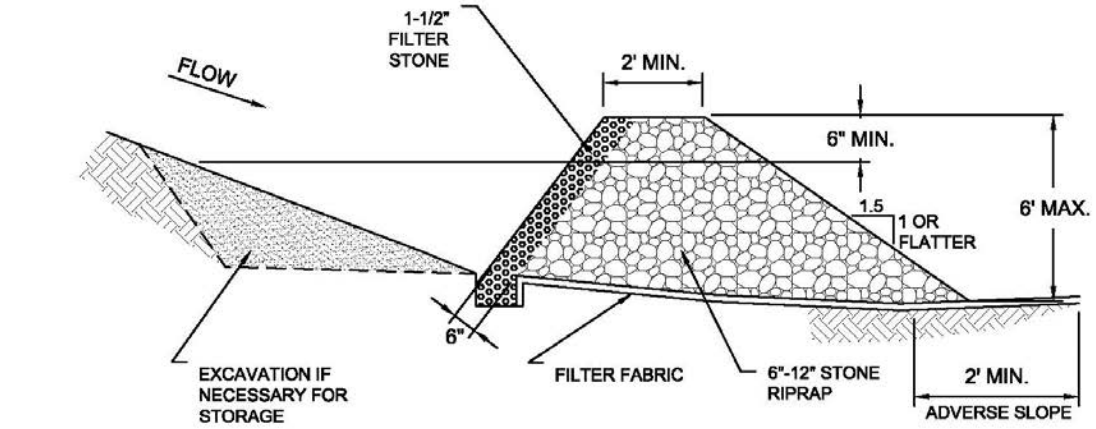
3.12.6 Example Schematics

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.



EXCAVATED STONE OUTLET SEDIMENT TRAP VIEW LOOKING UPSTREAM
N.T.S.

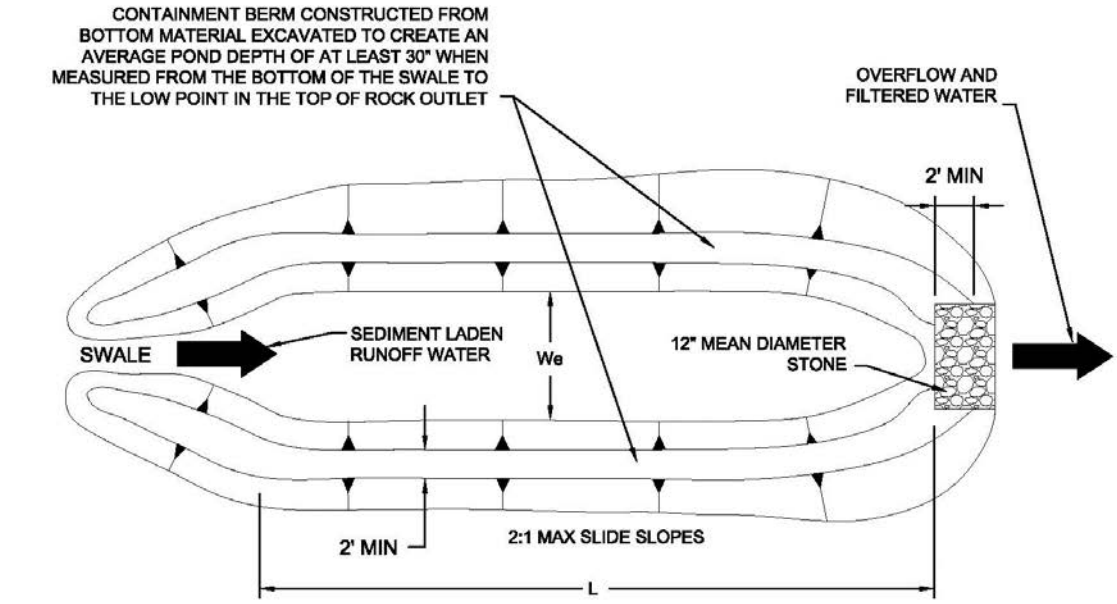


EXCAVATED STONE OUTLET SEDIMENT TRAP SECTION VIEW
N.T.S.

NOTE: ACTUAL DIMENSIONS OF THE SEDIMENT TRAP SHALL BE DESIGNED BASED ON FLOW CONDITIONS AND SITE TOPOGRAPHY. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETER USED TO DESIGN THE TRAP.

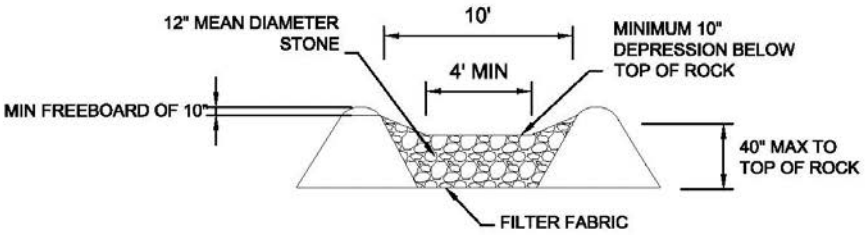
- SIZE OF CONTRIBUTING DRAINAGE AREA
- DESIGN STORM VOLUME AND FLOW RATE AT THE TRAP
- HEIGHT, SLOPE, AND LENGTH OF STONE OUTLET
- STORAGE VOLUME
- EXTENT OF GRADING TO PROVIDE THE CONTROLLED OUTLET

Figure 3.30 Schematics of Excavated Stone Outlet Sediment Trap



BERMED STONE OUTLET SEDIMENT TRAP PLAN VIEW

N.T.S.



BERMED STONE OUTLET SEDIMENT TRAP SECTION VIEW

N.T.S.

NOTE: ACTUAL DIMENSIONS OF THE SEDIMENT TRAP SHALL BE DESIGNED BASED ON FLOW CONDITIONS AND SITE TOPOGRAPHY. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETER USED TO DESIGN THE TRAP.

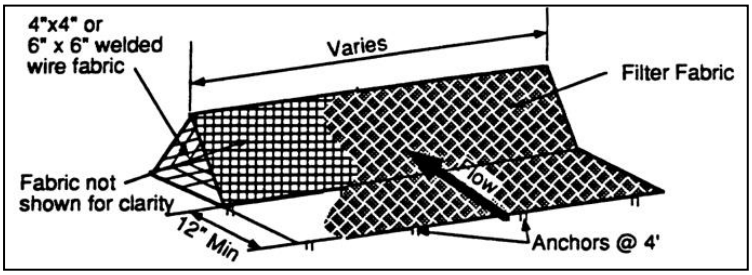
- SIZE OF CONTRIBUTING DRAINAGE AREA
- DESIGN STORM VOLUME AND FLOW RATE AT THE TRAP
- HEIGHT, SLOPE, AND LENGTH OF STONE OUTLET
- STORAGE VOLUME
- EXTENT OF GRADING TO PROVIDE THE CONTROLLED OUTLET

TRIBUTARY AREA (ACRES)	L (FT)	We (FT)
< 0.5	59	13
0.51-1.0	82	16
1.01-1.5	102	20
1.51-2.0	118	23
2.01-2.5	131	26
2.51-3.0	144	30
3.01-3.5	154	30
3.51-4.0	167	33
4.01-4.5	177	36
4.51-5.0	187	36

Figure 3.31 Schematics of Bermed Stone Outlet Sediment Trap
(Source: City of Chesterfield Department of Public Works Detail SC 7.2)

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-guage 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.

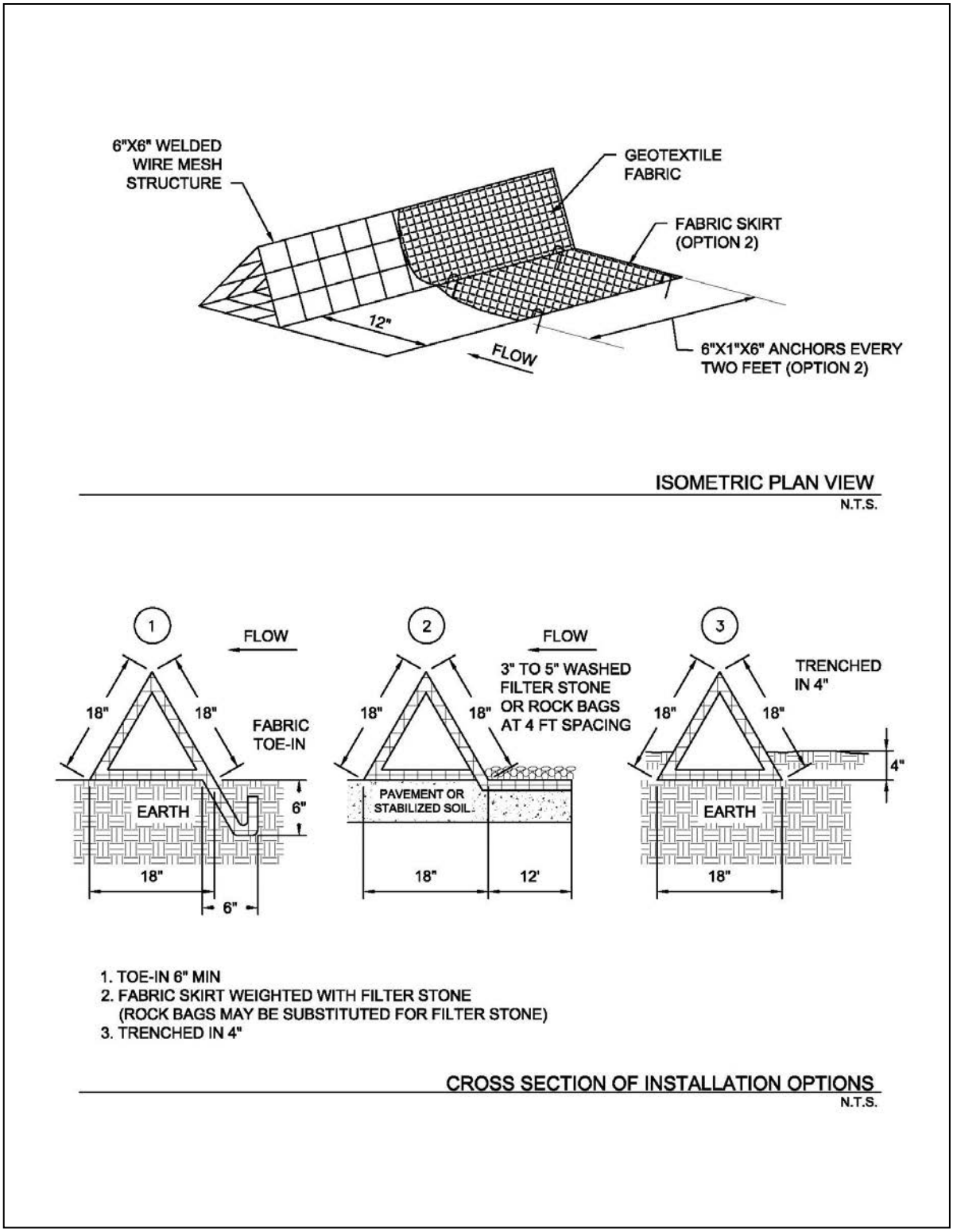
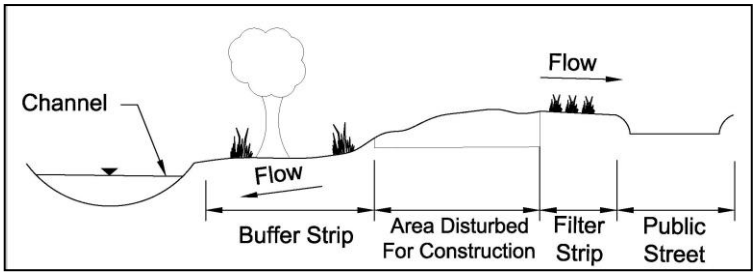


Figure 3.32 Schematics of Triangular Sediment Filter Dike

3.15 Vegetated Filter Strips and Buffers

Sediment Control



Description: Buffer strips (existing vegetation) and filter strips (planted vegetation) are sections of vegetated land adjacent to disturbed areas. They are designed with low slopes to convey sheet flow runoff from disturbed areas, resulting in the removal of sediment and other pollutants as the runoff passes through vegetation and infiltration occurs.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Minimum width (direction of flow across the vegetation) dependent on slope of disturbed area
- Maximum ratio of disturbed area to vegetated area dependent on slope
- Existing vegetation must meet criteria for type and coverage
- Dense grass required for planted vegetation
- Demarcate limits of vegetation and protect from traffic

ADVANTAGES / BENEFITS:

- Effective secondary control for removing clay particles
- Disperses flow and slows velocities to decrease erosion potential in receiving water
- Preserves the character of existing riparian corridor
- May become part of the permanent stormwater controls

DISADVANTAGES / LIMITATIONS:

- Appropriate as a primary control only for drainage areas of 2 acres or less and under certain site conditions
- Maximum 150 feet of flow to vegetated strip or buffer is used as a primary control
- Cannot treat large volumes or concentrated flows
- Not effective as a perimeter control when the perimeter cuts across contours instead of following contours
- Must limit access to vegetated portion of the site

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Rake accumulations of sediment from the vegetation
- Repair bare areas

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=0.35-0.85
(*Depends on many conditions in addition to soil type*)

IMPLEMENTATION CONSIDERATIONS

- ◒ Capital Costs
- ○ Maintenance
- ○ Training
- ◒ Suitability for Slopes > 5%

Other Considerations:

- *Coordination with final landscaping*

3.15.1 Primary Use

Vegetated filter strips and buffers are used to reduce the velocity of sheet flow and reduce the volume of runoff through infiltration. In the process, sediment is removed as the runoff is filtered through the vegetation and infiltration occurs.

Vegetated filter strips and buffers are frequently used a secondary sediment control, since their performance is highly variable. They may be used as a primary sediment control only for small areas and under select site conditions.

3.15.2 Applications

Vegetated buffers are most applicable on development projects that are adjacent or near to floodplains, wetlands, streams and other natural waterways. Vegetated strips may be established along roads and property lines as a perimeter control for development. They are also applicable along the down slope side of utility line projects.

Vegetated buffers may be a primary sediment control for small areas where the conditions meet design criteria. They are also commonly used as a secondary control with other perimeter controls to provide higher levels of sediment removal. Vegetated areas have more capability to remove fine particle sizes than many conventional sediment controls. Combinations such as an organic filter tube or silt fence at the upslope edge of a vegetated strip are very effective.

In addition to perimeter control, vegetated strips are applicable for slope protection. Strips may be established at regular intervals to interrupt long or steep slopes. The strips maintain sheet flow, decrease velocities, and decrease erosion on the slopes.

3.15.3 Design Criteria

Vegetated buffers should be preserved along existing floodplains, wetlands, channels, and other natural waters whenever possible, even when the buffer is not a primary sediment control. Check for local requirements, as many municipalities mandate a vegetated buffer to maintain the character of the riparian corridor along a natural waterway. Vegetated buffers are encouraged to protect existing waterways by decreasing velocities, dispersing flow, and attenuating volume before the runoff reaches the waterway. If the development plans necessitate disturbing the riparian corridor, phase the development (when possible) to retain a vegetated buffer until final grading and landscaping at the end construction.

The evaluation and use of vegetated strips and buffers for use as a sediment control are unique to each site. The designer should carefully consider slope, vegetation, soils, depth to impermeable layer, depth to ground water, and runoff sediment characteristics before specifying a vegetated strip or buffer as a primary sediment control. This consideration is especially true for buffer strips of existing vegetation. If the buffer is not correctly planned, the first storm event can damage the natural vegetation beyond repair.

Design criteria in this section are only applicable when a vegetated strip or buffer is intended to be a primary or secondary sediment control for the construction site. As discussed above, a vegetated buffer may be preserved for other reasons that do not necessitate the use of these criteria if other sediment controls are provided for the construction site.

General

- Maximum slope of the vegetated strip or buffer shall be 5% across the width of the vegetation in the direction of flow.
- To maintain sheet flow, maximum distance of flow to the vegetated filter shall be 150 feet.
- Vegetated buffers and strips may only serve as a primary sediment control when the contributing drainage area has a slope of 15% or less. On steeper slopes, another perimeter control (e.g. organic filter tube, silt fence) may be installed at the upslope edge of the vegetated buffer or strip as a primary control, with the vegetation serving as a secondary control.

- Maximum disturbed area contributing runoff to the vegetated strip or buffer shall be 2 acres.
- Vegetated filter strips and buffers shall be a minimum of 15 feet wide. Width shall be increased based on the slope of the disturbed area as shown in the following table. Although the slope of the disturbed area may be up 15%, the slope of the vegetated strip or buffer is still limited to 5% maximum if used as a primary control for sediment.

Table 3.10 Sizing of Vegetated Buffers and Strips

Maximum Slope of Contributing Drainage Area	*Maximum Ratio of Disturbed Area to Vegetated Area*	*Minimum Width of Vegetated Area (Direction of Flow)*
5%	8:1	15 feet
10%	5:1	30 feet
15%	3:1	50 feet

- Access to vegetated buffers and strips shall be prohibited. These areas shall be protected from all traffic. No activities should occur in these areas, including no parking of the workers' vehicles, no eating of lunch, etc.
- Install controlled and stabilized ingress/egress points to manage traffic and direct it away from vegetation. Fence the vegetation or provide other means of protection to prevent vehicles and equipment from driving on the vegetated areas.
- Vegetated buffers and filter strips should not be used when high ground water, shallow depth to bedrock, or low soil permeability will inhibit infiltration of runoff.

Buffers of Existing Vegetation

- Fencing, flagged stakes spaced at a maximum of 6 feet, or other measures shall be used to clearly mark existing vegetation that is being preserved as a buffer before the start of any clearing, grubbing, or grading.
- Existing vegetation must be well established to be used as a vegetated buffer. It may be a mix of trees, sapling/shrubs, vines and herbaceous plants. However, the herbaceous plants shall cover at least 80 percent of the ground area.
- Bare soil shall not be visible within the buffer. Area between herbaceous plants shall be covered with a natural litter of organic matter (e.g. leaves, dead grass).
- Lots with a thick stand of existing grasses may preserve strips of the grasses as perimeter control in addition to using vegetation as a buffer along a natural waterway.

Strips of Planted Vegetation

- Vegetated strips should only be used when the site perimeter is along (parallel to) contours. Erosion of the vegetated strip will be a problem when the strip is placed along roads or site perimeters that cut across contours, resulting in runoff flowing along, instead of across, the filter strip.
- Minimize vehicle and equipment traffic and other activities that could compact soils on areas that will be planted for vegetated strips.
- Sod is required when the strip is intended to immediately function as a sediment control.
- Erosion control blankets (ECBs) should be used to prevent erosion and provide sediment control while establishing vegetation for a filter strip. If ECBs are not used, than another perimeter control is required until the vegetation is mature. Refer to *Section 2.3 Erosion Control Blankets*.
- Refer to the *Section 2.9 Vegetation* for criteria on establishing vegetation.
- When using vegetated strips for slope protection, spacing of the strips should be designed based on

slope steepness and type of soil. The strips may be planted directly on the slope grade when the slope is flatter than 2:1. For slopes of 2:1 and steeper, vegetation should be established on terraces. Terraces shall have a transverse slope of 1 percent in the opposite direction of the slope (i.e. back into the ground).

3.15.4 Design Guidance and Specifications

Guidance for analysis of the hydraulic loading on filter strips is in *Section 13.3 of the Stormwater Controls Technical Manual*.

No specification for vegetated filter strips and buffers is currently available in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments.

3.15.5 Inspection and Maintenance Requirements

Vegetated filter strips and buffers should be inspected regularly (at least as often as required by the TPDES Construction General Permit). If rill erosion is developing, additional controls are needed to spread the flow before it enters the vegetated area. Rake light accumulations of sediment from the vegetation. Remove trash that accumulates in the vegetation. Additional sediment controls (e.g. a line of organic filter tubes or silt fence), are needed if sediment accumulations are large enough to bury the vegetation.

Inspect established planted vegetation for bare areas and place sod or install seeded erosion control blankets, as appropriate. Mow as needed after planted vegetation is mature.

3.15.6 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.

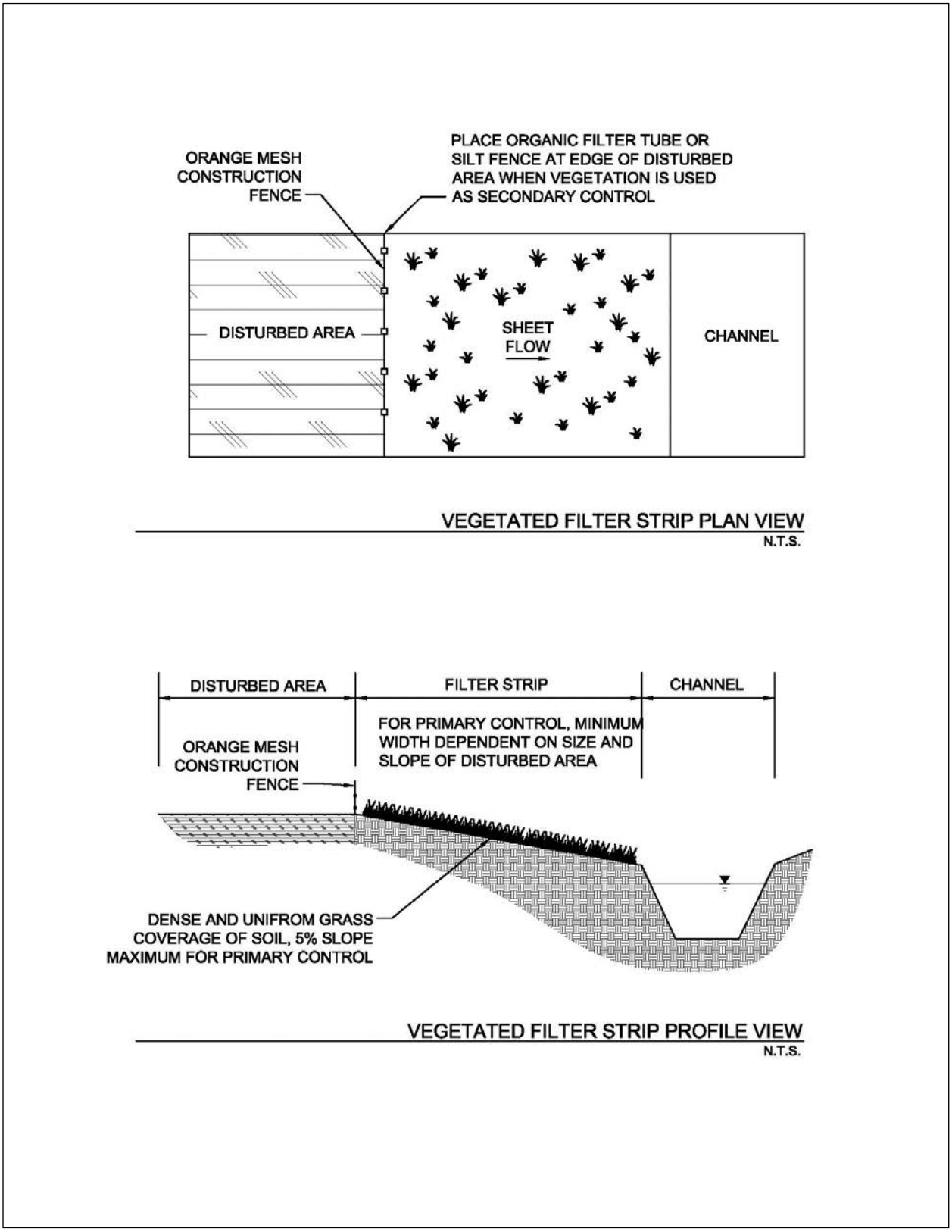


Figure 3.35 Schematics of Vegetated Filter Strip

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

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*

4.3.1 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 demoliotion 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.

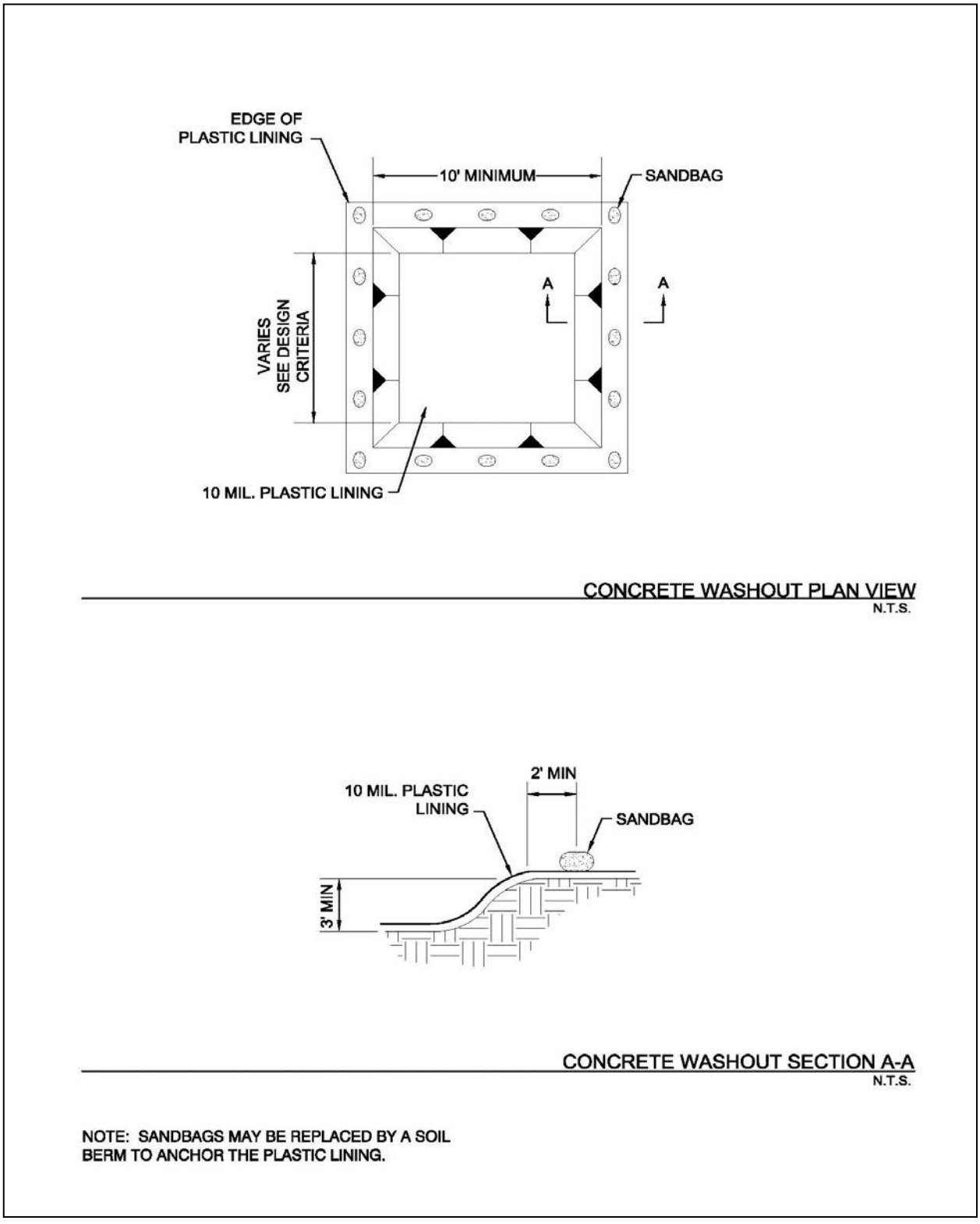


Figure 4.1 Schematics of Concrete Washout Containment

APPENDIX E

INSPECTION AND MAINTENANCE REPORTS

Inspector Qualifications*

Inspector Name: _____

Qualifications (Check as appropriate and provide description):

□ Training Course _____

□ Supervised Experience _____

□ Other _____

Inspector Name: _____

Qualifications (Check as appropriate and provide description):

□ Training Course _____

□ Supervised Experience _____

□ Other _____

Inspector Name: _____

Qualifications (Check as appropriate and provide description):

□ Training Course _____

□ Supervised Experience _____

□ Other _____

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

INSPECTION SCHEDULE

Inspections must be conducted:

- **Option 1** – at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inch or greater
- **Option 2** – at least once every 7 calendar days, regardless of whether or not there has been a rainfall event since the previous inspection.

Any changes to the schedule are conducted in accordance with the following:

- the schedule is 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 below.

Date	Schedule Option	Reason for Schedule Change

Construction Site SWP3 Inspection Report

Status		
	☐ Complies	
	☐ Warning	No.
	☐ Project Shutdown	

SWP3	On-Site		Up-to-date	
	Yes	No[1]	Yes	No[2]

General Information		
	Project:	Date:
	Address:	Inspector:
		Qualifications: see Appendix E of SWP3
		Weather Conditions:
	Owner:	Contractor:

BMP	BMP In Use		Maint. Req'd		Comments
	Yes	No	Yes[2]	No	

[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.

[2]Items marked in this column need to be addressed in the Actions to be Taken table.

ACTIONS TO BE TAKEN	RESPONSIBLE PERSON(S)	DUE DATE	DATE COMPLETED	INITIALS

NOTE: These reports will be kept on file as part of the Storm Water Pollution Prevention Plan for at least three years. A copy of the SWP3 will be kept at the site at all times during construction.

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 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Name:	
Address:	
Telephone:	
Site Location:	
Inspector Signature:	Date:

MAINTENANCE GUIDELINES

1. Below are some maintenance practices to be used to maintain erosion and sediment controls:
   - All control measures will be inspected according to the schedule identified in Appendix E.
   - All measures will be maintained in good working order. The operator should correct any damage or deficiencies as soon as practicable after the inspection, but in no case later than seven (7) calendar days after the inspection.
   - BMP Maintenance (as applicable)
     - 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.
     - Silt fence will be inspected for depth of sediment, tears, to see of the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
     - Drainage swale will be inspected and repaired as necessary.
     - Inlet control will be inspected and repaired as necessary.
     - Check dam will be inspected and repaired as necessary.
     - Straw bale dike will be inspected and repaired as necessary.
     - Diversion dike will be inspected and any breaches promptly repaired.
     - Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
     - 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 to work with the owner or operator of the property to remove the sediment.
     - Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

2. To maintain the above practices, the following will be performed:
   - Maintenance and repairs will be conducted before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. Following an inspection, deficiencies should be corrected no later than seven (7) calendar days after the inspection.
   - Any necessary revisions to the SWP3 as a result of the inspection 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.
   - Personnel selected for inspection and maintenance responsibilities must be knowledgeable of the general permit, familiar with the construction site, and knowledgeable of the SWP3 for the site.

APPENDIX F

ROLES AND RESPONSIBILITIES CHECKLIST AND CERTIFICATION STATEMENT

PRIMARY AND SECONDARY OPERATOR GENERAL RESPONSIBILITIES

DEFINITIONS:

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

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

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

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

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

Please note that both Owners and Contractors can meet the definition of being an Operator and will need to fulfill the associated requirements. The Roles and Responsibilities Checklist and Certification Statement located in Appendix F are to be completed and signed by the Owner and Contractor(s).

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 must:

(a.) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of the 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 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 this general permit, and

(d.) ensure that the SWP3 for portions of the project where they are operators indicates the name and site-specific TPDES authorization numbers for permittees with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If the party with day-to-day operational control has not been authorized or has abandoned

the site, the person with control over project specifications is considered to be the responsible party until the authority is transferred to another party and the SWP3 is updated.

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 the SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

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

Roles and Responsibilities Checklist

Role/Responsibility	Project Owner*	Primary Operator	Secondary Operator
Development of initial design specifications			
Payment for proposed construction activity			
Maintain SWP3 records for three years from the date that a NOT is submitted			
Complete, sign, and postmark NOI at least seven days prior to beginning of construction activity, or Complete, sign, and electronically submit NOI prior to the beginning of construction activity			
Post a copy of the signed NOI at project site and maintain through duration of project			
Post copy of completed construction site notice(s) at project site through duration of project			
Provide a copy of the signed NOI to any secondary operator and to the operator of any MS4 receiving construction site discharge, at least seven days prior to commencing construction activities			
Maintain schedule of major construction activities, keep a copy with SWP3, and retain a copy of the SWP3 at the construction site at all times			
Update SWP3 to reflect daily operations (e.g., revisions, installation dates, grading operation dates, BMP maintenance, and inspection information)			
Update SWP3 to reflect changes in the Contractor's contact information			
Identify, maintain and modify BMPs (as necessary) to control erosion and sedimentation due to construction activities throughout life of project			
Provide stabilized construction entrances and sediment barriers, and clean existing rock and/or add rock to prevent mud and dirt from entering streets or alleys			
Maintain and/or replace sediment barriers and silt traps (if installed), etc. throughout life of project			
Maintain erosion control on stockpiles without blocking drainage paths			
Perform SWP3 inspections in accordance with TPDES General Permit, and keep inspection reports with SWP3			
Based on inspection results, modify SWP3 and pollution prevention controls to maintain that storm water (or identified non-storm water discharges) are the only discharges leaving the site			

Role/Responsibility	Project Owner*	Primary Operator	Secondary Operator
Provide proper management of project-generated trash and debris, including debris collected from storm water protection devices			
Stabilize all disturbed areas related to construction for temporary or permanent ceasing of activities			
Comply with all State and local sanitary sewer or septic system regulations			
Provide copies of all SWP3 records to the Project Owner			
Complete, sign, and submit NOT form to the TCEQ and MS4 Operators when the project has been completed and stabilized			
Complete applicable portion of the site notice related to removal of the notice and submit to the operator of any MS4 receiving site discharge			

**Please note that the Project Owner can meet the definition of an operator. Please refer to the definitions of "primary operator" and "secondary operator" for more information.*

Each operator engaged in activities that disturb surface soils must be identified and must sign the following certification statement. Signatory requirement guidance and an additional certification statement form are attached (Appendix F).

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 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 this document and can provide documentation in proof of such authorization upon request."

Project Owner

Name:_____
Title:_____
Company:_____
Signature:_____
Date:_____
Operator Type:_____

General Contractor

Name:_____
Title:_____
Company:_____
Signature:_____
Date:_____
Operator Type:_____

Subcontractor (as appropriate)

Name:_____
Title:_____
Company:_____
Signature:_____
Date:_____
Operator Type:_____

Subcontractor (as appropriate)

Name:_____
Title:_____
Company:_____
Signature:_____
Date:_____
Operator Type:_____

NOTICE OF INTENT (NOI) LOG			
Name	**Company**	**Date Submitted NOI**	**TPDES Permit No.**

Signature Requirements in 30 TAC §305.44

The purpose of this document is to clarify the signature requirements for water quality permit applications subject to 30 Texas Administrative Code (TAC) section (§)305.44. This includes most applications relating to authorizations issued under 30 TAC Chapter 305 (relating to Consolidated Permits), Chapter 205 (relating to General Permits for Waste Discharges), 30 TAC Chapter 312 (relating to Sludge Use, Disposal and Transportation), and 30 TAC Chapter 321 (relating to Control of Certain Activities By Rule).

TCEQ is currently updating the signatory instructions in its application forms. You may have recently received a notice of deficiency (NOD) letter indicating failure to meet the signatory requirements. Please review the information provided below concerning signatory requirements and have a person authorized to sign under §305.44 and submit the enclosed certification. The certification must clearly indicate the applicant and the original application form subject to the NOD. Upon satisfactory review of your signed certification, your submission will no longer be deficient for failing to meet the signatory requirements.

You are encouraged to use the attached certification page for water quality permit and registration applications, and other authorization forms subject to §305.44, until the forms have been updated.

IF YOU ARE A CORPORATION:

The regulation governing who may sign an application form is 30 TAC §305.44(a)(1) (see attached). 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.

IF YOU ARE A MUNICIPALITY OR OTHER GOVERNMENT ENTITY:

The regulation governing who may sign an application form is 30 Texas Administrative Code §305.44(a)(3) (see attached). 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.

If you have questions or need additional information concerning the signatory requirements discussed above, please contact either Matt Beeter at (512) 239-1406 or Carol Lear at (512) 239-1025, of the Texas Commission on Environmental Quality's Environmental Law Division.

30 Texas Administrative Code
§305.44. Signatories to Applications.

(a) 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).

CERTIFICATION

Permit/Registration No._____

Applicant:_____

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 this document and can provide documentation in proof of such authorization upon request.

Signature:_____ Date:_____

APPENDIX G

TPDES GENERAL PERMIT (TXR150000) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Texas Commission on Environmental Quality

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

GENERAL PERMIT TO DISCHARGE UNDER THE

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

This permit supersedes and replaces
TPDES General Permit No. TXR150000, issued March 5, 2008

Construction sites that discharge stormwater associated with construction activity

located in the state of Texas

may discharge to surface water in the state

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

This general permit and the authorization contained herein shall expire at midnight, five years from the permit effective date.

EFFECTIVE DATE: March 5, 2013

ISSUED DATE: FEB 19 2013

Bryan W. Shaw

For the Commission

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

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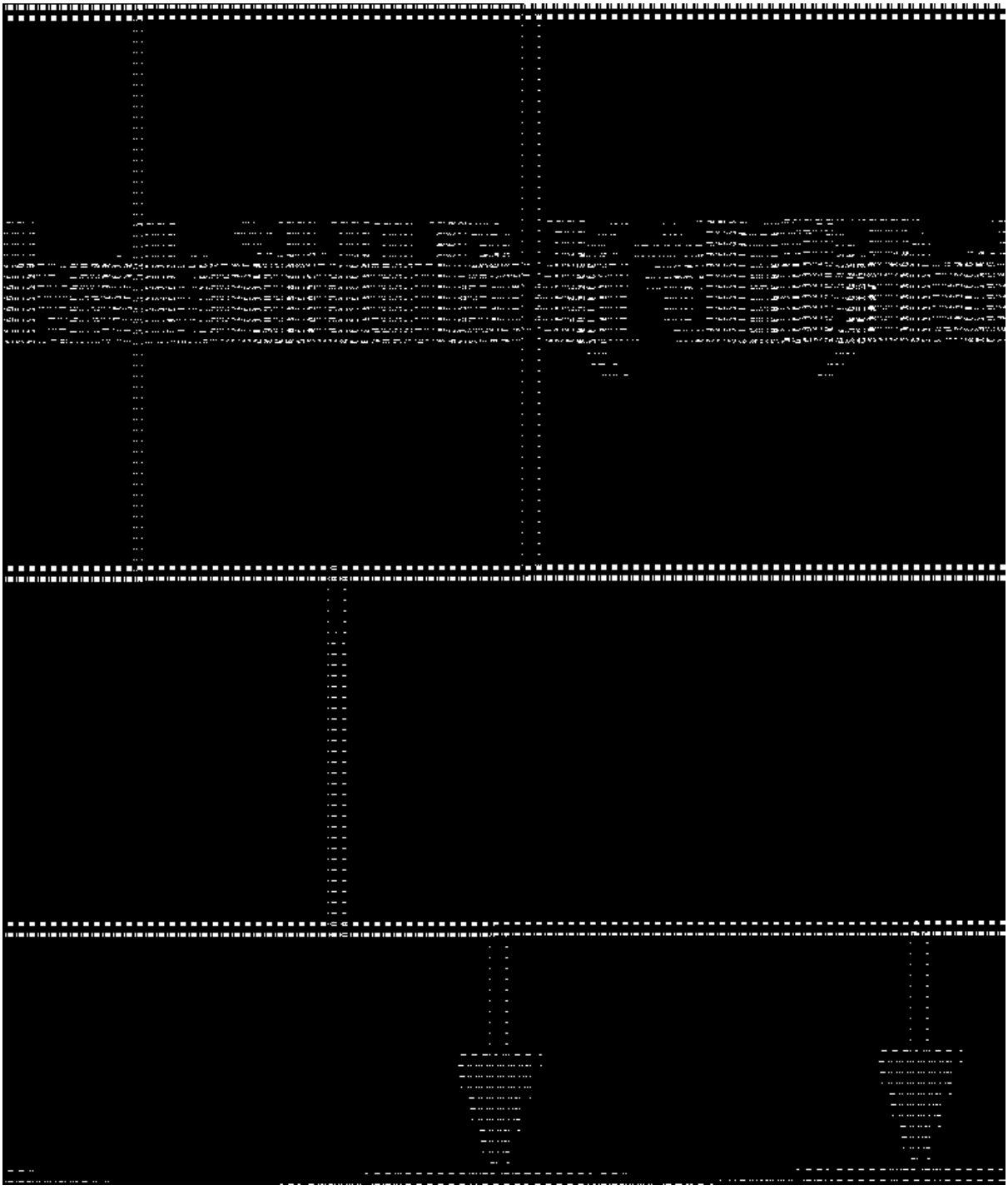
Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required



Section B. Definitions

Arid Areas - Areas with an average annual rainfall of 0 to 10 inches.

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

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

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located ¼ mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

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

Dewatering – The act of draining rainwater or groundwater from building foundations, vaults, and trenches.

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

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

Edwards Aquifer - As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak

Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

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

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

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

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

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

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

B. For individual lots in a residential construction site by either:

   (1) the homebuilder completing final stabilization as specified in condition (a) above; or

   (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization.

Fullfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).

C. For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

D. In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:

(1) Temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and

(2) The temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

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

Impaired Water - A surface water body that is identified on the latest approved CWA §303(d) List as not meeting applicable state water quality standards. Impaired waters include waters with approved or established total maximum daily loads (TMDLs), and those where a TMDL has been proposed by TCEQ but has not yet been approved or established.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or

(b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

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

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

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

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

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

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

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

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

Receiving Water - A "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

Semiarid Areas - areas with an average annual rainfall of 10 to 20 inches

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

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

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

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

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

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater

runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

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

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

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

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

Waters of the United States - (from 40 CFR §122.2) Waters of the United States or waters of the U.S. means:

(a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) all interstate waters, including interstate wetlands;

(c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) which are used or could be used for industrial purposes by industries in interstate commerce;

(d) all impoundments of waters otherwise defined as waters of the United States under this definition;

(e) tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) the territorial sea; and

(g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the U.S. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the U.S. (such as

disposal area in wetlands) nor resulted from the impoundment of waters of the U.S. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

Discharges of stormwater runoff from small and large construction activities may be authorized under this general permit.

2. Discharges of Stormwater Associated with Construction Support Activities

Examples of construction support activities include, but are not limited to, concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas. Construction support activities authorized under this general permit are not commercial operations, and do not serve multiple unrelated construction projects. Discharges of stormwater runoff from construction support activities may be authorized under this general permit, provided that the following conditions are met:

(a) the activities are located within one (1) mile from the boundary of the permitted construction site and directly support the construction activity;

(b) an SWP3 is developed for the permitted construction site according to the provisions of this general permit, and includes appropriate controls and measures to reduce erosion and discharge of pollutants in stormwater runoff from the construction support activities; and

(c) the construction support activities either do not operate beyond the completion date of the construction activity or, at the time that they do, are authorized under separate Texas Pollutant Discharge Elimination System (TPDES) authorization. Separate TPDES authorization may include the TPDES Multi Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), separate authorization under this general permit if applicable, coverage under an alternative general permit if available, or authorization under an individual water quality permit.

3. Non-Stormwater Discharges

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

(a) discharges from fire fighting activities (fire fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);

(b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);

(c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials

have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

(d) uncontaminated water used to control dust;

(e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;

(f) uncontaminated air conditioning condensate;

(g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and

(h) lawn watering and similar irrigation drainage.

4. Other Permitted Discharges

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

Section B. Concrete Truck Wash Out

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

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

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

2. Prohibition of Non-Stormwater Discharges

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

3. Compliance With Water Quality Standards

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

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

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standards and are listed on the EPA approved CWA §303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

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

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (i.e., the initial disturbance of soils associated with clearing, grading, or excavating activities, as well as other construction-related activities such as stockpiling of fill material and demolition) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

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

(b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule is in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.

6. Discharges to Specific Watersheds and Water Quality Areas

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

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities. For example, this permit does not limit the authority of a home-rule municipality provided by Texas Local Government Code §401.002.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES

regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Oil and Gas Production

Stormwater runoff from construction activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the EPA.

10. Stormwater Discharges from Agricultural Activities

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

11. Endangered Species Act

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

12. Other

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

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under TPDES general permit TXR150000 (effective on March 5, 2008), must submit an NOI to renew authorization or a NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

2. Small Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either

under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that would not meet the conditions to qualify for termination of this permit as described in Part II.E. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities With Low Potential for Erosion:

If all of the following conditions are met, then a small construction activity is determined to occur during periods of low potential for erosion, and a site operator may be automatically authorized under this general permit without being required to develop an SWP3 or submit an NOI:

(a) the construction activity occurs in a county listed in Appendix A;

(b) the construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;

(c) all temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site;

(d) the permittee signs a completed TCEQ construction site notice, including the certification statement;

(e) a signed copy of the construction site notice is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until completion of the construction activity;

(f) a copy of the signed and certified construction site notice is provided to the operator of any MS4 receiving the discharge at least two days prior to commencement of construction activities;

(g) any supporting concrete batch plant or asphalt batch plant is separately authorized for discharges of stormwater runoff or other non-stormwater discharges under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and

(h) any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

Part II.G. of this general permit describes how an operator may apply for and obtain a waiver from permitting, for certain small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available.

2. Automatic Authorization For All Other Small Construction Activities:

Operators of small construction activities not described in Part II.E.1. above may be automatically authorized under this general permit, and operators of these sites shall not be required to submit an NOI, provided that they meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) sign and certify a completed TCEQ small construction site notice, post the notice at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, prior to commencing construction, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities); and

(c) provide a copy of the signed and certified construction site notice to the operator of any municipal separate storm sewer system receiving the discharge prior to commencement of construction activities.

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

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

3. Authorization for Large Construction Activities:

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

(a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) primary operators must submit an NOI, using a form provided by the executive director, at least seven (7) days prior to commencing construction activities, or if utilizing electronic submittal, prior to commencing construction activities. If an additional primary operator is added after the initial NOI is submitted, the new primary operator must submit an NOI at least seven (7) days before assuming operational control, or if utilizing electronic NOI submittal, prior to assuming operational control. If the primary operator changes after the initial NOI is submitted, the new primary operator must submit a paper NOI or an electronic NOI at least ten (10) days before assuming operational control;

(c) all operators of large construction activities must post a site notice in accordance with Part III.D.2. of this permit. The site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction, and must be maintained in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);

(d) prior to commencing construction activities, all primary operators must (1) provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and (2) list in the SWP3 the names and addresses of all MS4 operators receiving a copy;

(e) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or is required to submit an NOI, and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

(f) all secondary operators must provide a copy of the signed and certified Secondary Operator construction site notice to the operator of any MS4 receiving the discharge prior to commencement of construction activities.

4. Waivers for Small Construction Activities:

Part II.G. describes how operators of certain small construction activities may obtain a waiver from coverage.

5. Effective Date of Coverage

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

(b) Primary operators of large construction activities as described in Part II.E.3. above are provisionally authorized seven (7) days from the date that a completed NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. If electronic submission of the NOI is provided, and unless otherwise notified by the executive director, primary operators are authorized immediately following confirmation of receipt of the NOI by the TCEQ. Authorization is non-provisional when the executive director finds the NOI is administratively complete and an authorization number is issued for the activity. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

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

6. Notice of Change (NOC)

If relevant information provided in the NOI changes, an NOC must be submitted at least 14 days before the change occurs, if possible. Where 14-day advance notice is not possible, the operator must submit an NOC within 14 days of discovery of the change. If

the operator becomes aware that it failed to submit any relevant facts or submitted incorrect information in an NOI, the correct information must be provided to the executive director in an NOC within 14 days after discovery. The NOC shall be submitted on a form provided by the executive director, or by letter if an NOC form is not available. A copy of the NOC must also be provided to the operator of any MS4 receiving the discharge, and a list must be included in the SWP3 that includes the names and addresses of all MS4 operators receiving a copy.

Information that may be included on an NOC includes, but is not limited to, the following: the description of the construction project, an increase in the number of acres disturbed (for increases of one or more acres), or the operator name. A transfer of operational control from one operator to another, including a transfer of the ownership of a company, may not be included in an NOC.

A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing number (or charter number) that is on record with the Texas Secretary of State must be changed.

An NOC is not required for notifying TCEQ of a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

7. Signatory Requirement for NOI Forms, Notice of Termination (NOT) Forms, NOC Letters, and Construction Site Notices

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

8. Contents of the NOI

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

(a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;

(b) the name, address, and telephone number of the operator filing the NOI for permit coverage;

(c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

(d) the number of acres that will be disturbed by the applicant;

(e) confirmation that the project or site will not be located on Indian Country lands;

(f) confirmation that a SWP3 has been developed in accordance with this general permit, that it will be implemented prior to construction, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;

(g) name of the receiving water(s);

(h) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and

(i) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters.

Section F. Terminating Coverage

1. Notice of Termination (NOT) Required

Each operator that has submitted an NOI for authorization under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit. Authorization must be terminated by submitting an NOT on a form supplied by the executive director. Authorization to discharge under this general permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

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

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

2. Minimum Contents of the NOT

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

(a) if authorization was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for the construction site;

(b) an indication of whether the construction activity is completed or if the permittee is simply no longer an operator at the site;

(c) the name, address, and telephone number of the permittee submitting the NOT;

(d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and

(e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites

Each operator that has obtained automatic authorization and has not been required to submit an NOI must remove the site notice upon meeting any of the conditions listed below, complete the applicable portion of the site notice related to removal of the site notice, and submit a copy of the completed site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3), within 30 days of meeting any of the following conditions:

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual or general TPDES permit.

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

4. Transfer of Operational Control

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

When the primary operator of a large construction activity changes or operational control is transferred, the original operator must submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the NOT must be provided to the operator of any MS4 receiving the discharge in accordance with Section II.F.1. above.

Operators of regulated construction activities who are not required to submit an NOI must remove the original site notice, and the new operator must post the required site notice prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the completed site notice must be provided to the operator of any MS4 receiving the discharge, in accordance with Section II.F.3. above.

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

(a) Another operator has assumed control over all areas of the site that have not been finally stabilized; and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Record of this notification (or attempt at notification) shall be retained by the operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

(b) A homebuilder has purchased one or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements listed above, including the development of a SWP3 if necessary. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to lot(s) it has operational control over, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

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

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, where all of the following conditions are met. This waiver from coverage does not apply to non-stormwater discharges. The operator must insure that any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

(a) the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5);

(b) the operator submits to the TCEQ a signed waiver certification form, supplied by the executive director, certifying that the construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5); and

(c) the waiver certification form is postmarked for delivery to the TCEQ at least seven (7) days before construction activity begins or, if electronic filing is available, then any time following the receipt of written confirmation from TCEQ that a complete electronic application was submitted and acknowledged.

2. Steps to Obtaining a Waiver

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

(a) Estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.

(b) Find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.

(c) Find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.

(d) Refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.

(e) Multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than 5, then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: http://ei.tamu.edu/index.html, or using another available resource.

The waiver certification form is not required to be posted at the small construction site.

3. Effective Date of Waiver

Operators of small construction activities are provisionally waived from the otherwise applicable requirements of this general permit seven (7) days from the date that a completed waiver certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, if electronic form submittals are available.

4. Activities Extending Beyond the Waiver Period

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

(a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new waiver certification form at least two (2) days before the end of the original waiver period; or

(b) obtain authorization under this general permit according to the requirements delineated in either Part II.E.2. or Part II.E.3. before the end of the approved waiver period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC §305 (relating to Consolidated Permits). Applications for individual permit coverage should be submitted at least three hundred and thirty (330) days prior to commencement of construction activities to ensure timely authorization.

2. Individual Permit Required

The executive director may suspend an authorization or deny an NOI in accordance with the procedures set forth in 30 TAC §205 (relating to General Permits for Waste Discharges), including the requirement that the executive director provide written notice to the permittee. The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

(a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;

(b) the activity being determined to cause a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state: and

(c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC Chapter 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger “has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.”

Additionally, the executive director may cancel, revoke, or suspend authorization to discharge under this general permit based on a finding of historical and significant noncompliance with the provisions of this general permit, relating to 30 TAC §60.3 (Use of Compliance History). Denial of authorization to discharge under this general permit or suspension of a permittee’s authorization under this general permit shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

3. Alternative Discharge Authorization

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

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC §205.3 (relating to

(2) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

(3) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

(4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

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

(ii) Controls for Sites With Drainage Areas Less than Ten Acres:

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

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

(C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part III.G.6 of this general permit.

3. Description of Permanent Stormwater Controls

A description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are only responsible for the installation and maintenance of stormwater management measures prior to final stabilization of the site or prior to submission of an NOT.

4. Other Required Controls and BMPs

(a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 shall include a description of controls utilized to accomplish this requirement.

(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

(c) The SWP3 must include a description of potential pollutant sources from areas other than construction (such as stormwater discharges from dedicated asphalt plants and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

(e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

(f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part III.G of this general permit.

5. Documentation of Compliance with Approved State and Local Plans

(a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.

(b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.

(c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.

6. Maintenance Requirements

(a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

(b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.

(c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter

Section G. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1. *Erosion and sediment controls*. Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

   (a) Control stormwater volume and velocity within the site to minimize soil erosion;

   (b) If any stormwater flow will be channelized at the site, stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion;

   (c) Minimize the amount of soil exposed during construction activity;

   (d) Minimize the disturbance of steep slopes;

   (e) Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

   (f) If earth disturbance activities are located in close proximity to a surface water, provide and maintain appropriate natural buffers if feasible and as necessary, around surface waters, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are not feasible, and shall implement additional erosion and sediment controls to reduce sediment load;

   (g) Preserve native topsoil at the site, unless infeasible; and

   (h) Minimize soil compaction in post-construction pervious areas. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:

      (1) restrict vehicle and equipment use to avoid soil compaction; or

      (2) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible;

   (i) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute “surface waters” for the purposes of triggering the buffer requirement in Part III.G.(f) above.

2. *Soil stabilization*. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In the context of this requirement, “immediately” means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary

stabilization must be completed no more than 14 calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements.

3. *Dewatering*. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.
4. *Pollution prevention measures*. Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
   (a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
   (b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and
   (c) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.
5. *Prohibited discharges*. The following discharges are prohibited:
   (a) Wastewater from wash out of concrete trucks, unless managed by an appropriate control (see Part V of the general permit);
   (b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
   (c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
   (d) Soaps or solvents used in vehicle and equipment washing.
6. *Surface outlets*. When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

Part IV. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants at regulated construction sites may be authorized under the provisions of this general permit provided that the following requirements are met for concrete batch plant(s) authorized under this permit. If discharges of stormwater runoff from concrete batch plants are not covered under this general permit, then discharges must be authorized under an alternative general permit or individual permit. This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements

of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease	15 mg/L	1/quarter (*1) (*2)	Grab (*3)
Total Suspended Solids	100 mg/L	1/quarter (*1) (*2)	Grab (*3)
pH	6.0 – 9.0 Standard Units	1/quarter (*1) (*2)	Grab (*3)
Total Iron	1.3 mg/L	1/quarter (*1) (*2)	Grab (*3)

(*1) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(*2) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

January through March

April through June

July through September

October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Section II.E.2., and prior to terminating coverage.

(*3) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

(a) any additional potential sources of pollution, such as spills that might have occurred,

(b) necessary revisions to good housekeeping measures that are part of the SWP3,

(c) additional BMPs, including a schedule to install or implement the BMPs, and

(d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater runon to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

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

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit (including, but not limited to Part III.F.7. of this permit):

1. Description of Potential Pollutant Sources - The SWP3 must provide a description of potential sources (activities and materials) that may reasonably be expected to affect the quality of stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe practices that that will be used to reduce the pollutants in these discharges to assure compliance with this general permit, including the protection of water quality, and must ensure the implementation of these practices.

   The following must be developed, at a minimum, in support of developing this description:

   (a) Drainage – The site map must include the following information:

      (1) the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;

      (2) a depiction of the drainage area and the direction of flow to the outfall(s);

      (3) structural controls used within the drainage area(s);

      (4) the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

      (5) the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

   (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to

affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.

(c) Spills and Leaks - A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.

(d) Sampling Data - A summary of existing stormwater discharge sampling data must be maintained, if available.

2. Measures and Controls - The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from Part IV.B.1.(a) of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:

(a) Good Housekeeping - Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.

(1) Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.

(2) Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.

(b) Spill Prevention and Response Procedures - Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

(c) Inspections - Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. The inspection frequency must be specified in the SWP3 based upon a consideration of the level of concrete production at the facility, but must be a minimum of once per month while the facility is in operation. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

(d) Employee Training - An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in

the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.

(e) Record Keeping and Internal Reporting Procedures - A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(f) Management of Runoff - The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following.

(a) Visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.

(b) Based on the results of the evaluation, the following must be revised as appropriate within two weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part IV.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part IV.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.

(c) The permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any incidence(s), and the report must be signed according to 30 TAC §305.128, relating to Signatories to Reports.

(d) The Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part IV.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part V of this general permit.

Part V. Concrete Truck Wash Out Requirements

This general permit authorizes the wash out of concrete trucks at construction sites regulated under Sections II.E.1., 2., and 3. of this general permit, provided the following requirements are met. Authorization is limited to the land disposal of wash out water from concrete trucks. Any other direct discharge of concrete production waste water must be authorized under a separate TCEQ general permit or individual permit.

1. Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
2. Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
3. Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
4. The discharge of wash out water must not cause or contribute to groundwater contamination.
5. If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VI. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required by Part II.E.3. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

1. A copy of the SWP3;
2. All reports and actions required by this permit, including a copy of the construction site notice;
3. All data used to complete the NOI, if an NOI is required for coverage under this general permit; and
4. All records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VII. Standard Permit Conditions

1. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued, and is grounds for enforcement action, for terminating, revoking, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit.
2. Authorization under this general permit may be suspended or revoked for cause. Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for revoking, suspending, or

terminating authorization under this permit. Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.

3. It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
4. Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§361.032-361.033 and 361.037, and 40 CFR §122.41(i). The statement in TWC §26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
5. The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
   (a) negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §§402(a)(3) or 402(b)(8);
   (b) knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
   (c) knowingly violating §303 of the federal CWA, and placing another person in imminent danger of death or serious bodily injury.
6. All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
7. Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
8. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
9. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
10. The permittee shall comply with the reporting requirements in 40 CFR §122.41(l), as applicable.

Part VIII. Fees

1. A fee of must be submitted along with the NOI:
   (a) $325 if submitting a paper NOI, or
   (b) $225 if submitting an NOI electronically.

2. Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
3. No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

Appendix A: Automatic Authorization

Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30

Archer: Dec. 15 - Feb. 14

Armstrong: Nov. 15 - Apr. 30

Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Baylor: Dec. 15 - Feb. 14

Borden: Nov. 15 - Apr. 30

Brewster: Nov. 15 - Apr. 30

Briscoe: Nov. 15 - Apr. 30

Brown: Dec. 15 - Feb. 14

Callahan: Dec. 15 - Feb. 14

Carson: Nov. 15 - Apr. 30

Castro: Nov. 15 - Apr. 30

Childress: Dec. 15 - Feb. 14

Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Coke: Dec. 15 - Feb. 14

Coleman: Dec. 15 - Feb. 14

Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Concho: Dec. 15 - Feb. 14

Cottle: Dec. 15 - Feb. 14

Crane: Nov. 15 - Apr. 30

Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Crosby: Nov. 15 - Apr. 30

Culberson: Nov. 1 - May 14

Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Dawson: Nov. 15 - Apr. 30

Deaf Smith: Nov. 15 - Apr. 30

Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Dimmit: Dec. 15 - Feb. 14

Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Eastland: Dec. 15 - Feb. 14

Ector: Nov. 15 - Apr. 30

Edwards: Dec. 15 - Feb. 14

El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14

Fisher: Dec. 15 - Feb. 14

Floyd: Nov. 15 - Apr. 30

Foard: Dec. 15 - Feb. 14

Gaines: Nov. 15 - Apr. 30

Garza: Nov. 15 - Apr. 30

Glasscock: Nov. 15 - Apr. 30

Hale: Nov. 15 - Apr. 30

Hall: Feb. 1 - Mar. 30

Hansford: Nov. 15 - Apr. 30

Hardeman: Dec. 15 - Feb. 14

Hartley: Nov. 15 - Apr. 30

Haskell: Dec. 15 - Feb. 14

Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Howard: Nov. 15 - Apr. 30

Hudspeth: Nov. 1 - May 14

Hutchinson: Nov. 15 - Apr. 30

Irion: Dec. 15 - Feb. 14

Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14

Jones: Dec. 15 - Feb. 14

Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30

Kerr: Dec. 15 - Feb. 14

Kimble: Dec. 15 - Feb. 14

King: Dec. 15 - Feb. 14

Kinney: Dec. 15 - Feb. 14

Knox: Dec. 15 - Feb. 14

Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Lubbock: Nov. 15 - Apr. 30

Lynn: Nov. 15 - Apr. 30

Martin: Nov. 15 - Apr. 30

Mason: Dec. 15 - Feb. 14

Maverick: Dec. 15 - Feb. 14

McCulloch: Dec. 15 - Feb. 14

Menard: Dec. 15 - Feb. 14

Midland: Nov. 15 - Apr. 30

Mitchell: Nov. 15 - Apr. 30

Moore: Nov. 15 - Apr. 30

Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Nolan: Dec. 15 - Feb. 14

Oldham: Nov. 15 - Apr. 30

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Pecos: Nov. 15 - Apr. 30

Potter: Nov. 15 - Apr. 30

Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Randall: Nov. 15 - Apr. 30

Reagan: Nov. 15 - Apr. 30

Real: Dec. 15 - Feb. 14

Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Runnels: Dec. 15 - Feb. 14

Schleicher: Dec. 15 - Feb. 14

Scurry: Nov. 15 - Apr. 30

Shackelford: Dec. 15 - Feb. 14

Sherman: Nov. 15 - Apr. 30

Stephens: Dec. 15 - Feb. 14

Sterling: Nov. 15 - Apr. 30

Stonewall: Dec. 15 - Feb. 14

Sutton: Dec. 15 - Feb. 14

Swisher: Nov. 15 - Apr. 30

Taylor: Dec. 15 - Feb. 14

Terrell: Nov. 15 - Apr. 30

Terry: Nov. 15 - Apr. 30

Throckmorton: Dec. 15 - Feb. 14

Tom Green: Dec. 15 - Feb. 14

Upton: Nov. 15 - Apr. 30

Uvalde: Dec. 15 - Feb. 14

Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Wichita: Dec. 15 - Feb. 14

Wilbarger: Dec. 15 - Feb. 14

Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14

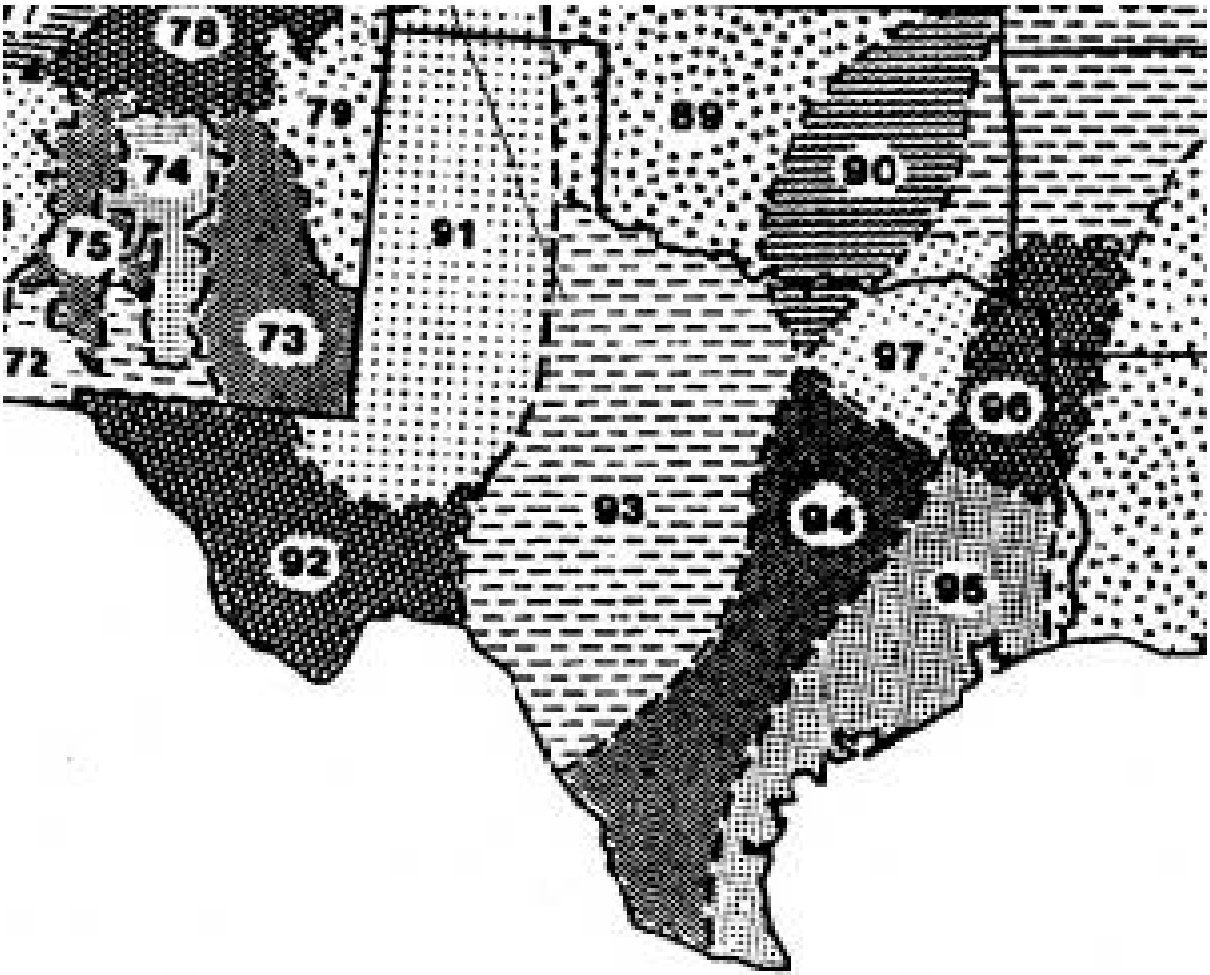
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Young: Dec. 15 - Feb. 14

Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

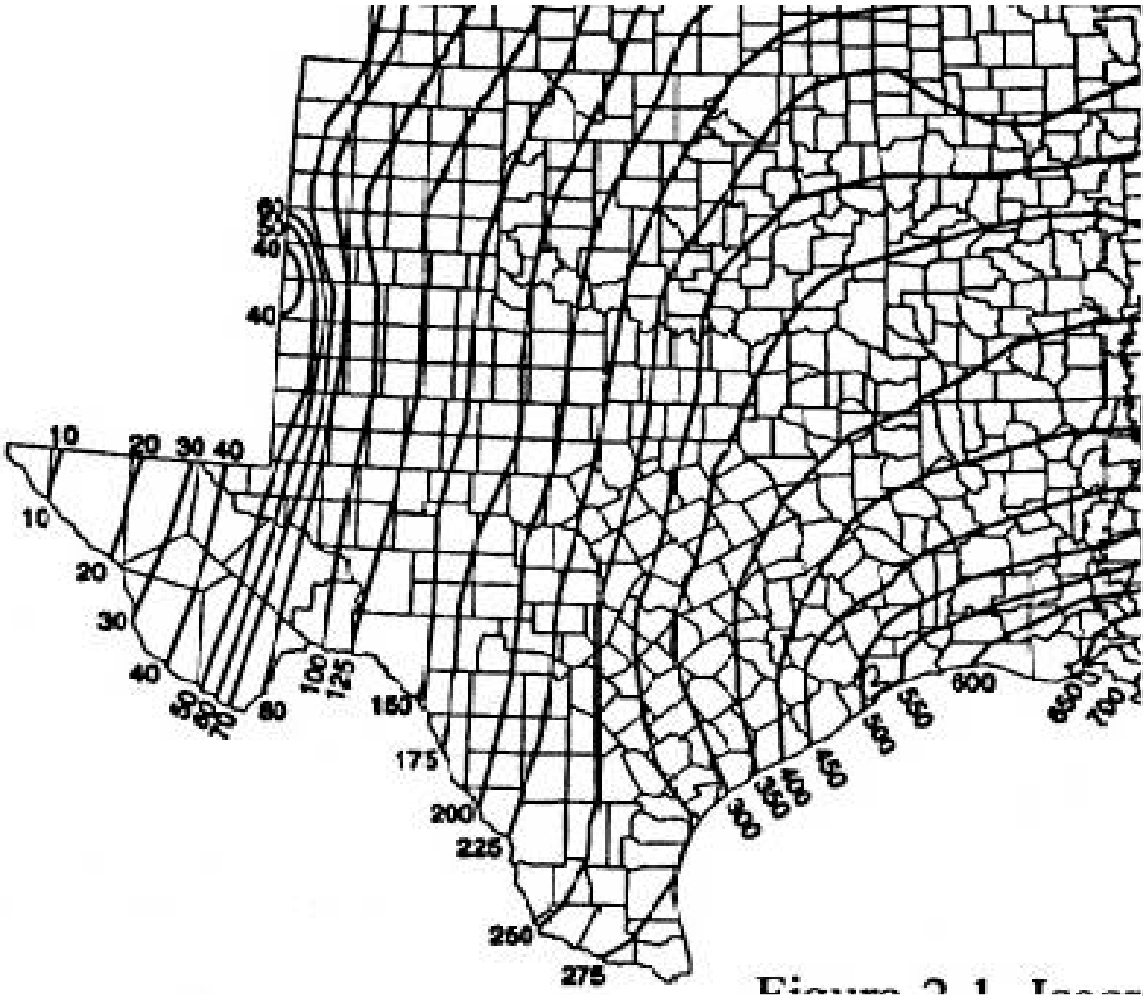
Zavala: Dec. 15 - Feb. 14

Appendix B: Erosivity Index (EI) Zones in Texas



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Periods:

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

* Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

APPENDIX H

SITE NOTICE, NOTICE OF INTENT, NOTICE OF CHANGE AND NOTICE OF TERMINATION FORMS

Operator Notes

Construction Site Notice

The construction site notice located in Appendix H should be posted along with a signed copy of the Notice of Intent. The site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction.

Notice of Intent (NOI)

The TPDES General Permit TXR 150000 requires that a NOI be submitted before construction activities begin. The NOI is essentially an application and contains items such as important information about your site, including site location, owner information, operator (general contractor) information, receiving water(s), and a brief description of the project.

TCEQ has developed a form to be used by industrial facilities and construction activities when they submit NOIs. This form indicates all the information that you are required to provide and must be used in order for the NOI to be processed correctly.

Primary Operators

Please note that both Owners and Contractors can meet the definition of being a "primary operator."

Primary operators must submit a NOI at least seven days prior to commencing construction activities, or if utilizing electronic submittal, prior to commencing construction activities.

If an additional primary operator is added after the initial NOI is submitted, the new primary operator must:

- submit a paper NOI at least seven days before assuming operational control, or
- submit an electronic NOI prior to assuming operational control.

If the primary operator changes after the initial NOI is submitted, the new primary operator must:

- submit a paper NOI at least ten days before assuming operational control, or
- submit an electronic NOI at least ten days before assuming operational control

All primary operators must post a copy of the signed NOI at the construction site in allocation where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities. A copy of the signed NOI must be submitted to the operator of any MS4 receiving the discharge and to any secondary operator, at least seven days prior to commencing construction activities. A list of the MS4 operators receiving a copy of the NOI is located in Appendix H.

Secondary Operators

Secondary operators are not required to submit a NOI, provided that another operator(s) at the site has submitted a NOI, or is required to submit a NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage under the permit. Please refer to the general permit for more information.

NOI Fees

Please note the fees associated with NOI submission:

- $325 if submitting a paper NOI, or
- $225 if submitting an electronic NOI.

No separate annual fees will be assessed. The Water Quality Annual fee has been incorporated into the NOI fees.

It is anticipated that there will be projects where more than one entity (e.g., the owner, developer, or general contractor) will need to submit an NOI so that the requirements for an operator are met. In this case, those persons will share the Storm Water Pollution Plan, and the submittal of the NOI and the TPDES Permit Number will need to be recorded in the NOI log located in Appendix F.

Please refer to the general permit and NOI form instructions for more information.

Notice of Change (NOC)

The operators are responsible for updating the SWP3 to implement and maintain sediment controls and submit a Notice of Change (NOC) if off-site material, waste, borrow, fill or equipment storage areas are being utilized and are not under a separate permit. An operator must submit a NOC letter in conformance with TPDES General Permit TXR150000 if they become aware of any incorrect information in an NOI or failed to submit any relevant facts.

Information that may be included on an NOC includes, but is not limited to, the following: the description of the construction project, an increase in the number of acres disturbed (for increases of one or more acres), or the operator name. A transfer of operational control from one operator to another, including a transfer of the ownership of a company, may not be included in an NOC. A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing number (or charter number) that is on record with the Texas Secretary of State must be changed.

An NOC is not required for notifying TCEQ of a decrease in the number of acres disturbed. This information must be included in the storm water pollution prevention plan (SWP3) and retained on site.

A list of the MS4 operators receiving a copy of the NOC is located in Appendix H.

Notice of Termination (NOT)

Any operator that has submitted a NOI must apply to terminate authorization of the general permit. The NOT is a form which should be completed and submitted to the TCEQ within 30 days of the following:

- final stabilization has been achieved on all portions of the site that are the responsibility of the permittee,

- a transfer of operational control has occurred, or
- the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

Information to be included on the NOT includes the location of the construction site; the name, address, and telephone number of the operator terminating coverage; the TPDES General Permit Number; an indication of why coverage under the permit should be terminated for the operator; and a signed certification statement.

Authorization under the general permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If the NOT is submitted electronically, the permit terminates immediately following confirmation of receipt of the NOT by TCEQ.

Note that when there is a change in operators of a construction activity, then the new operator must submit an NOI.

NOT's should be submitted to MS4 Operator(s). A list of the MS4 operator(s) receiving a copy of the NOT is located in Appendix H.

Record of Submittals to MS4s

Form Type	MS4 Name	Address	Date Submitted

LARGE CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Storm Water Program

TPDES GENERAL PERMIT TXR150000

"PRIMARY OPERATOR" NOTICE

This notice applies to construction sites operating under Part II.E.3. of the TPDES General Permit Number TXR150000 for discharges of storm water runoff from construction sites equal to or greater than five acres, including the larger common plan of development. The information on this notice is required in Part III.D.2. of the general permit. This notice shall be posted along with a copy of the signed Notice of Intent (NOI), as applicable. Additional information regarding the TCEQ storm water permit program may be found on the internet at:

http://www.tceq.state.tx.us/nav/permits/sw_permits.html

Site-Specific TPDES Authorization Number:	
Operator Name:	
Contact Name and Phone Number:	
Project Description: *Physical address or description of the site's location, and estimated start date and projected end date, or date that disturbed soils will be stabilized.*	
Location of Storm Water Pollution Prevention Plan:	

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

TCEQ

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IMPORTANT:

- 8VH INSTRUCTIONS WR ILOO RXW HDFK T...
- 8VH CHECKLIST WR PDNH FHUWDLQ DOO ...
  ,QFRPSOHWH DSSOLFDWLRQV ... DSSOLFDWLRQ ...
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3D\PHQW GXH DSSOLFDWLRQ ...

APPLICATION FEE:

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- **Provide your payment information below, for verification of payment:**
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RENEWAL: Is this NOI a Renewal of an existing General Permit Authorization?
(Note: A permit cannot be renewed after June 3, 2013.)

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(If a permit number is not provided, a new number will be assigned.)
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d) , F H U W L I \ W K D W D O O D S S O L F D E O H
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Operator Certification:

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(Use blue ink)

NOTICE OF INTENT CHECKLIST (TXR150000)

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,QVWUXFWLRQV IRU PDLOLQJ DGGUHVVH
7KLV FKHFNOLVW LV IRU XVH E\ WKH R
PD\ UHVXOW LQ GHQLDO [illegible]
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$SSOLFDWLRQ)HH

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- [ ] &RPPRQ SODQ RI GHYHORSPHQ
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Where to Send the Notice of Intent (NOI):

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$ X V W L Q 7 H [D V $ X V W L Q 7 ;

TCEQ Contact List:

$ S S OL VL WD DQ WG TR XH UU HP V W *512/239-0130, swpermit@tceq.texas.gov*
7 H F TK QL LV FW DL OR Q V *512/239-4671, swgp@tceq.texas.gov*
(Q Y L U R Q P H Q W D O *512/239-0600 ' L Y L V L R Q*
5 H F R U G VR E OR WD DQ LL HQ J V *512/239-0900 W R U P V*
5 H S R UG D WW V D E I D U V R H P V *512/239-DATA (3282) Y D L O D E O H*
&D V ¶K L RH UU I L F H *512/239-0357 or 512/239-0187*

Notice of Intent Process:

: K H Q \ R X U 1 2 , L V U H F H L Y H G E

Administrative Review: **(D F K L W H P R Q W K H I R**
, Q D G G L¶ W LD RH QQ D O W KE H R Y S H U L D W R U
D Q G D F W L Y H L I D S S O L8 F6 D E3 OR HV W
V YH LU F H D V U H1 FH HY LH YU L Q J L Y UH H J DX QO D RU Y

Notice of Deficiency: **, I D Q L W H P L V L Q F R P S**
Q R W L F H R I G H I L F L H Q F\ LO O 1K 2 D' Y H
U H V S R Q G W R W K H 1 2 ' 7 K H U

Acknowledgment of Coverage: **$Q $ F N Q R Z O H G J P H Q W**
R S H U D W R U 7 K L V F H U W L I L F D W
R U

Denial of Coverage: **, I W K H R S H U D W R U I D L O**
L Q D G H T X D W H F R Y H U D J H X Q G H U
R S H U D W R U Z L O O E H Q R W L I L H G

General Permit (Your Permit)

) R U 1 2 electronically V WX KE UP LR ,WXUWJKH Y GL H V3 LH RU QP DL OW V F R
S H U P L W E H J L Q V L P P H G L D W H O \ I

) R pU aper 1 2 , VS UR YR LY VH LU RD QJ DH O X FQ 7 days after a W K H J
completed NOI is postmarked for delivery W R W K H 7 & (4

< R X V K R X O G K D Y H D F R S \ R I \ R X U J H Q
D Q G S U L Q W \ R X U S H U P L W I R U Z K L F K \ R
K W W S Z Z Z 6 W H F D H U F K W H [V D L Q J R Y H \ Z R U G 7

General Permit Forms

7 K H 1 R W L F H R I , Q W H Q W 1 2 ,
L Q F O X G L Q J L Q V W U X F W L R Q V D U
K W W S Z Z Z W F H T W H [D V J R Y

Change in Operator

$ Q D X W K R U L] D W L R Q X Q G H U W K H
H Q W L W \ F K D Q J H V W K H S U H V H Q
R S H U D W R U P X V W V X E XP EL PWL W DW H1 GR W
G D \ V S U L R U W R W K H F K D Q J H L

TCEQ Central Registry Core Data Form

7 K H & R U H ' D W D) R U P &R KUDHWV D PE H VH KQ
7 & (4 $ I W H U I LJ QH DQ OH U DD FO N QS RH ZU OP HL
D V V L J Q D & X V W R P H U 1 X P E H U D Q

< R X F D Q I L Q G W K H L Q I R U P D W L R
K W W S Z Z Z I P< R X W F H D T Q W VH H[D U F K R
& X V W R P H U 1 X P E H U & 1 R U 1 D E
O DA E GHG D W@L RQ D&OD S,L'W D O L] H D O O O H W W H U V L Q W K H

7 K H & X V W R P H U 3 H U S R U W L H G L Q J L V F R Q V L V W R Q V W E O H Q I
I R U X S G D W L Q J D O O & 1 D W Q R Q 1 D G D W R D Q R H V D R F D
1 R W L F H R I & K D Q J H I R U P P X V W E H V X E P L W W H G W

Fees associated with a General Permit

3 D \ P H Q W H R I H H P D \ E H P D G H E \
H O H F W U R Q L F S D \ P H Q W W K U R X J H

Application Fee: *7 K L V I H H L V U H T X L U H G V X E P L W S D \ P H Q W D W W K H W L P H G H Q L D O R I F R Y H U D J H X Q G H U W*

0 D L O H G 3 D \ P H Q W V

3 D \ P H Q W X Q G H U V W V H H S D P D W O H H G F R Y H D W W D F K H G $ S S O L F D W L R Q) H H 7 + ($ 3 3 / , & $ 7 , 2 1) ((6 8 % 0 , 7 7 $ /

*% < 5 (* 8 / $ 5 8 % 6< 2 0 $ 5 1 , * + 7 (; 3 7 H [D V & R P P L V V L R Q V R &Q R P(PQ LY VL VU LR R) L Q D Q F L D O $ G)P LL QQ DL QV FW LU DD O W L$ RG QP L 'Q & D ¶V K 2 H IU L F H &0 D ¶V K 2 H IU L F H 0 & 3 2 % R [3 D U N $ X V W L Q 7 ; $ X V W L Q 7 ;*

H 3 $ < (O H FKWWUWRSQ L F ZZZ P WFH T W H [D V J R
: K H Q P D N L Q J W K H S D \ P H Q W \ R X P X V W
³ * H Q H U&DROQ V3WHWURDELWWL UR Q ' LS VS SKOD LF JD HW L 1R 2Q, ´
D F R S \ R I W K H S D \ P H Q W Y R X F K H U Z L W
Z L W K R X W W K H S D \ P H Q W Y R X F K H U

INSTRUCTIONS FOR FILLING OUT THE NOI FORM

Renewal of General Permit. ' L V F K D U J H U QQXV QK GR HO UG L WQ JK
* H Q H U D O 3 H U P L W D U H U H T X L U H
L V U H T X L U H G , I W K H S H U P L W
Q H Z S H U P L W Q X P E H U Z L O O E H I

1. Operator (Applicant)

a) Enter assigned Customer Number (CN)
7 & (4 ¶ V & H Q W U D O 5 H J L V W U \ Z L O
Q L QThH is not a permit number, registration number, or license number
, I W K L VE H HH XQ V WD RV W HL JU Q HK CO D V D Q &R 1W O
, I W K L V F X V W R P H U K DW V &D1 O U H D C

b) Legal Name
3 U R Y L G H W K H F X U U H Q W O H J D O
Q D P HS U PR XY VL WG H IG H H [D F W O \ D V I L O E
G R F X P H Q W V I R U P L Q J W K H H Q W L
W K H 6 2 6 D W I R U P R U H L Q I R U P
Z K H U H G R L Q J E X V L Q H V V S U R Y L

c) Person Signing Application
3 U R Y L G H L Q I R U P D &W HL RQ L DD LE FR DX WW L RS

d) Operator Contact's (Responsible Authority) Contact Information and Mailing Address
3 U R Y L G H D F R P S O H W H P D L O L Q J
Y H U L I L D E O H K WZ W W K I RW UK ZH ZU H8 X6 X S3 YR UV FV
R Y H U Q L J K W H [S U H V V P D L O , I
S O H D V H L Q G L F D W H W K H D G G U H V

7 HD U H D F R G H D Q G S K R Q H Q X P E H
L I Q R W D S S O L F D E O H

7 K H I D P[D LQ OX P EG HG U U HD VQ VG DH U H R S W L

e) Type of Customer (Entity Type)
& K H F N R Q O \ R Q H E R W[L RW QK VD WE H LO GR
D S S U R S U R D W WH H W HK QD WW L WW \K HW HW \S QH D W H HP W
S U R Y L G H G D V D Q D S S O L F D Q W I R

Sole Proprietorship – DBA

**$ VROH FXVWWRKSRDPWHHU WRU RZ KQ LHH G L YE **
**L Q F R 7U KS IR VU D EW XHVGL Q H V V P D **

- **x** E H X Q G H U W K H S H U V R Q ¶ V Q D P H
- x K D Y H L W V R Z Q Q D P H G R L Q J E X V L
- x K D Y H D Q \ Q X P E H U R I H P S O R \ H H V

, I W K UH LF VX V DW R 6P RH O H 3W UK RH S UµL OH HW R O V KQ DS H
E X V L Q H V V µR Z Q H UQ¶P PHX VLW HQ R W S UR HY FLR G I
R I W K H HQ Q PW HL W R D \ 7 EK HH X %6 $H G I R U W K H

Individual

$ Q L QF GX LV YWL RG PX HD UO ZL KV R D K D V Q R W
W K D W Q H H G V W R E H U H J X O D W

Partnership

- **x** $ F X V W R P H U W K D W L V H V W D E O L V K H
  R I 6 W D W H 2 I I L F H / L7 P, L W6 2H 6G / L $ E /L LOP
  3 D U W Q H U V K L S L V U H T X L U H G W R
  3 D U W Q H U V K L S R U - R L Q W 9 H Q W X U H
- x **Partnership (Limited Partnership or Limited Liability Partnership):** **$**
  OP LL W H G S D U W Q H U V K L S L V G H
  S H U V R Q V X Q G H U W K H S U R Y L
  $ U W D 5 H Y L V H G &
  J H Q H UD DQ OG SR DQ UH W QR HU U VP R U H O L P
  D U H Q R W E R X Q G E \ W K H R I
  W D N H WSGEDD U\ W R E HQ U DW WK HH R QG VD \ R I
  P X V W I L O H I Z6 LWWDKW HW K H $ 7 UH H[JD
  S D U W Q H U V K L S L V D J H Q H U D
  6 H F U H W D U \ R I 6 W D W H 7 K H
  / L P L W H G / L D E L O 3L W \ DS DU WW QK
  O H W W H U V R I L W V Q D P H
- **x General Partnership:** **$ J H Q H U D O S D U W Q H U**
  U X Q Q L Q J W K H S D U W Q H U V K L S
  D Q \ P H P E H U R I L W $ * H Q
  *** H Q H U D O 3 D U W Q H U V K L S W K**
  D J U H H P H Q W Q H F H V V D U \ I R U
  R I D S D U W Q H U V K L S R UL HV SJ HH UQ
  F D U U R\ Z QR HQ U VD V D F ER X V L Q H V V I R
  > @
- **x Joint Venture:** **$ M R L Q W Y H Q W X U H L V**
  P L J K W E H G L V W L Q J X L V K H G
  W K H W U D Q V D F W L R Q R I D J H
  V L Q J O H W U D Q V D F W L R Q 7 K D
  W K H Q D W X U H R I D ES DE XU OW DQ UH
  W U D Q V D F W L R Q I R U P X W X D O

Corporation

$ F X V W R P H U P H H W V D O O R I

- **x** L V D O H J D O O \ L Q F R U S R U D W H G H Q W
- x L V U H F R J Q L] H G D V D F R U S R U D W L R

x K D V S U R S H U R S H U D W L Q J D X W K R U L W
x 7 K H F R U S R U D W L R Q ¶ V µ O H J D O Q D P H
S U R Y L G H G D V D S S O L F D Q W $ Q µ D
W K H µ O H J D O Q D P H ¶ R I W K H H Q W L W

Government

) H G H U D W D W H F R X Q W \ R U F
7 K H F X V W R P H U L V H L W K H U D
J R Y H U Q P H Q W D O E R G \ L W V H O I
D S S O L F D Q W H U $G H G H V S D L S W P R Q W R
L Q F O X RGWHKGH DµVO H DJ D SD UQ WP H ¶ D V

Trust or Estate

$ W U X V W D Q G D Q H V W D W H D U
U H V S H F W W R W K H W U X V W H V W

Other Government

$X W L O L W \ G L V W U L F W Z D W H U
J R Y H U Q P H Q W V R U U L Y H U D X

Other

7 K H F X V W R P H U G R H V Q R W I L W
W \ S H R I F X V W R P H U L Q W K H

f) Independent Entity

& K H F N 1 R L I W K L V F X V W R P H U I
2W K H U Z L V H F K H F N < H V

g) Number of Employees

& K H F N R Q H E R [W R ¶V V KH RQ ZW L WW KH H F
O R F D W L R Q V 7 K L V L V Q R S W S O QL HF FD

h) Customer Business Tax and Filing Numbers

7 K H V H D U H U H T X L U H G I R U & R U S
, Q G L Y L G X D O V V * R Y H U Q P H Q W D Q

State Franchise Tax ID Number

& R U S R U D W L R Q V D Q G O L P L W H G C
L G H Q W L I L F D W L R Q Q X P E H U , I
W K L V Q X P E H U K H U H

Federal Tax ID

$ O O E X V L Q H V V H V H [F H S W I R U
V K RY XH O GD KI DH G H U D O W D [S D \ H U L C
S U H I L [H V G D V K H V R U K \ S K H
Q H H G W R S U R Y L G H D I H G H U D O

TX SOS Charter (filing) Number

& R U S R/ UL DP WW WH HQG V 3 DD QU GW Q H U V K L S V U
D U H L V V X H G D F K D U W H U R U I

DUNS Number

0 R V W E X V L Q H V V H V P K D Y QH X P DE H 'U8 1
D Q G % U D G V W U H H W & R U S , I W

2. APPLICATION CONTACT

3 U R Y L G H W K H Q D P H W L W O H D Q
D G G L W L R Q D O L Q I R U P D W L R Q U H J D

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

a) Regulated Entity Reference Number (RN)

$ Q X P E H U ¶V L W& WH XQ HW GU D EO \ 5 7 H& J (L4 V W U \ W
R F F X U V U H J X O D W H G E \ 7 & (4
Q X P E H U , I W K L V U H J X O D W H G

, I W K H V L W H R I \ R X U E X V L Q H V
D O U H D G \ E H D V V L J Q H G I R U W K H
& H Q W U D O 5 H J L V W U \ W R V H H L I
K W W S H T WZ HZ [Z D V J WR FY F U S X E L Q G H

, I W K H V L W H L V I R X Q G 5D 1Q GS U R W R
W K H L Q I R U P D W L R Q I R U 7WKKHH V VL LW
W K L V D X W K R U L] D W L R Q P D \ Y D U \

$ Q H [D P S O H L V D F K H P L F D O S O
L V D F F H V V L E O H E \ W K H V D P H S
L Q G SXDVUWN UV L DLOG H Q W L I L H G E \ R Q H
G H I L Q H G D U H D V Z L W K L Q W K H V
O R F D W L R Q D Q G W K H S HH U P5 L1 W W H G

b) Site/Project Name/Regulated Entity

3 U R Y L G H W K H Q D P H R I W K H V L
Q D P H \ R X S U R Y L G H R Q W K L V D S
(Q QW DL PW H\

c) Description of Activity Regulated

, Q \ R X U R Z Q Z R U G V E U L H I O \
D X W K R U L] D W L R Q ' R Q R W U H S H

d) County

, G H Q W L I \ W K H F R\ X QL W \ O RR UF D IW RH XG Q

e) Latitude and Longitude

(Q W H U W K H O D W L W X G H D Q G O R Q
) R U K H O S R E W D L Q L Q J W K H O D W
K W W S Z Z Z RVKUF WH WT S W H [QD VD W L RR YQ D

f) Site/Project (RE) Physical Address/Location Information

(Q W H U W K H F R P S O H W H D O L G GW UK WH H V
8 6 3 R V W D O 6 H U Y L F H , I W K H
Q H H G W R Y D O L G D W H W K H D G G U H

used to locate a site. Please confirm this to be a complete and valid address. Do not use a rural route or post office box for a site location.

If a site does not have an address that includes a street (or house) number and street name, enter NO ADDRESS for the street name in Section A. In Section B provide a complete written location description. For example: "The site is located 2 miles west from intersection of Hwy 290 & IH35, located on the southwest corner of the Hwy 290 South bound lane."
Provide the city (or nearest city) and zip code of the facility location.

4. GENERAL CHARACTERISTICS

a) Indian Country Lands

If your site is located on Indian Country Lands, the TCEQ does not have authority to process your application. You must obtain authorization through EPA, Region 6, Dallas. Do not submit this form to TCEQ.

b) Construction activity associated with facility associated with exploration, development, or production of oil, gas, or geothermal resources

If your activity is associated with oil and gas exploration, development, or production, you may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization from EPA Region 6. For more information, see:
http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=30

Construction activities associated with a facility related to oil, gas or geothermal resources may include the construction of a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a carbon dioxide geologic storage facility; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel.

Where required by federal law, discharges of stormwater associated with construction activities under the Railroad Commission's jurisdiction must be authorized by the EPA and the Railroad Commission of Texas, as applicable. Activities under Railroad Commission of Texas jurisdiction include construction of a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources, such as a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a carbon dioxide geologic storage facility under the jurisdiction of the Railroad Commission of Texas; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel. The Railroad Commission of Texas also has jurisdiction over stormwater from land disturbance associated with a site survey that is conducted prior to construction of a facility that would be regulated by the Railroad Commission of Texas. Under 33 U.S.C. §1342(l)(2) and §1362(24), EPA cannot require a permit for discharges of stormwater from "field activities or operations associated with {oil and gas} exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement

RI GUHGJLQJ ILOOLQJ HTXLSPHQW ZKHWKHU RU QRW VXE
FRQVWUXFWLRQ DFWLYLWLHV XQOHVV W
UDZ PDWHULDO LQWHUPHGLDWH SURGXF
WKH VLWH RI WKH IDFLOLW\ 8QGHU †
&RPPLVVLRQ RI 7H[DV SURKLELWV RSHU
VXEVXUIDFH ZDWHU HQGDQJHUPHQW RU EDVLQ
SUDFWLFHV %03V WR PLQLPL]H GLVFK
GXULQJ FRQVWUXFWLRQ DFWLYLWLHV WR
HYHQWV

c) Primary Standard Industrial Classification (SIC) Code

3URYLGH EHVW WKH G6,& FRGHV WKDW F

&RPPRQ 6,& &RGHV UHODWHG W

- &RQVWUXFWLRQ RI 6LQJOH)DPLO\
- &RQVWUXFWLRQ %OGJ 5HVLGHQWLDO
- &RQVWUXFWLRQ RI ,QGXVWULDO %O
- &RQVWUXFWLRQ RI 1RQ %OGJV RWK
  :DUHKRXVHV
- +LJKZD\ DQG 6WUHHW &RQVWUXFWL
- %ULGJH 7XQQHO DQG (OHYDWHG
- :DWHU 6HZHU 3LSHOLQH DQG &RP

)RU KHOS ZLWK 6,& &RGHV JR WR
KWWS ZZZ RVKD JRY SOV LPLV VLFVH

d) Secondary SIC Code

6HFRQGDU\ 6,& &RGH)RUPHUO\ E
JR WR
KWWS ZZZ RVKD JRY SOV LPL

e) Total Number of Acres Disturbed

3URYLGH WKH DSSUR[LPDWH QXPEHU
DFWLYLWLHV WKDW GLVWXUE OH
GLVWXUEV PRUH WKDQ RQH DFUH
GLVWXUE EHWZHHQ RQH DQG ILY
WKDQ ILYH DFUHV WKHQ D ODUJH
GLVWXUEHG OHVV WKDQ RQH DFUH
GLVWXUE GLVWXUEHG DFUHV
DFWLYLWLHV

,I \RX KDYH DQ\ TXHVWLRQV
DW RU E\ HPDLO DW VZJ

f) Common Plan of Development

&RQVWUXFWLRQ DFWLYLWLHV WK
XQOHVV WKH\ DUH SDUW RI D
ILYH RU PRUH DFUHV 7KHUH IR
XQOHVV WKH SURMHFW LV SDUW
PHDQV DQ\ JFO HHD[LQJ

) R U P R U H L Q I R U P D W L R Q R Q : K D W L V D
Z Z Z W F H T W H [D V J R Y S X E O L F D W L R Q V D E R

) R U I X U W K H U L Q I R U P D W L R Q J R W R W K H
Z Z Z W F H T W H [D V J R Y S X E O L F D W L R Q V D E R
\ R X K D Y H D Q \ I X U W K H U T X H V W L R Q V D E R

g) Identify the water body(s) receiving stormwater runoff

7 K H V W R U P Z D W H U U X Q R I I I U R P W K H V L W H G U D L Q D J H G L W F K < R X V K R X O G G H V F U L E H W K H V L W H D O R F D O V W U H D P R

, I \ R X U V L W H K D V P R U H W K D Q H D F K R X W I D O O L I W K H \ D U H

h) Identify the segment number(s) of the classified water body(s)

, G H Q W L I \ W K H F O D V V L I L H G V H J I R O O R Z L Q J O L Q N W R I L Q G W K H I O R Z Z L Z U R P W H K T H W H L W D H V J R Y Z D W

< R X P D \ D O V R I L Q G W K H V H J P H Z Z Z W F H T W H [D V J R Y S X E O L F D W

, I W K H G L V F K D U J H L V L Q W R D Q H Q W H U L Q J D F O D V V L I L H G V H J P H

- x & D Q D G L D Q 5 L Y H U % D V L Q
- x 5 H G 5 L Y H U % D V L Q
- x 6 X O I X U 5 L Y H U % D V L Q
- x & U&H\ HS NU H %D V L Q
- x 6 D E L Q H 5 L Y H U % D V L Q

& D O O W K H : D W H U 4 X D O L W \ I RS U V H XV U V W P KH Q W

i) Discharge into MS4

7 K H G L V F K D U J H P D \ L Q L W L D O O \ & R Q V W U3 XH U W L W Q U *H HT QK HL UU DH OV W K H 2 2 S H U D W R U

j) Identify the MS4 Operator

, W K H V W RL UQ PW ZS SD UW BH VH YK UL HG 0 G6 QL DV HF HK D RI J H W K Z K H U H W K HQ $ V 0W6 HL UV PR ZR SD IH WU HD UW R GU L VF HL KW G L V W U L F W E X W S R V V L E O \ F D Q * H Q H U D O 3 H U P L W U H T X L U H V W K 7 & (R U D V F D O W D Q W K H W \HR FXK Q PL DF \D O

k) Surface Water bodies on list of impaired waters

, Q G L F D W H < H V R U 1 R L I D Q \ V D U H R Q S SW UK RH Y HO GD W& H: W W D 3S $S UG R Y H /G

G / L V W R I L P S D L U H G Z D W H U V L Q
Z Z Z W F H T W H [D V J R Y Z D W H U T X D O L W \ D V

1 2 7'(R Q R W X V H D Q \ G U D I W G R F X P H Q W

l) Identify the impaired water body(s)

3 U R Y L G H W K H Q D PH U JV H V RRI U V SX RU V
W K H F R Q V W U X D W S L UR RQ Y HV CL W &H : $ W K D W
7 K HD S (S 3U $R Y H G & : $ G / L V W
Z Z Z W F H T W H [D V J R Y Z D W H U T X I

1 2 7R(Q R W X V H D Q \ G U D I W G R

m) Discharges to the Edwards Aquifer Recharge Zone

6 H H P D S V R Q W K H 7 & (4 Z H E V L W
& R Q W U L E X W L Q J = R Q H R U & R Q W
Z Z FZ H TW W H [D V J R Y I L H O G H D S S

, I W K H G L V F K D U J H R U S R W H Q W I
& R Q W U L E X W L Q J = R Q H Z L W K L Q W
D X W K R U L] D W L R Q D S S U R Y H G E \ W
3 U R J U D P 7 $ & & K D S W H U

7 K H J H Q H U D O S H U P L W U H T X L U H V
3 O D Q W R E H I L QW F KO HX G 6H WG R UR PU Z D UW H HI U

n) Certification regarding Edwards Aquifer Rule (30 TAC Chapter 213)

, I W K H G L VL ZE V K W K L L H Q N V UK H S R5 WH H K Q D V U
& R Q W U L E X W L Q J R I (= GR WZ QK D HU D GV ZV L W$ KT LX LQ LQ I HW G
& K D S W H U W L I L F D W W R H U W K H P X V W E H
* H Q H U D O 3 H U P L W 7 K H 7 & (4 D S
W K H W L P H W K D W W K H 1 2 , L V V

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. L Q Q H \ 0 H G L Q D D Q G 8 Y D O G H &
6 D Q $ Q W R Q L R 7 ;

5. CERTIFICATIONS

) D L O XYeU W R W $R / / L QRGI L F WD KW HH F H U W L I L
W K H J H Q H U D O S H U P L W

a) Certification of Understanding the Terms and Conditions of Construction General Permit (TXR150000)

3 U R Y L V L R Q D O F R3HY UH PU L DW J H 7X ; QG GD H\ EV H
W K H F 1R 2P , S O LHV W HS GR V SW DP SD HUCUNH HF GW U I RR QU L F
V X E P L W3H WU HP G W W K K R X H K< R HK P HP GX LV DW W HR
D Q G U H D G W K HV X &E RP QL W W W UL XQ FJ W L\ R Q U
D Q G S U L Q W W K H & R Q V W U X F W L R Q
V LZ WZ H W F H T W H [D V J R Y J R W R F

b) Certification of Legal Name

7 K H I X O O O H J D O Q D P H R I W K H
P X V W E H S U R Y L G H G H [D F W O \ D V
G R F X P H Q W V I R U P L Q J W K H H Q W L
W K H 6 2 6 D W I R U P R U H L Q I

c) Understanding of Notice of Termination

$ S H U P L W W H H V K D O O W H U W P K L H Q D W
V X E P L W W D O R I D 1 2 7 Z K H Q W K H
U H D F K H G W K H G L V F K D U J H E H F
D F W L Y L W \ Q H Y H U E H J D Q D W W K

d) Certification of Stormwater Pollution Prevention Plan

7 K H 6 : 3 L G H Q W L I L H V W K H D U H
D Q G W K H Q W H O O V K R Z \ R X Z L O
G H V F U L E L Q J \ R X U P O D Q W L J G D H W Y L H F Q V
I L O W H U V W R U P Z D W H U W H O O K R
P D L Q W H Q D Q F H L V W R E H F D U U L
J H Q H U D O S H U P G L H W Y H U O H R T S X H L G U H D P Q H G Q W L
F R P S O H W H W K L V 1 2 , 7 K H 6 : 3

Operator Certification:

7 K H F H U W L I L F D W L R Q P X V W E H D U
V V L J Q H G X Q G H U 7 H [D V $ G P L Q

IF YOU ARE A CORPORATION

7 K H U H J X O D W L R Q W K D W F R Q W U R
& R G H † D H V H H U H
P D \ V L J Q D Q 1 2 , R U V L P L O D U
G H O H J D W H G W R W K D W S H U V R Q L
I R U P \ R X D U H Q F G H H U O W H L J I D \ W L H Q G W R
G R F X P H Q W D W L R Q H Y L G H Q F L Q J V X

IF YOU ARE A MUNICIPALITY OR OTHER GOVERNMENT ENTITY:

7 K H U H J X O D W L R Q W K D W F R Q W U R
& R G H † D V H H E
R U S U L Q F L S D O H [H F X W L Y H R I I L
R U & R X Q W \ & R P P L V V L R Q H U I \ Z L W O O
S U L Q F L S D O H [H F X W L Y H R I I L F H U
F K D U W H U F R X Q W \ R U F L W \ R U
Z D V I R U P H G $ Q D 1 2 J , R Y R H U U Q V P L H P Q L W O
U D Q N L Q J H O H F W H G R I I L F L D O R U
V L J Q D W R U \ U H T X L U H P H Q W P D \ Q
L G H Q W L I L H J Q L Q J W K H U 1 2 J X R D W V
H L W K H U D U D Q N L Q J H O H F W H G R
F R G H ' R F X P H Q W D W L R Q G H P R Q V
H H F X W L Y H R I I L F H U P D \ E H U H T

30 Texas Administrative Code

§305.44. Signatories to Applications

D $ O O D S S O L F D W L R Q V V K D

) R U D F R U S R U D W L R Q

R I I L F H U S D U J D R U U D S K U S R D V H U V H V R S I R Q W V
V H F U H W D S U U \ H V L W G U H H Q D W V X R U I H U W K H R U F R Y U
I X Q F W L R Q R U D Q \ R D W N K L H Q U J S I H X U Q
F R D U W S R R U Q R U W K H P D Q D J H U R I
H P S O R \ L Q J P R U H W K D Q S H U
P L O O L R X Q D U W L H Q U V H F R Q G E H H Q D U W V
G H O H J D W H G W R W K H P D Q D J H U L
J R Y H U Q L Q J D F X O W R K V R X U L H W \R U W G H U V L D J S Q
D V V L J Q P H Q W R U G H W O H D Q W W R Q V W

) R U D S D U W Q H U V K L S

J H Q H U D O S D U W Q H U R U W K H S U R

) R U D P X Q L F L S D O L W \

E H V L J Q H G E \ H L W K H U D S U L Q H
S D U D J U D S K D S U L Q F L S D O H [H F
W K H D J H Q F \ R U D V H Q L R U H [
S U L Q F L S D O J H R J U D S K L F X Q L W R

Use this form to submit your Application Fee only if you are mailing your payment.

x & R P S O H W H L W H P V W K U R X J K E H O R Z
x 6 W D S O H \ R X U F K H F N L Q W K H V S D F H S U
x ' R Q R W U R U P D L O W K L V R X U 1 2 , I R U P
x ' R Q R W P D L O W K L V I R U P W R W K H V D P

Mail this form and your check to:

BY REGULAR U.S. MAIL

7 H [D V & R P P L V V L 7R HQ [D RV Q R &Q (RQ P(Y PQ L LU VL RV UQ IRP
*4 X D O L W *
) L Q D Q F L D O $ G P L) QL LQ VD WQ UF DL WD R Q$ G 'P LL Y
& D W K L2 H U L F H 0 && D W K L2 H U L F H 0 &
3 2 % R [3 D U N
$ X V W L Q 7 ; $ X V W L Q 7 ;

*) H H * 3& $R G H * H Q H U D 7O5 3 H U P L*

& K H F N
$ P R X Q W R I
' D W H R I \ & K
1 D P H R Q & K
1 2 , , 1) 2 5 0 $ 7 , 2 1

, I W K H F K H F N L V I R U P R U H W K D Q R Q H
$ G G U H V V H [D F W O \ D V S U R Y L G H G 7 +R Q W K
7 + , 6) 2 5 0 $ 6 , 7 & 2 8 / ' & $ 8 6 (' 8 3 / , & $ 7 (
6 H H $ W W D F K H G / L V W R I 6 L W H V , I P R
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6 W D K SH OF TN K L&V 6 S D F H

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

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

******* IMPORTANT *******

PLEASE READ THE FOLLOWING INFORMATION AND INSTRUCTIONS BEFORE FILLING OUT THIS FORM.

The form will be returned for one of the following reasons:

1) the permit number is not provided, invalid, or no longer active,
2) a wet ink signature of person meeting signatory requirements for permittee 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.

What is the **Permit Number** of the authorization to be changed?	**TXR15**

A. APPLICANT INFORMATION:

Search Central Registry at www12.tceq.texas.gov/crpub/

1. Operator (Permittee)

a. What is the full Legal Name of the current Operator as on the authorization?

b. What is the TCEQ Central Registry Customer Number assigned to this Operator?	**CN**

2. Permitted Site (required)

What is the TCEQ Central Registry Regulated Entity Number assigned for this permitted site?	**RN**

B. REQUESTED CHANGE TO PERMITTED INFORMATION

What information has changed or needs corrected?
(Check one or more of the sections being updated and enter the new information in the corresponding section of this form.)

☐	Operator Legal Name Change with Texas Secretary of State (TX SOS). Go to Section 1 &/or 2 as applicable. (Note: Permits are not transferable. If a change in entity has occurred, this NOC is not attainable.)
☐	Address and contact information for Operator, Billing for Annual Fee, or Discharge Monitoring Report forms.
☐	Site Information (Regulated Entity) (Note: Permits under a general permit are site specific. If a change in site location has occurred, this NOC is not attainable.)
☐	General Characteristics relating to the regulated activity.

1. OPERATOR LEGAL NAME CHANGE

a. What is the NEW active Legal Name with TX SOS or on other legal document?

New Legal Name:

b. What is the TX SOS Filing Number for us to confirm this official name change? (This is only applicable to Limited Partnership or Corporations.)	

2. ADDRESS & CONTACT INFORMATION CHANGE

a. What mailing address and/or contact information has changed? (check one or more as applicable)

☐	Operator for permit correspondence	☐	Site (RE) Mailing Address and contact information
☐	Billing address/contact for Receiving Annual Fee Statement	☐	Reporting address/contact for Receiving Discharge Monitoring Reports (DMRs)

b. If you selected more than one, is the information to be updated the same for each selection?
☐ Yes – Provide the updated information in the fields below.
☐ No – Attachment 1 of the NOC is attached to this form, to provide the different addresses.

ATTN or C/O:		
Address:		Suite No./Bldg. No./Mail Code:
City:	State:	ZIP Code:
Country Mailing Information (if outside USA).	Country Code:	Postal Code:
Phone No.: ( ) Ext:	Fax No.: ( )	E-Mail:

3. REGULATED ENTITY (RE) SITE INFORMATION CORRECTION		
a. Is this a change to the location of the permitted activity? ☐ Yes - this requested change will not be processed since the authorizations are site specific. ☐ No – go to next question.		
b. New or Corrected Name of Project or Site :		
c. Updated Physical Address (new 911 address):		
Street Number:	Street Name:	Bldg/Ste No.
City:	ZIP Code:	County (Counties if >1):
d. Update or Corrected location access description, if no physical address (Street Number & Street Name):		
e. Corrected Latitude: _____ N	Corrected Longitude: _____ W	

4. CHANGE IN CHARACTERISTICS PROVIDED ON ORIGINAL FORM
Identify the specific change and provide the updated information. If an attachment is need, please reference it below.

C. APPLICATION CONTACT

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

1. Name:	Title:	Company:
2. Phone No.: ( ) Ext:	Fax No.: ( )	E-Mail:

D. CERTIFICATION

Operator Certification:

I, _____ _____
Typed or printed name (REQUIRED) Title (REQUIRED)

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) (REQUIRED) (REQUIRED)

Attachment 1 to a NOC Form for Providing Different Address & Contact Information Related to a Specific Permit under General Permit TXR150000

What is the Permit No.? **TXR15** _____
(REQUIRED)

ADDITIONAL ADDRESS & CONTACT INFORMATION

Fill in the changes as applicable. Incomplete and invalid addresses will not be used. Verify mailing addresses at USPS.com.

Operator		
ATTN or C/O:		
Address:	Suite No./Bldg. No./Mail Code:	
City:	State:	ZIP Code:
Country Mailing Information (if outside USA).	Country Code:	Postal Code:
Phone No.: ( ) Ext:	Fax No.: ( )	E-Mail:

Billing Address for Receiving Annual Fee Statement		
ATTN or C/O:		
Address:	Suite No./Bldg. No./Mail Code:	
City:	State:	ZIP Code:
Country Mailing Information (if outside USA).	Country Code:	Postal Code:
Phone No.: ( ) Ext:	Fax No.: ( )	E-Mail:

Site (RE) Mailing Address		
ATTN or C/O:		
Address:	Suite No./Bldg. No./Mail Code:	
City:	State:	ZIP Code:
Country Mailing Information (if outside USA).	Country Code:	Postal Code:
Phone No.: ( ) Ext:	Fax No.: ( )	E-Mail:

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

General Information and Instructions

GENERAL INFORMATION

Where to Send the Notice of Change (NOC):

BY REGULAR U.S. MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC228)
P.O. Box 13087
Austin, TX 78711-3087

BY OVERNIGHT/EXPRESS MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact list:

Application Processing Questions relating to the status and form requirements: 512/239-3700 or email swpermit@tceq.texas.gov
Technical Questions relating to the general permit: 512/239-4671
Environmental Law Division: 512/239-0600
Records Management for obtaining copies of forms submitted to TCEQ: 512/239-0900
Information Services for obtaining reports from program data bases (as available): 512/239-DATA (3282)
Financial Administration's Cashier's office: 512/239-0357 or 512/239-0187

Notice of Change Process:

When your NOC is received by the program, the form will be processed as follows:

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 that qualifies for a NOC. 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 as an address receiving regular mail delivery. Never give an overnight/express mailing address.

If an item is incomplete or not verifiable as indicated above, 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)
You may view and print your general permit on the TCEQ web site www.tceq.texas.gov.
Enter the general permit number as the key word in the search box to locate the specific web page.

General Permit Forms
The Notice of Intent (NOI), Notice of Termination (NOT), and Notice of Change (NOC) with instructions are available in Adobe Acrobat PDF format on the TCEQ web site 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 Notice of Termination and the new operator must submit a Notice of Intent. 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.

TCEQ Central Registry Core Data Form
The Core Data Form has been incorporated into this form. **Do not send a core data form to TCEQ.**

You can find the information on the Central Registry web site at www12.tceq.texas.gov/crpub/. You can search by the Regulated Entity (RN), Customer Number (CN) or Name (Permittee), or by your permit number under the search field labeled "Additional ID".

The Customer (Permittee) is responsible for providing consistent information to the TCEQ, and for updating all CN and RN data for all associated authorizations as changes occur. For General Permits, a Notice of Change form must be submitted to the program area for approval to update the CN and RN data in central registry.

INSTRUCTIONS FOR FILLING OUT THE NOC FORM

A. Applicant Information (Operator)

1. Provide the current permittee(s) full legal name as on the permit.
b. Provide the TCEQ Issued Customer Number (CN) for the entity.
Go to http://www12.tceq.texas.gov/crpub/ to locate your CN.

If the name(s) provided do not match the current permittee name(s), this form will be returned. It is the responsibility of the permittee(s) to comply with the general permit.

Note: If a change is being made to the CN and the CN has other TCEQ authorization types, it is the entity's responsibility to update those authorizations at the same time. If an authorization has been cancelled or terminated, the name can not be changed on the permit. Because of this, a new CN may be issued for the new name.

2. Provide the TCEQ Issued Regulated Entity number assigned for this permitted activity.
Go to http://www12.tceq.texas.gov/crpub/ to locate your CN.

If the site has changed or the information provided indicates a new location, this form will be returned. It is the responsibility of the (permittees) to comply with the general permit.

B. REQUESTED CHANGE TO PERMITTED INFORMATION

Check one or more of the available options indicating the information in the form that is to be updated. Provide the updated information in Section 1 for Legal Name Change, Section 2 for Address & Contact Information Change, Section 3 for Regulated Entity Site Information Change, or Section 4 for General Characteristics Change, as applicable.

1. LEGAL NAME CHANGE

Provide the new legal name. If the entity is a Limited Partnership or Corporation, the name change must be verifiable with Texas Secretary of State. The TX SOS filing number must be provided to verify only a name change occurred. You may contact the SOS at 512/463-5555, for more information related to filing in Texas. If filed in the county where doing business, provide a copy of the legal documents showing the legal name change.

Legal name changes of a Corporation and Limited Partnership will be verified with Texas Secretary of State. If the entity is filed as a new entity with a new filing number, then the change cannot be made through a NOC. The permits are not transferable. If the operator changes, the old entity must terminate their permit and the new entity must submit a form for a new permit.

2. ADDRESS & CONTACT INFORMATION CHANGE

Indicate the type of address and contact information that has changed from the original NOI or last NOC submitted to TCEQ.
If the address and/or contact information is the same for all types, then check each type and enter the information in the fields on the form. If some types have different information, then use the NOC ATTACHMENT 1. The permit number MUST be written on ATTACHMENT 1 to indicate it is a part of the NOC form for the permit being updated. The updates cannot be made without reference to the submitted NOC form.

Mailing Address
The address **MUST BE** verifiable with the US Postal Service at www.usps.com., for regular mail delivery (not overnight express mail). If you find that the address is not verifiable using the USPS web search, please indicate the address is used by the USPS for regular mail delivery. Failure to provide a valid mailing address will delay or prohibit us from updating the permit.

Please note that address updates relating to a general permit authorization can ONLY be made through a Notice of Change. Address changes submitted through any other form can not be processed.

3. REGULATED ENTITY (RE) SITE INFORMATION CORRECTION

The NOC form is only for use to update or correct information submitted on the original application or last NOC for the authorization. The authorization under a general permit is site specific. If this change is related to a new location, a Notice of Change is not attainable.

Provide the updated site name , updated site addresses, and/or corrected latitude and longitude, as applicable to your NOC request.
A new physical address for an existing location is usually the result of a newly assigned 911 address for emergencies.

If providing a corrected latitude and longitude, enter the latitude and longitude of the site in either degrees, minutes, and seconds or decimal form. For help obtaining the latitude and longitude, go to: www.tceq.state.tx.us/gis/drgview.html or www.terraserver.microsoft.com/advfind.aspx.

4. GENERAL CHARACTERISTIC

Indicate the change to information originally supplied. For example if the number of acreas of area disturbed has changed, then state: "The number acres of area disturbed has increase to 40 acres."

C. Application Contact

Provide the name, title and communication information of the person that TCEQ can contact for additional information regarding this application.

D. CERTIFICATIONS

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code (TAC) §305.44.

IF YOU ARE A CORPORATION:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(1) (see below). According to this code provision, any corporate representative may sign an NOI or similar 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 NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

IF YOU ARE A MUNICIPALITY OR OTHER GOVERNMENT ENTITY:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(3) (see below). According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statute(s) under which your government entity was formed. An NOI or similar document that is signed by a government 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 NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the Texas Commission on Environmental Quality's Environmental Law Division at 512/239-0600.

30 Texas Administrative Code
§305.44. Signatories to Applications.

(a) 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).

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

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

Sign up now for on line NOT at https://www6.tceq.texas.gov/steers/
Get your NOT Confirmation letter immediately after submitting the on line NOT form.

What is the permit number to be terminated?
Processing will be delayed without the permit number. TXR15_____

A. OPERATOR (applicant)

1. What is the Customer Number (CN) issued to this entity? **CN**
2. What is the full Legal Name of the current permittee?

This must be the current permittee of the permit to be terminated.

3. What is the applicant's mailing address as recognized by the **US Postal Service**?

Address:	Suite No./Bldg. No./Mail Code:	
City:	State:	ZIP Code:
Country Mailing Information (if outside USA).	Country Code:	Postal Code:

4. Phone No.: ( )	Extension:
5. Fax No.: ( )	E-mail Address:

B. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

1. What is the TCEQ Issued RE Reference Number (RN)? **RN**
2. Name of Project or Site as currently permitted):

(example: phase and name of subdivision or name of project that's unique to the site)

3. Physical Address of Project or Site as currently permitted: (enter in spaces below)

Street Number:	Street Name:	
City:	ZIP Code:	County (Counties if >1):

4. If no physical address (Street Number & Street Name), provide the written location access description to the site:

C. 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 either 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 defined in the SWP3 have been transferred to the new Operator.
- ☐ The activity is now authorized under an alternate TPDES permit.
- ☐ The activity never began at this site that is regulated under the general permit.

D. CERTIFIC ATION

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 Termination (NOT) for Authorizations under TPDES General Permit TXR150000 General Information and Instructions

GENERAL INFORMATION

Where to Send the Notice of Intent (NOI):

BY REGULAR U.S. MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC228)
P.O. Box 13087
Austin, TX 78711-3087

BY OVERNIGHT/EXPRESS MAIL
Texas Commission on Environmental Quality
Stormwater Processing Center (MC228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact list:

Application Processing Questions relating to the status and form requirements:	512/239-3700 or swpermit@tceq.texas.gov
Technical Questions relating to the general permit:	512/239-4671
Environmental Law Division:	512/239-0600
Records Management for obtaining copies of forms submitted to TCEQ:	512/239-0900
Information Services for obtaining reports from program data bases (as available):	512/239-DATA (3282)
Financial Administration's 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
   - 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.

General Permit (Your Permit)
Coverage under the general permit begins **48 hours after a completed NOI is postmarked for delivery to** the TCEQ. You should have a copy of your general permit when submitting your application. You may view and print your permit for which you are seeking coverage, on the TCEQ web site www.tceq.texas.gov

General Permit Forms
The Notice of Intent (NOI), Notice of Termination (NOT), and Notice of Change (NOC) with instructions are available in Adobe Acrobat PDF format on the TCEQ web site www.tceq.texas.gov.

Change in Operator
An authorization under the general permit is not transferable. If the operator or owner 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.

TCEQ Central Registry Core Data Form
The Core Data Form has been incorporated into this form. **Do not send a core data form to TCEQ.**

After final acknowledgment of coverage under the general permit, the program will assign a Customer Number (CN) and Regulated Entity Number (RN). For Construction Permits, a new RN will be assigned for each Notice of Intent filed with TCEQ, since construction project sites can overlap with other Customers. The RN assigned to your construction project will not be assigned to any other TCEQ authorization.

You can find the information on the Central Registry web site at www12.tceq.texas.gov/crpub/. You can search by the Regulated Entity (RN), Customer Number (CN) or Name (Permittee), or by your permit number under the search field labeled "Additional ID". Capitalize all letters in the permit number.

The Customer (Permittee) is responsible for providing consistent information to the TCEQ, and for updating all CN and RN data for all authorzations as changes occur. For General Permits, a Notice of Change form must be submitted to the program area.

Annual Water Quality Fee: This fee is assessed to operators with an active authorization under the general permit on September 1 of each year. The operator will receive an invoice for payment of the annual fee in November of each year. The payment will be due 30 days from the invoice date. A 5% penalty will be assessed if the payment is received by TCEQ after the due date. Annual fee assessments cannot be waived as long as the authorization under the general permit is active on September 1.

It's important for the operator to submit a **Notice of Termination** (NOT) when coverage under the general permit is no longer required. A NOT is effective on the postmarked date of mailing the form to TCEQ. It is recommended that the NOT be mailed using a method that documents the date mailed and received by TCEQ.

- Mailed Payments:

You must return your payment with the billing coupon provided with the billing statement.

- ePAY Electronic Payment:

Go to www6.tceq.texas.gov/epay/
You must enter your account number provided at the top portion of your billing statement. Payment methods include Mastercard, Visa, and electronic check payment (ACH). A transaction over $500 can only be made by ACH.

INSTRUCTIONS FOR FILLING OUT THE NOT FORM

A. OPERATOR (current permittee.)

1. TCEQ Issued Customer Number (CN)

2. Legal Name of Operator
The operator must be the same entity as previously submitted on the original Notice of Intent for the permit number provided.

3. Operator Mailing Address
Provide a complete mailing address for receiving mail from the TCEQ. Update the address if different than previously submitted in the Notice of Intent or Notice of Change.

4. Phone Number, Fax Number, and E-mail Address
Provide updated contact information.

B. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

1. Regulated Entity Reference Number (RN)

2. Site/Project Name/Regulated Entity
Provide the name of the site as previously submitted in the Notice of Intent for the permit number provided.

3. Site/Project (RE) Physical Address
Provide the physical address or location access description as previously submitted for the permit number provided.

C. REASON FOR TERMINATION

Indicate the reason for terminating the permit by checking one of the options. If the reason is not listed then provide an attachment that explains the reason for termination.

Please read your general permit carefully to determine when to terminate your permit. Permits will not be reactivated after submitting a termination form. The termination is effective on the date postmarked for delivery to TCEQ.

D. CERTIFICATIONS

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code (TAC) §305.44.

IF YOU ARE A CORPORATION:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(1) (see below). According to this code provision, any corporate representative may sign an NOI or similar 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 NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

IF YOU ARE A MUNICIPALITY OR OTHER GOVERNMENT ENTITY:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(3) (see below). According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statute(s) under which your government entity was formed. An NOI or similar document that is signed by a government 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 NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the Texas Commission on Environmental Quality's Environmental Law Division at 512/239-0600.

30 Texas Administrative Code
§305.44. Signatories to Applications.

(a) 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).

APPENDIX I

RECORD OF TEMPORARY/PERMANENT CEASING OF CONSTRUCTION ACTIVITIES

Record of Temporary/Permanent Ceasing of Construction Activities

Project Activity Area	Date Activities Ceased	Temporary* or Permanent	Date Soil Stabilization Implemented	Date Activities Resumed	Initials

*** "Temporarily Ceased" means inactive for less than 21 consecutive days.**

APPENDIX J

DELEGATION OF SIGNATORIES

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

Subject: Delegation of Signatories to Reports

Facility/Company/Site Name: _____
TPDES Permit Number: _____

Dear Executive Director:

This letter serves to designate the following people or positions as authorized personnel for signing reports, storm water pollution prevention plans, certifications or other information requested by the Executive Director or required by the general permit, as set forth by 30 TAC §305.128 (see page 2).

Name or Position	
Name or Position	
Name or Position	
Name or Position	

I understand that this authorization does not extend to the signing of a Notice of Intent for obtaining coverage under a storm water general permit.

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in 30 TAC §305.44 (see page 2).

Sincerely,

_____ _____ _____
Name Title Date

RELEVANT PROVISIONS

305.128(a) All reports requested by permits and other information requested by the executive director shall be signed by a person described in §305.44(a) of this title (relating to Signatories to Applications) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) the authorization is made in writing by a person described in §305.44(a) of this title (relating to Signatories to Applications);

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity or for environmental matters for the applicant, such as the position of plant manager, operator of a well or well field, environmental manager, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(3) the written authorization is submitted to the executive director.

(b) If an authorization under this section is no longer accurate because of a change in individuals or position, a new authorization satisfying the requirements of this section must be submitted to the executive director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(c) Any person signing a report required by a permit shall make the certification set forth in §305.44(b) of this title (relating to Signatories to Applications).

305.44(a) 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).

(b) A person signing an application shall make the following certification: "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."

APPENDIX K

MATERIAL MANAGEMENT PRACTICES

MATERIAL MANAGEMENT PRACTICES

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

1. Good Housekeeping: The following good housekeeping practices will be followed onsite during the construction project:
   - An effort will be made to store only enough product required to do the job.
   - All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
   - Products will be kept in their original containers with the original manufacturer's label.
   - Substances will not be mixed with one another unless recommended by the manufacturer.
   - Whenever possible, all of a product will be used up before disposing of the container.
   - Manufacturers' recommendations for proper use and disposal will be followed.
   - Designated areas for equipment maintenance and repair (control of oil, grease and fuel spills).
   - Waste receptacles with regular collection for litter and construction debris.
   - Equipment washdown area on-site with appropriate control of wash waters (including concrete truck wash down).
   - Protected storage areas for chemicals, paints, solvents, fertilizers and other potentially toxic materials.
   - Adequately maintained sanitary facilities.
   - Proper control of raw materials stored on-site (for example, sand, aggregate and cement used in the manufacture of concrete or stockpiles of topsoil).
   - Street sweeping or cleaning.
   - Removal of inlet protection barriers during major rainfall events if flooding occurs and verification that reinforced filter fabric fences are in proper condition prior to all rainfall events.
   - The site superintendent will ensure proper use and disposal of materials onsite.
2. Hazardous Products: The following practices are used to reduce the risks associated with hazardous materials.
   - Products will be kept in original containers unless they are not re-sealable.
   - Paints, solvents, fertilizer, fuel (small containers), and other stored chemical substances will be kept within an enclosure to protect the containers and the floor of the enclosure, from wind, precipitation, and storm water runoff.
   - Fuel storage and filling areas will be bermed off to provide collection of any spills and prevent exposure to storm water runoff.
   - Original labels and Material Safety Data Sheets (MSDS) will be retained on-site and available for review by workers.
   - If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

PRODUCT SPECIFIC PRACTICES

The following product specific practices will be followed onsite:

1. Petroleum Products: All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
2. Fertilizers: Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Storage will be in a covered shed.
3. Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions or State and local regulations.
4. Concrete Trucks: Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part V of the general permit.

SPILL CONTROL PRACTICES

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be maintained on-site in the material data sheets (MSDS) and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Contact the MS4 Operator, TCEQ (800-832-8224), and the National Response Center (800-424-8802) to inform of any spill of toxic or hazardous material regardless of the size.

The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

APPENDIX L

NON-STORM WATER DISCHARGE INVENTORY

NON-STORM WATER DISCHARGE INVENTORY

Mark the materials or substances listed below expected to be present onsite during construction:

☐ Concrete	☐ Detergents	☐ Paints (enamel/latex)
☐ Metal Studs	☐ Fuels	☐ Lubricants
☐ Fertilizers	☐ Petroleum Based Products	☐ Cleaning Solvents
☐ Masonry Block	☐ Electrical Equipment and Materials	☐ Asphalt and Asphalt Related Products
☐ Tar	☐ Roof Shingles	☐ Wood
☐ Steel Products	☐ _____	☐ _____
☐ _____	☐ _____	☐ _____

AUTHORIZED NON STORMWATER DISCHARGES ANTICIPATED DURING THE PROJECT

Mark the following non-storm water discharges expected to occur from the site during the construction period (refer to general permit in Appendix G for additional information):

- ☐ discharges from firefighting activities,
- ☐ uncontaminated fire hydrant flushings, which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants,
- ☐ 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 and where the purpose is to remove mud, dirt, or dust,
- ☐ uncontaminated water used to control dust,
- ☐ potable water sources including waterline flushings,
- ☐ uncontaminated air conditioning condensate,
- ☐ uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents,
- ☐ lawn watering and similar irrigation drainage,
- ☐ runoff from concrete batch plants (refer to Part IV of general permit),
- ☐ concrete truck wash out (refer to Part V of general permit).

APPENDIX M

REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES

Each substance in Table 117.3 that is listed in Table 302.4, 40 CFR part 302, is assigned the reportable quantity listed in Table 302.4 for that substance.

TABLE 117.3 -- REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES DESIGNATED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT

Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X", "A", "B", "C", and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively.

Table 117.3_Reportable Quantities of Hazardous Substances Designated Pursuant to Section 311 of the Clean Water Act

Material	Category	RQ in pounds (kilograms)
Acetaldehyde	C	1,000 (454)
Acetic acid	D	5,000 (2,270)
Acetic anhydride	D	5,000 (2,270)
Acetone cyanohydrin	A	10 (4.54)
Acetyl bromide	D	5,000 (2,270)
Acetyl chloride	D	5,000 (2,270)
Acrolein	X	1 (0.454)
Acrylonitrile	B	100 (45.4)
Adipic acid	D	5,000 (2,270)
Aldrin	X	1 (0.454)
Allyl alcohol	B	100 (45.4)
Allyl chloride	C	1,000 (454)
Aluminum sulfate	D	5,000 (2,270)
Ammonia	B	100 (45.4)
Ammonium acetate	D	5,000 (2,270)
Ammonium benzoate	D	5,000 (2,270)
Ammonium bicarbonate	D	5,000 (2,270)
Ammonium bichromate	A	10 (4.54)
Ammonium bifluoride	B	100 (45.4)
Ammonium bisulfite	D	5,000 (2,270)
Ammonium carbamate	D	5,000 (2,270)
Ammonium carbonate	D	5,000 (2,270)
Ammonium chloride	D	5,000 (2,270)
Ammonium chromate	A	10 (4.54)
Ammonium citrate dibasic	D	5,000 (2,270)
Ammonium fluoborate	D	5,000 (2,270)
Ammonium fluoride	B	100 (45.4)
Ammonium hydroxide	C	1,000 (454)
Ammonium oxalate	D	5,000 (2,270)
Ammonium silicofluoride	C	1,000 (454)
Ammonium sulfamate	D	5,000 (2,270)
Ammonium sulfide	B	100 (45.4)
Ammonium sulfite	D	5,000 (2,270)
Ammonium tartrate	D	5,000 (2,270)
Ammonium thiocyanate	D	5,000 (2,270)
Amyl acetate	D	5,000 (2,270)
Aniline	D	5,000 (2,270)

Antimony pentachloride	C	1,000 (454)
Antimony potassium tartrate	B	100 (45.4)
Antimony tribromide	C	1,000 (454)
Antimony trichloride	C	1,000 (454)
Antimony trifluoride	C	1,000 (454)
Antimony trioxide	C	1,000 (454)
Arsenic disulfide	X	1 (0.454)
Arsenic pentoxide	X	1 (0.454)
Arsenic trichloride	X	1 (0.454)
Arsenic trioxide	X	1 (0.454)
Arsenic trisulfide	X	1 (0.454)
Barium cyanide	A	10 (4.54)
Benzene	A	10 (4.54)
Benzoic acid	D	5,000 (2,270)
Benzonitrile	D	5,000 (2,270)
Benzoyl chloride	C	1,000 (454)
Benzyl chloride	B	100 (45.4)
Beryllium chloride	X	1 (0.454)
Beryllium fluoride	X	1 (0.454)
Beryllium nitrate	X	1 (0.454)
Butyl acetate	D	5,000 (2,270)
Butylamine	C	1,000 (454)
n-Butyl phthalate	A	10 (4.54)
Butyric acid	D	5,000 (2,270)
Cadmium acetate	A	10 (4.54)
Cadmium bromide	A	10 (4.54)
Cadmium chloride	A	10 (4.54)
Calcium arsenate	X	1 (0.454)
Calcium arsenite	X	1 (0.454)
Calcium carbide	A	10 (4.54)
Calcium chromate	A	10 (4.54)
Calcium cyanide	A	10 (4.54)
Calcium dodecylbenzenesulfonate	C	1,000 (454)
Calcium hypochlorite	A	10 (4.54)
Captan	A	10 (4.54)
Carbaryl	B	100 (45.4)
Carbofuran	A	10 (4.54)
Carbon disulfide	B	100 (45.4)
Carbon tetrachloride	A	10 (4.54)
Chlordane	X	1 (0.454)
Chlorine	A	10 (4.54)
Chlorobenzene	B	100 (45.4)
Chloroform	A	10 (4.54)
Chlorosulfonic acid	C	1,000 (454)
Chlorpyrifos	X	1 (0.454)
Chromic acetate	C	1,000 (454)
Chromic acid	A	10 (4.54)
Chromic sulfate	C	1,000 (454)
Chromous chloride	C	1,000 (454)
Cobaltous bromide	C	1,000 (454)
Cobaltous formate	C	1,000 (454)
Cobaltous sulfamate	C	1,000 (454)
Coumaphos	A	10 (4.54)
Cresol	B	100 (45.4)
Crotonaldehyde	B	100 (45.4)

Cupric acetate	B	100 (45.4)
Cupric acetoarsenite	X	1 (0.454)
Cupric chloride	A	10 (4.54)
Cupric nitrate	B	100 (45.4)
Cupric oxalate	B	100 (45.4)
Cupric sulfate	A	10 (4.54)
Cupric sulfate, ammoniated	B	100 (45.4)
Cupric tartrate	B	100 (45.4)
Cyanogen chloride	A	10 (4.54)
Cyclohexane	C	1,000 (454)
2,4-D Acid	B	100 (45.4)
2,4-D Esters	B	100 (45.4)
DDT	X	1 (0.454)
Diazinon	X	1 (0.454)
Dicamba	C	1,000 (454)
Dichlobenil	B	100 (45.4)
Dichlone	X	1 (0.454)
Dichlorobenzene	B	100 (45.4)
Dichloropropane	C	1,000 (454)
Dichloropropene	B	100 (45.4)
Dichloropropene-Dichloropropane (mixture).	B	100 (45.4)
2,2-Dichloropropionic acid	D	5,000 (2,270)
Dichlorvos	A	10 (4.54)
Dicofol	A	10 (4.54)
Dieldrin	X	1 (0.454)
Diethylamine	B	100 (45.4)
Dimethylamine	C	1,000 (454)
Dinitrobenzene (mixed)	B	100 (45.4)
Dinitrophenol	A	10 (45.4)
Dinitrotoluene	A	10 (4.54)
Diquat	C	1,000 (454)
Disulfoton	X	1 (0.454)
Diuron	B	100 (45.4)
Dodecylbenzenesulfonic acid	C	1,000 (454)
Endosulfan	X	1 (0.454)
Endrin	X	1 (0.454)
Epichlorohydrin	B	100 (45.4)
Ethion	A	10 (4.54)
Ethylbenzene	C	1,000 (454)
Ethylenediamine	D	5,000 (2,270)
Ethylenediamine-tetraacetic acid (EDTA).	D	5,000 (2,270)
Ethylene dibromide	X	1 (0.454)
Ethylene dichloride	B	100 (45.4)
Ferric ammonium citrate	C	1,000 (454)
Ferric ammonium oxalate	C	1,000 (454)
Ferric chloride	C	1,000 (454)
Ferric fluoride	B	100 (45.4)
Ferric nitrate	C	1,000 (454)
Ferric sulfate	C	1,000 (454)
Ferrous ammonium sulfate	C	1,000 (454)
Ferrous chloride	B	100 (45.4)
Ferrous sulfate	C	1,000 (454)
Formaldehyde	B	100 (45.4)
Formic acid	D	5,000 (2,270)

Fumaric acid	D	5,000 (2,270)
Furfural	D	5,000 (2,270)
Guthion	X	1 (0.454)
Heptachlor	X	1 (0.454)
Hexachlorocyclopentadiene	A	10 (4.54)
Hydrochloric acid	D	5,000 (2,270)
Hydrofluoric acid	B	100 (45.4)
Hydrogen cyanide	A	10 (4.54)
Hydrogen sulfide	B	100 (45.4)
Isoprene	B	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate.	C	1,000 (454)
Kepone	X	1 (0.454)
Lead acetate	A	10 (4.54)
Lead arsenate	X	1 (0.454)
Lead chloride	A	10 (4.54)
Lead fluoborate	A	10 (4.54)
Lead fluoride	A	10 (4.54)
Lead iodide	A	10 (4.54)
Lead nitrate	A	10 (4.54)
Lead stearate	A	10 (4.54)
Lead sulfate	A	10 (4.54)
Lead sulfide	A	10 (4.54)
Lead thiocyanate	A	10 (4.54)
Lindane	X	1 (0.454)
Lithium chromate	A	10 (4.54)
Malathion	B	100 (45.4)
Maleic acid	D	5,000 (2,270)
Maleic anhydride	D	5,000 (2,270)
Mercaptodimethur	A	10 (4.54)
Mercuric cyanide	X	1 (0.454)
Mercuric nitrate	A	10 (4.54)
Mercuric sulfate	A	10 (4.54)
Mercuric thiocyanate	A	10 (4.54)
Mercurous nitrate	A	10 (4.54)
Methoxychlor	X	1 (0.454)
Methyl mercaptan	B	100 (45.4)
Methyl methacrylate	C	1,000 (454)
Methyl parathion	B	100 (45.4)
Mevinphos	A	10 (4.54)
Mexacarbate	C	1,000 (454)
Monoethylamine	B	100 (45.4)
Monomethylamine	B	100 (45.4)
Naled	A	10 (4.54)
Naphthalene	B	100 (45.4)
Naphthenic acid	B	100 (45.4)
Nickel ammonium sulfate	B	100 (45.4)
Nickel chloride	B	100 (45.4)
Nickel hydroxide	A	10 (4.54)
Nickel nitrate	B	100 (45.4)
Nickel sulfate	B	100 (45.4)
Nitric acid	C	1,000 (454)
Nitrobenzene	C	1,000 (454)
Nitrogen dioxide	A	10 (4.54)
Nitrophenol (mixed)	B	100 (45.4)

Nitrotoluene	C	1,000 (454)
Paraformaldehyde	C	1,000 (454)
Parathion	A	10 (4.54)
Pentachlorophenol	A	10 (4.54)
Phenol	C	1,000 (454)
Phosgene	A	10 (4.54)
Phosphoric acid	D	5,000 (2,270)
Phosphorus	X	1 (0.454)
Phosphorus oxychloride	C	1,000 (454)
Phosphorus pentasulfide	B	100 (45.4)
Phosphorus trichloride	C	1,000 (454)
Polychlorinated biphenyls	X	1 (0.454)
Potassium arsenate	X	1 (0.454)
Potassium arsenite	X	1 (0.454)
Potassium bichromate	A	10 (4.54)
Potassium chromate	A	10 (4.54)
Potassium cyanide	A	10 (4.54)
Potassium hydroxide	C	1,000 (454)
Potassium permanganate	B	100 (45.4)
Propargite	A	10 (4.54)
Propionic acid	D	5,000 (2,270)
Propionic anhydride	D	5,000 (2,270)
Propylene oxide	B	100 (45.4)
Pyrethrins	X	1 (0.454)
Quinoline	D	5,000 (2,270)
Resorcinol	D	5,000 (2,270)
Selenium oxide	A	10 (4.54)
Silver nitrate	X	1 (0.454)
Sodium	A	10 (4.54)
Sodium arsenate	X	1 (0.454)
Sodium arsenite	X	1 (0.454)
Sodium bichromate	A	10 (4.54)
Sodium bifluoride	B	100 (45.4)
Sodium bisulfite	D	5,000 (2,270)
Sodium chromate	A	10 (4.54)
Sodium cyanide	A	10 (4.54)
Sodium dodecylbenzenesulfonate	C	1,000 (454)
Sodium fluoride	C	1,000 (454)
Sodium hydrosulfide	D	5,000 (2,270)
Sodium hydroxide	C	1,000 (454)
Sodium hypochlorite	B	100 (45.4)
Sodium methylate	C	1,000 (454)
Sodium nitrite	B	100 (45.4)
Sodium phosphate, dibasic	D	5,000 (2,270)
Sodium phosphate, tribasic	D	5,000 (2,270)
Sodium selenite	B	100 (45.4)
Strontium chromate	A	10 (4.54)
Strychnine	A	10 (4.54)
Styrene	C	1,000 (454)
Sulfuric acid	C	1,000 (454)
Sulfur monochloride	C	1,000 (454)
2,4,5-T acid	C	1,000 (454)
2,4,5-T amines	D	5,000 (2,270)
2,4,5-T esters	C	1,000 (454)
2,4,5-T salts	C	1,000 (454)
TDE	X	1 (0.454)

2,4,5-TP acid	B	100 (45.4)
2,4,5-TP acid esters	B	100 (45.4)
Tetraethyl lead	A	10 (4.54)
Tetraethyl pyrophosphate	A	10 (4.54)
Thallium sulfate	B	100 (45.4)
Toluene	C	1,000 (454)
Toxaphene	X	1 (0.454)
Trichlorfon	B	100 (45.4)
Trichloroethylene	B	100 (45.4)
Trichlorophenol	A	10 (4.54)
Triethanolamine dodecylbenzenesulfonate.	C	1,000 (454)
Triethylamine	D	5,000 (2,270)
Trimethylamine	B	100 (45.4)
Uranyl acetate	B	100 (45.4)
Uranyl nitrate	B	100 (45.4)
Vanadium pentoxide	C	1,000 (454)
Vanadyl sulfate	C	1,000 (454)
Vinyl acetate	D	5,000 (2,270)
Vinylidene chloride	B	100 (45.4)
Xylene (mixed)	B	100 (45.4)
Xylenol	C	1,000 (454)
Zinc acetate	C	1,000 (454)
Zinc ammonium chloride	C	1,000 (454)
Zinc borate	C	1,000 (454)
Zinc bromide	C	1,000 (454)
Zinc carbonate	C	1,000 (454)
Zinc chloride	C	1,000 (454)
Zinc cyanide	A	10 (4.54)
Zinc fluoride	C	1,000 (454)
Zinc formate	C	1,000 (454)
Zinc hydrosulfite	C	1,000 (454)
Zinc nitrate	C	1,000 (454)
Zinc phenolsulfonate	D	5,000 (2,270)
Zinc phosphide	B	100 (45.4)
Zinc silicofluoride	D	5,000 (2,270)
Zinc sulfate	C	1,000 (454)
Zirconium nitrate	D	5,000 (2,270)
Zirconium potassium fluoride	C	1,000 (454)
Zirconium sulfate	D	5,000 (2,270)
Zirconium tetrachloride	D	5,000 (2,270)

– [50 FR 13513, Apr. 4, 1985, as amended at 51 FR 34547, Sept. 29, 1986; 54 FR 33482, Aug. 14, 1989; 58 FR 35327, June 30, 1993; 60 FR 30937, June 12, 1995]

APPENDIX N

SEDIMENTATION BASIN INFORMATION AND CALCULATIONS

Sites With Drainage Areas of Ten or More Acres

A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time.

A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Capacity calculations shall be included in Appendix N of this SWP3.

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.

If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

Sites With Drainage Areas Less than Ten Acres

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

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 Appendix N of this SWP3.

APPENDIX O

LOCAL REQUIREMENTS

CHAPTER 12

SUBDIVISION REGULATION

ARTICLE 12.01 GENERAL PROVISIONS*

Sec. 12.01.001 Title and enacting clause

This chapter is known as the subdivision ordinance of the City of Cedar Park, Texas (city). References in this chapter shall be cited as "the chapter", "this chapter", or "subdivision regulations" and shall be interpreted as references to the subdivision ordinance. This subdivision ordinance as amended is passed, approved, and effective under Ordinance CO42-07-07-12-3I on July 7, 2007 [July 12, 2007].

Sec. 12.01.002 Authority

(a) This chapter is adopted under the authority of the Constitution and laws of the State of Texas, including particularly chapters 212 and 43 of Texas Local Government Code.

(b) In accordance with the city's police powers and authority, and as specifically authorized by chapter 212, Texas Local Government Code, and other applicable laws, the planning and zoning commission, as a condition of subdivision plat or replat approval, shall require the owners and developers of land who desire to subdivide, plat or replat land within the city or its extraterritorial jurisdiction, for urban development, to provide for building setback lines, to dedicate streets, alleys, parks, easements or other public places or facilities of adequate width and size and to coordinate street layouts and street planning with the city's transportation master plan, transportation criteria manual, with other municipalities, and with county, state and federally designated highways, as they may deem best in the interest of the general public, in order to provide for the orderly development of the areas and to secure adequate provision for traffic, light, air, recreation, transportation, water, drainage, sewage and other facilities.

Sec. 12.01.003 Purpose

The city council of the city does hereby adopt the following regulations to hereafter control the subdivision of land within the corporate limits of the city and within the extraterritorial jurisdiction thereof, in order to provide for the safe, orderly and healthful development of the community and to secure adequate provisions for traffic, light, air, recreation, transportation, water, drainage, sewage, and other public facilities.

Sec. 12.01.004 Jurisdiction

(a) The owner of a tract of land located within the city limits or in the extraterritorial jurisdiction (ETJ) of the city who divides the tract in two or more parts to lay out a subdivision of the tract, including an addition to the city, to lay out suburban, building, or other lots, or to lay out streets, alleys, squares, parks, or other parts of the tract intended to be dedicated to public use or for the use of the purchasers or owners of lots fronting on or adjacent to the streets, alleys, squares, parks, or other parts must have a plat of the subdivision prepared and submitted to the city for review for conformance with the rules and regulations set forth in this chapter and other chapters of the city code of ordinances with applicable regulations and obtain approval from the city of such plat.

(b) A division of a tract under this subsection includes a division regardless of whether it is made by using a metes and bounds description in a deed of conveyance or in a contract for a deed, by using a contract of sale or other executory contract to convey, or by using any other method.

(c) A division of land under this subsection does not include a division of land into parts greater than five (5) acres within the city limits, or ten (10) areas in the ETJ, where each part has a minimum width of fifty (50) feet frontage onto a public roadway and no public improvement is being dedicated.

Sec. 12.01.005 Consistency with the comprehensive plan and comprehensive zoning ordinance

It is the intent that this chapter shall provide for the implementation of the comprehensive plan, including the future land use plan, transportation master plan and other applicable elements; and any supplemental land use and community development policies that may be hereafter adopted by the city council, and shall be consistent with the comprehensive zoning ordinance. No plat or subdivision of land within the city or its ETJ shall be approved unless it conforms to such plans and ordinances.

Sec. 12.01.006 Repeal

Ordinances and parts of ordinances in effect prior to the effective date of this chapter as amended and/or are in conflict are repealed.

ARTICLE 12.02 ADMINISTRATION

Sec. 12.02.001 Subdivision plat required

Every owner of any tract of land who may, subsequent to December 9, 1974, divide said tract into two (2) or more lots or tracts, or create from said tract one (1) or more lots of record, for the purpose of transfer of ownership, dedication of streets, alleys, easements, parks or other areas dedicated to public use, or for use for building development, shall cause a plat to be made in accordance with this chapter.

Sec. 12.02.002 Exemptions

(a) The provisions of this chapter shall not apply to:

(1) Sales of land by metes and bounds into tracts of five (5) acres or more in area, except as otherwise specifically provided in this chapter;

(2) Cemeteries complying with all state and local laws and regulations;

(3) Divisions of land created by order of a court of competent jurisdiction;

(4) Acquisition of public right-of-way or public land by the state, county, or city.[;]

(5) Any subdivision of land for which a concept plan, preliminary plan or final plat has been filed with the city on or before the effective date of this chapter, excluding any such plan or plat for which approval has expired or hereafter expires; or

(6) The division of an existing legal lot, said division being caused by the city's acquisition of a part of said legal lot, when the council finds that the acquisition by the city is in the best interest of the public health, safety and welfare of the citizens of Cedar Park and/or its extraterritorial jurisdiction. Upon the council so finding, the resulting parcels shall be deemed to constitute legal lots for the purposes of developing under the requirements of this chapter and other applicable city regulations. In creating said division, the council is empowered to attach to the resulting parcels acquired by the city, and the remainder parcels not acquired by the city upon agreement with the owner, such conditions as it finds reasonable and necessary to offset any adverse effects resulting from the city's acquisition as a part of the original legal lot, insofar as any such condition is not contrary to the spirit and intent of this chapter.

(b) The provisions of this chapter shall not be construed, interpreted or applied to land located within the extraterritorial jurisdiction of the city in a manner to regulate:

(1) The use of any building or property for any lawful purpose;

(2) The bulk, density or number of buildings on a tract or parcel of land;

(3) The floor to area ratio of any building to be constructed on any lot; or

(4) The number of residential units that can be built on an acre of land.

Sec. 12.02.003 Discrepancies

Where a discrepancy exists between the prescriptions established in this chapter and the requirements of the building codes, fire codes, zoning ordinance or any other applicable code or ordinance of the City of Cedar Park, or any applicable county or state law, then the more restrictive requirements shall apply.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

ARTICLE 12.03 PROCEDURES

Sec. 12.03.001 Procedures for plat approval

(a) An application for a subdivision plat, including without limitation an application for approval or amendment of a concept plan, preliminary plan, final plat, replat, amending plat, plat vacation or other approval authorized by these subdivision regulations, shall expire on or after the 45th day after the date the application is filed, pursuant to section 245.002(e) of the Texas Local Government Code, as amended, if:

(1) The applicant fails to provide documents of other information necessary to comply with the city's technical requirements relating to the form and content of the permit application;

(2) The city provides to the applicant not later than the 10th business day after the date the application is filed written notice of the failure that specifies the necessary documents or other information and the date the application will expire if the documents or other information is not provided; and

(3) The applicant fails to provide the specified documents or other information within the time provided in the notice.

(b) The planning and zoning commission shall act on a plat within thirty (30) days after the plat is formally filed with the city, unless otherwise agreed to in writing by the applicant.

(c) The planning department shall review all plat applications in conjunction with other city departments and utility companies for compliance with this chapter and other applicable city codes and regulations.

(Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.03.002 Rules and regulations of planning and zoning commission

The planning and zoning commission may adopt rules and regulations governing plats and subdivisions. Such rules shall be consistent with the provisions of this chapter and shall become effective upon being filed with the city secretary. (Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.03.003 Project expiration

Any project, as defined under chapter 245 of the Texas Local Government Code, as amended, shall expire on the fifth anniversary of the date the first permit application was filed for the project, pursuant to section 245.005 of the Texas Local Government Code, as amended.

Sec. 12.03.004 Variances

(a) When an applicant can show that a provision of these regulations would cause unnecessary hardship if strictly adhered to and where, because of some condition peculiar to the site in the opinion of the planning and zoning commission, a departure may be made without destroying the intent of such provisions, the planning and zoning commission may authorize a variance.

(b) Variances from the terms of this chapter shall be granted by the planning and zoning commission under the conditions stated in the Texas Local Government Code, and provided further that the planning and zoning commission shall have no authority to grant a variance based on a special or unique condition which was created as a result of the method by which a person voluntarily subdivides that land, and provided that pecuniary hardship to the applicant, standing alone, shall not be deemed to constitute grounds for a variance.

(c) A variance may be applied for as part of a plat or replat request or as a separate request if the property is already platted. The applicant shall be responsible for providing all necessary information pertinent to the request, including the justification for such variance.

(d) Any applicant aggrieved by action on a variance by the planning and zoning commission may appeal to the city council within thirty (30) days from the day of such action and not thereafter. The city council may affirm, modify, or reverse the decision of the planning and zoning commission.

(Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.03.005 Enforcement of chapter

In addition to any other remedy provided by law, the city council shall have the right to seek injunctive relief for a violation of this chapter. This chapter may be further enforced by injunction and other judicial proceedings, either at law or in equity; and, in lieu of or in addition to any other authorized enforcement or action taken, any person who violates any term or provision of this chapter, with respect to any land or development within the city, by fine and penalties as provided herein.

Sec. 12.03.006 Interpretation and validity

The provisions of this chapter shall be considered to be the minimum requirements for the promotion of the public health, safety and general welfare. These regulations shall be consistently applied in order to accomplish the purposes within section 12.01.002.

ARTICLE 12.04 CONCEPT PLAN

Sec. 12.04.001 Purpose

The purpose of the concept plan is to demonstrate conformance with the comprehensive plan, compatibility of the proposed development with this and other applicable city ordinances, and the coordination of improvements within and among individually platted parcels, sections, or phases of a development in conjunction with the consideration of a preliminary plan. The applicant shall submit a concept plan of the entire area being subdivided when the entire area is not included in the preliminary plan. A Mylar and the number of legible copies outlined in the applicable concept plan application/checklist shall be submitted to the planning department for presentation to the planning and zoning commission.

Sec. 12.04.002 Content

A concept plan shall contain or have attached thereto:

(1) Name, address and phone numbers of the applicant(s), record owner, and authorized agents (engineer, surveyor, land planner, etc.)[.]

(2) Proposed name of the development; date revised and/or prepared; north indicator; scale.

(3) Location map.

(4) A layout of the entire tract and its relationship to adjacent property, existing development and recorded plats.

(5) The owner's name, deed or plat reference and property lines of property within three hundred (300) feet of the development boundaries, as determined by current tax rolls.

(6) Proposed number of residential and nonresidential lots, tracts or parcels of together with the estimated [sic]

(7) Proposed and existing arterial and collector streets to serve the general area.

(8) Proposed location of sites for parks, schools and other public uses, and all areas of common ownership.

(9) Significant drainage features and structures including any regulatory one-hundred-year floodplains.

(10) Significant existing features on, or within two hundred (200) feet of the property, such as railroads, roads, buildings, utilities and drainage structures.

(11) Approximate boundaries, development density and anticipated timing of proposed phases of development.

(12) Location of city limit lines and/or outer border of the city's extraterritorial jurisdiction, as depicted on the city's most recent base map, if either such line traverses the development or is contiguous to the development's boundary.

(13) A proposed phasing plan for the development of preliminary plan sections.

(14) A plan that indicates the availability of utilities, streets and drainage to the tract or identifies the availability of extensions of utilities, streets and drainage necessary to serve the tract.

(15) A letter of intent for parkland dedication.

(16) If applicable, a city-approved TIA pursuant to the requirements of chapter 16 article 16.04.

(17) An electronic copy of the concept plan.

(18) All other application requirements specified in the concept plan application/checklist.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.04.003 Acceptance

Concept plan acceptance does not ensure approval of a preliminary plan failing to meet specific requirements of this chapter, and approval does not comprise any vesting of development rights or any assurance that permits of any kind will be issued.

Sec. 12.04.004 Disapproval

Upon disapproval of the concept plan, the concept plan is invalid and the applicant shall begin the concept plan approval process again, including paying all of the fees associated with this process.

Sec. 12.04.005 Expiration

Acceptance of a concept plan shall remain valid after its acceptance by the planning and zoning commission unless a preliminary plan on all, or a portion of, the land governed by the concept plan remains valid and does not expire. Should the preliminary plan associated with the concept plan expire, that portion of the concept plan shall also expire. Should a preliminary plan apply to only a portion of the land governed by the concept plan, the remaining portion of the concept plan that does not govern the preliminary plan and that did not expire along with the preliminary plan shall expire after two (2) years pursuant the Texas Local Government Code section 245.005, as amended.

(Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.04.006 Revision

If a minor revision to a previously accepted concept plan is required, all changes must be completed on the one (1) Mylar copy on file in the office of the planning department. If a major revision to a previously accepted concept plan is required in conjunction with a preliminary plan[,] a new Mylar with the changes shall be submitted.

ARTICLE 12.05 PRELIMINARY PLAN*

Sec. 12.05.001 Purpose

A preliminary plan is required if a property is being subdivided into five (5) or more lots or right-of-way dedication with roadway improvements is required. The purpose is to present a detailed layout of the proposed subdivision in order to facilitate a review by the planning and zoning commission of the proposed subdivision's street and drainage system, easements, utilities, building lots, and other lots including parkland. Preliminary plans are submitted for approval prior to the approval of a final plat unless meeting the requirements of a short form final plat as provided for in this chapter. A final plat (short form final) may be approved without a preliminary plan if each lot abuts an existing dedicated public street with a minimum of fifty (50) feet of public frontage and the director determines that:

(1) A new street or an extension of a street is not necessary to provide adequate traffic circulation;

(2) The applicant has dedicated additional right-of-way necessary to provide adequate street width for an existing street abutting a lot; and

(3) Drainage facilities are not necessary to prevent flooding, or if necessary, the applicant has arranged for the construction of drainage facilities; and

(4) Adequate utilities are available to serve the tract or the applicant has made arrangements for the extension of public utilities to serve the tract.

Sec. 12.05.002 Content

Required preliminary plan information:

(1) The preliminary plan shall conform with an accepted concept plan. If the preliminary plan does not conform with an accepted concept plan, a new concept plan for the balance of the tract shall be submitted in conjunction with the preliminary plan should the preliminary plan not include the balance of the tract.

(2) The preliminary plan shall consist of a drawing on tracing paper or Mylar, drawn to a scale of one hundred (100) feet to one (1) inch. If the subdivision layout exceeds one sheet, it shall be accompanied by an overall layout sized to fit on a 22-inch by 34-inch sheet.

(3) The date, scale and north point, a key plan showing the location of the tract, the title under which the plan is to be recorded and the name of the owner, engineer or surveyor.

(4) The existing boundary lines and acreage of the land to be subdivided and the property lines and names and addresses of owners of adjacent properties.

(5) The location of the centerline of existing watercourses, railroads and other similar drainage and transportation features and the location and sizes of existing streets, alleys, easements, lots and public areas on or adjoining any part of the land.

(6) Topographical information approximately equivalent to, or better than, five (5) foot contour lines, such contour lines to be not more than one hundred (100) horizontal feet apart and based on North Atlantic datum 1983, which shall be specified on the plat. Such topographical information, locations and dimensions shall be of sufficient accuracy as to permit the planning of water lines, sanitary sewer lines, storm drainage facilities, streets and other proposed improvements.

(7) The location, size and flow line of all existing drainage structures on the land being subdivided and on adjoining tracts.

(8) The names, locations, widths and dimensions of proposed streets, alleys, easements, parks and other public spaces, sites for all private uses other than single-family dwellings, lot lines and building lines.

(9) All information necessary to demonstrate compliance with driveway and/or street intersection spacing rules of the Transportation Criteria Manual.

(10) The location of all existing structures, with a light dashed line and labeled.

(11) Limits of 100-year floodplain as identified per FEMA.

(12) A plan that indicates the availability of utilities, streets and drainage to the tract or identifies the availability of extensions of utilities, streets and drainage necessary to serve the tract[.]

(13) Sidewalk locations and widths.

(14) Fence locations.

(15) Tree survey indicating all protected trees. See article 12.23 for definition of protected trees.

(16) A letter of intent for parkland dedication.

(17) A letter from Williamson County 911 addressing division indicating street name approval.

(18) If applicable, a copy of the city-approved TIA submitted with the concept plan or a revised city-approved TIA pursuant to the requirements of chapter 14.

(19) Additional information necessary to demonstrate compliance with this chapter.

(20) An electronic copy of the preliminary plan.

(21) All other application requirements specified in the preliminary plan application/checklist.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.05.003 Approval

The planning and zoning commission shall act on the request for preliminary plan approval.

(1) Upon approval of the preliminary plan, the applicant shall furnish one (1) Mylar reproducible copy of the approved plan to be kept on file at the city as public record.

(2) Preliminary plan approval does not ensure approval of a final plat failing to meet specific requirements of this chapter, and approval does not comprise any vesting of development rights or any assurance that permits of any kind will be issued.

Sec. 12.05.004 Disapproval

Upon disapproval of the preliminary plan, the preliminary plan is invalid and the applicant shall begin the subdivision approval process again, including paying all of the fees associated with this process.

Sec. 12.05.005 Expiration

(a) The approved preliminary plan shall expire two (2) years from the date such permit was approved if no progress has been made towards completion of the project, pursuant to section 245.005 of the Texas Local Government Code, as amended.

(b) If a preliminary plan expires, it may be reinstated only upon resubmittal of the unaltered, approved plat to the planning and zoning commission. All new fees shall be paid as if the plat were initially being submitted.

(c) Should a final plat apply to only a portion of the land governed by the preliminary plan, the preliminary plan governing the remaining portion of the land shall expire after two (2) years pursuant to the Texas Local Government Code section 245.005, as amended.

Sec. 12.05.006 Extension

The applicant may apply for an extension, in writing no less than thirty (30) days prior to the expiration of a preliminary plan, stating reasons for needing the extension and demonstrating pursuit of approvals for final plat in accordance with this chapter. Upon receipt of this written request, the planning and zoning commission shall grant a two (2) year extension so long as the preliminary plan remains consistent with the current Cedar Park Code of Ordinances.

(Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.05.007 Revision

The director of planning may approve a minor change from an approved preliminary plan if the director determines that the minor change complies with the requirements of this subsection [section]. An applicant shall identify the proposed minor deviation on a copy of the preliminary plan submitted to the director. A formal application is not required.

(1) A minor deviation may not:

(A) Remove a property restriction or subdivision note;

(B) Modify a variance;

(C) Change an easement, except with the director's approval;

(D) Increase impervious cover;

(E) Modify a landscape easement, common area, green space, or other open space shown on the preliminary plan;

(F) Affect property outside the proposed plat;

(G) Increase the number of lots;

(H) Change the use of a lot; or

(I) Change the basic street layout.

(2) Except as provided in subsection 12.05.007(1), a minor change may include:

(A) Change in lot size or configuration;

(B) Change in street width or alignment or name; or

(C) Change in a utility or access easement.

(3) The director may approve a minor revision to an approved preliminary plan if the director determines that the minor revision complies with the requirements of this subsection [section]. An applicant shall request a minor revision in an application submitted to the director.

(4) A minor revision may not:

(A) Remove a property restriction or subdivision note;

(B) Modify a variance;

(C) Change an easement, except with the director's approval;

(D) Increase impervious cover;

(E) Modify a landscape easement, common area, green space, or other open space shown on the preliminary plan;

(F) Affect property outside the preliminary plan; or

(G) Increase the number of dwelling units.

(5) Except as provided in subsection (3)(4) [subsection (4)], a minor revision may:

(A) Include a minor deviation;

(B) Change the street layout;

(C) Increase in the number of lots; or

(D) Modify a subdivision to accommodate a change in use resulting from rezoning or land acquisition through eminent domain.

(6) The director of planning may determine that other changes similar in scope and effect to those described in subsection (3)(5) [subsection (5)] are minor revisions.

(7) The director of planning shall provide the planning and zoning commission with an approved minor deviation or minor revision before the planning and zoning commission considers approval of any plat.

ARTICLE 12.06 FINAL PLATS

Sec. 12.06.001 Purpose

The final plat provides detailed graphic information and associated text indicating property boundaries, easements, streets, utilities, drainage, and other information required for the maintenance of public records of the subdivision of land. A final plat may be submitted only after submission of a preliminary plan for the subject property. However, it is highly recommended that the applicant not submit a final plat application until the preliminary plan has been approved by the planning and zoning commission. If the applicant wishes to submit a final plat application prior to approval of the preliminary plan, the applicant shall submit a letter with the final plat application acknowledging that the applicant is subject to liabilities associated with making any necessary changes to the final plat application to bring it into conformance with an approved preliminary plan.

Sec. 12.06.002 Content

The final plat shall include the entire tract intended to be developed at one (1) time, and shall contain or have attached thereto:

(1) The plat shall consist of a drawing on Mylar or comparable substitute sheets twenty-four (24) inches by eighteen (18) inches and to a scale of one hundred (100) feet to one (1) inch. Where more than one (1) sheet is required, an index sheet of maximum size, twenty-four (24) inches by eighteen (18) inches shall be filed showing the entire subdivision. If the plat consists of five (5) acres or less the scale shall be of fifty (50) feet to one (1) inch.

(2) A location map showing the relation of the subdivision to streets and other prominent features[.]

(3) The submittal date, subdivision title, scale and north point shall be indicated on the first sheet.

(4) The names of the adjoining subdivisions or the names of the adjoining property owners, together with their respective plat or deed references.

(5) The lines and names of all proposed streets or other ways or easements, including a statement of the purpose for which such easements are dedicated; also the lines and names of other open spaces to be dedicated for public use granted for use of the inhabitants of the subdivision.

(6) Identification and location of proposed uses and reservations for all lots within the subdivision.

(7) Sufficient data to determine readily and reproduce on the ground the location, bearing and length of every street line, lot line, boundary line, block line and building line whether curved or straight, including the true north point. This shall include the radius, central angle and tangent distance for the property lines of curved streets and curved property lines that are not the boundary of curved streets.

(8) The location of all permanent monuments and control points.

(9) Suitable primary control points to which all dimensions, bearings and similar data shall be referred[;] dimensions shall be shown in feet and hundredths of a foot.

(10) Restrictive covenants imposed on the land if desired by the applicant.

(11) Engineering standard subdivision notes.

(12) A statement signed and acknowledged by the owner and any person holding a lien on the property dedicating all streets, alleys, easements, parks and other open spaces to public use or, when the applicant has made provision for perpetual maintenance thereof, to the inhabitants of the subdivision.

(13) The signature block for the chair of the planning and zoning commission and secretary of the planning and zoning commission attesting approval of the plat.

(14) The signature block for the director of planning attesting to the approval and authorization for recordation of the plat.

(15) A certificate bearing the signature and seal of the surveyor who made the survey that the requirements of this chapter have been complied with.

(16) Signature blocks for the engineer, and property owner.

(17) If the subdivision is not to be served immediately by a water utility, the following is required to be shown on the plat: a restriction prohibiting occupancy of any lot until water satisfactory for human consumption is available from a source on the land or a community source in adequate and sufficient supply for family use and operation of a septic tank and system. Plans and specifications for a private water supply for subdivisions must be submitted by a registered professional engineer and approved by the state commission on environmental quality (TCEQ). If private water wells are proposed, lots are required to comply with minimum lot size requirements of the Williamson Cities and County Health District and/or Austin-Travis County Health Department, depending on whose jurisdiction the subdivision falls within.

(18) If the subdivision is not to be served immediately by a sewage collecting system connected to a treatment plant or to a public sewer system, disposal of domestic sewage through an on-site sewage disposal facility is required to be approved by the county health officer. The following restriction is required to be placed on the plat: occupancy of any lot is prohibited until an on-site sewage facility has been installed in accordance with the rules and regulations of the TCEQ, the Williamson County and Cities Health District and/or the Austin-Travis County Health Department and has been inspected and approved by the county health officer.

(19) Subdivisions outside city limits are required to be reviewed and approved by the appropriate health officer for applicable environmental regulations.

(20) The plat shall indicate the route of sidewalks in compliance with the city's adopted street standards.

(21) Tree survey indicating all protected trees as per the requirements of chapter 14: site development ordinance.

(22) Three (3) copies of the approved utility plan.

(23) Three (3) copies of the approved preliminary plan.

(24) Surveyor's certified perimeter field notes. Beginning point is to be an original corner of the original survey of which the plat is a part. At least one corner of a subdivision shall be tied by course and distance to a corner of the original survey of which it is a part or to a previously platted lot. The plat shall include a note describing the corner tie, and if the subdivision is located within one mile of a global positioning system (GPS) monument accepted by the city, the location, coordinates and elevation of a 5/8-inch iron rod set in concrete at two locations on the boundary of the subdivision shall be tied horizontally and vertically to the GPS monument.

(25) A minimum of two (2) survey ties are required across all right-of-way and at all changes in the width of right-of-way.

(26) Existing easements on or adjacent to the proposed subdivision including record references and a statement signed and sealed by the surveyor indicating that all existing easements on or adjacent to the proposed subdivision shown on the title policy or discovered with a title search prepared in conjunction with the most recent purchase of property currently being subdivided have been shown or noted on the plat.

(27) All information necessary to demonstrate compliance with driveway and/or street intersection spacing rules of chapter 14 site development ordinance and the transportation criteria manual.

(28) Additional information necessary to demonstrate compliance with this chapter.

(29) An electronic copy of the final plat.

(30) All other application requirements specified in the final plat application/checklist.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.06.003 Procedure

After approval of the preliminary plan for a proposed subdivision, a final plat for that subdivision shall be submitted to the city for consideration by the planning and zoning commission. The preliminary plan for the subdivision must be valid at the time the final plat for the subdivision is submitted to the city for consideration by the planning and zoning commission. The planning and zoning commission shall approve or disapprove any final plat unless otherwise allowed under the Cedar Park Code of Ordinances.

(1) Legible prints, as indicated on the application/checklist form shall be submitted to the planning department, along with the following:

(A) Completed application/checklist forms and the payment of all applicable fees listed on the application/checklist.

(B) Any materials or documents required by the planning and zoning commission as a condition of preliminary plan approval.

(C) A letter requesting any variances from the provisions of this chapter, if not previously approved as part of the preliminary plan.

(D) Any additional documents needed to supplement the information provided on the final plat.

(2) City staff shall review all final plat submittals for completeness at the time of submission. If, in the judgment of city staff, the final plat submittal substantially fails to meet the minimal informational requirements as outlined above or does not meet the requirements set forth in the application/checklist, it will not be accepted as filed.

(3) Prior to the planning and zoning commission meeting at which the final plat is presented, city staff shall review the plat for consistency with the preliminary plan as approved by the planning and zoning commission, as well as for consistency with city codes, policies and plans.

(4) City staff shall prepare a report analyzing the final plat submittal, as well as any comments received concerning the preliminary plan, and recommending either approval or disapproval of the final plat.

Sec. 12.06.004 Approval

If a final plat is approved by the planning and zoning commission, the corrected and signed final plat shall be submitted to the planning department with the appropriate number and format of electronic and paper copies as required by the planning department, for recording with the appropriate county clerk. The plat shall be filed and recorded within two (2) years of the date of final approval by the planning and zoning commission. Otherwise, the approval of the planning and zoning commission becomes invalid. Planning and zoning commission approval becomes effective on the date the planning and zoning commission takes final action on the plat.

Sec. 12.06.005 Disapproval

Upon disapproval of the final plat, the final plat is invalid and the applicant shall begin the final plat approval process again, including paying all of the fees associated with this process prior to action by the planning and zoning commission.

(Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.06.006 Reserved

Editor's note–Former section 12.06.006 pertaining to the final plats expiration and deriving from Ordinance CO42-07-07-12-3I adopted 7/12/07, was deleted in its entirety by Ordinance CO10-15-01-08-C1 adopted 1/8/15.

Sec. 12.06.007 Reserved

Editor's note–Former section 12.06.007 pertaining to the final plats extension and deriving from Ordinance CO42-07-07-12-3I adopted 7/12/07, was deleted in its entirety by Ordinance CO10-15-01-08-C1 adopted 1/8/15.

Sec. 12.06.008 Revision

If a revision of the final plat is required by the planning and zoning commission, then the final plat shall be considered statutorily disapproved until all revisions are met and fully acceptable, and shall not be recorded until the revised final plat has been resubmitted and approved by city staff for compliance with the commission's requirements.

Sec. 12.06.009 Recordation

Prior to the recordation of the final plat, one (1) original Mylar of the final plat shall be submitted to the city for signatures, and:

(1) The final plat shall have been approved by the planning and zoning commission pursuant to the provisions of this chapter.

(2) All conditions of final plat approval established by the planning and zoning commission shall have been determined to be complete by city staff.

(3) Fees-in-lieu of parkland dedication as required by this chapter, if applicable, shall have been paid.

(4) Copies of any agreements required providing for the proper and continuous operation, maintenance, and supervision of any facilities that are of common use or benefit which cannot be satisfactorily maintained, or which have been rejected for operation and/or maintenance, by an existing public agency shall be executed.

(5) Written acceptance of all improvements required by this chapter by the city or, in lieu of acceptance, assurance of completion of said improvements pursuant to this chapter, shall be received by the city.

(6) Applicable fees pursuant to city ordinance(s) shall be paid.

(7) Notes shall be added to the plat describing any variances approved by the planning and zoning commission.

(8) City staff shall, upon determination that all provisions of this chapter have been satisfied, and all the above conditions have been met, obtain signatures certifying final plat approval by the chairperson of the planning and zoning commission, and director of planning.

(9) Once the original final plat has been signed by the chairperson of the planning and zoning commission and the director of planning, city staff shall send the original Mylar for the reproduction of two (2) photographic Mylars at the applicant's expense.

(10) City staff shall, after the photographic Mylar copies and the original final plat have been duly recorded in the official county records, return the original final plat to the surveyor within five (5) working days by notifying the surveyor that the original final plat is available for pick-up at city hall.

(11) The city shall keep one (1) photographic Mylar copy of the original approved final plat on file as public record.

Sec. 12.06.10 Responsibility

Notwithstanding the approval of any final plat by the planning and zoning commission, the applicant and the engineer that prepares and submits such plats shall be and remain responsible for the adequacy of the design and nothing in this chapter shall be deemed or construed to relieve or waive the responsibility of the applicant or his/her engineer for or with respect to any plat submitted.

ARTICLE 12.07 SHORT FORM FINAL PLATS

Sec. 12.07.001 Purpose

(a) The applicant may follow a short form final plat procedure when the land proposed to be subdivided or resubdivided meets the following conditions and requirements:

(1) Such land abuts upon a street of adequate width and is so situated that no additional streets and no alleys, easements or other public property are required in order to meet requirements of this chapter. Each of the lots is contiguous with at least one (1) of the other lots in the subdivision for a distance of at least fifty (50) feet

(2) The perimeter of the tract being subdivided has been surveyed and marked on the ground and a plat thereof prepared and filed with the city and the nearest corner of each lot or parcel of such proposed subdivision is within two hundred (200) feet of a known corner which is adequately marked by a concrete monument or iron stake.

(3) The utilities, as required by this chapter, are in place to serve each parcel or lot of such subdivision or re-subdivision in compliance with the procedures of approval established in chapter 212 LGC, and arrangements to provide such utilities have been made and fiscal or other surety acceptable to the director of engineering or his/her designee have been provided.

(4) The planning and zoning commission may require the standard final plat procedures outlined in section 12.02.004 [12.06.003] of this chapter, if the city determines that the plat is inconsistent with any element of the concept plan, or any established city ordinances, codes or policies.

Sec. 12.07.002 Format

The format of the short form final plat shall correspond with the format for final plats as required in section 12.02.004 [12.06.002] of this chapter.

Sec. 12.07.003 Content

The content of the short form final plat shall correspond with the content for final plats as required in section 12.02.004 [12.06.002], except that:

(1) The city may permit omission of any informational requirements that are determined by the city to place an excessive burden on the applicant, including, but not limited to contours, centerlines of existing watercourses, etc.

(2) The city shall require the following note on the short form final plat: (if applicable)

This subdivision is subject to all covenants and restrictions appearing on the plat of _____, Lot(s) _____, recorded at Cabinet _____, Slide _____ of Plat Records of _____ County, Texas

Sec. 12.07.004 Procedure

The procedure for review and approval of a short form final plat shall follow the procedure for final plats, except that:

(1) The short form final plat may be submitted without approval of a preliminary plan. The plat, prepared by a surveyor, and engineer if required, and bearing their seals shall be submitted to the planning and zoning commission for approval before recordation of the plat.

(2) Legible prints, as indicated on the short form final plat application form shall be submitted along with the following:

(A) Completed application form and the payment of all required fees.

(B) Certification from all applicable taxing authorities that all taxes due on the property have been paid.

(C) Notification materials if required herein.

Sec. 12.07.005 Notification

If during the preceding five (5) years, any of the area to be replatted was limited by a permanent zoning classification to residential use for not more than two (2) residential units per lot; or any lot in the preceding plat was limited by deed restrictions to residential use for not more than two (2) residential units per lot, all owners of property (as determined by the most recent tax rolls from the county appraisal district), any part of which is located within two hundred (200) feet of the perimeter of the land to be subdivided, shall be notified by mail.

(1) The city shall publish a public notice in the official newspaper of general circulation in the county in which the municipality is located; not fewer than fifteen (15) nor more than thirty (30) days prior to said public hearing.

(2) The city shall mail public notification forms, postmarked no fewer than fifteen (15) days prior to the appropriate planning and zoning commission hearing, to the owners of all property, any part of which is located within two hundred (200) feet of the perimeter of the property included within the subdivision.

Sec. 12.07.006 Approval

The planning and zoning commission, after holding a public hearing in accordance with city ordinances and codes, shall approve or disapprove the subdivision plat. The approval process of a short form final plat shall be the same as the approval of a final plat.

Sec. 12.07.007 Revision

The revision process of a short form final plat shall be the same as the revision process described for a final plat in section 12.02.004 [12.06.008].

Sec. 12.07.008 Recordation

The recordation procedures of a short form final plat shall be the same as the procedures for a final plat in section 12.02.004 [12.06.009].

Sec. 12.07.009 Responsibility

Notwithstanding the approval of any short form final plat by the planning and zoning commission, the applicant and the engineer that prepares and submits such plats shall be and remain responsible for the adequacy of the design and nothing in this chapter shall be deemed or construed to relieve or waive the responsibility of the applicant or his/her engineer for or with respect to any plat submitted.

ARTICLE 12.08 AMENDED PLATS – DIRECTOR APPROVAL

Sec. 12.08.001 Purpose

(a) An amended plat that meets all of the informational requirements set forth in this chapter may be approved and recorded by the city without vacation of the preceding plat, without a public hearing, and without approval of other lot owners within the platted subdivision provided that any persons with a vested interest affected by the plat amendment signs the plat and application; and that the purpose of the amended plat is:

(1) To correct an error in any course or distance shown on the preceding plat; or

(2) To add any course or distance that was omitted on the preceding plat; or

(3) To correct an error in the description of the real property shown on the preceding plat; or

(4) To indicate monuments set after death, disability, or retirement from practice of the engineer or surveyor charged with responsibilities for setting monuments; or

(5) To show the proper location or character of any monument which has been changed in location, character, or shown incorrectly on the preceding plat; or

(6) To correct any other type of scrivener or clerical error or omission as previously approved by the commission and council; such errors and omissions may include, but are not limited to: lot numbers, acreage, street names, and identification of adjacent recorded plats; or

(7) To correct an error in courses and distances of lot lines between two (2) adjacent lots where lot owners join in the application for an amended plat and neither lot is abolished, provided that such amendment does not attempt to remove recorded covenants or restrictions and does not have a material adverse effect on the property rights of the other owners in the plat; or

(8) To relocate a lot line in order to cure an inadvertent encroachment of a building or improvement on a lot line or on an easement; or

(9) To relocate one (1) or more lot lines between one (1) or more adjacent lots where the owner or owners of all such lots join in the application for the amended plat, provided that such amendment does not attempt to remove recorded covenants or restrictions, or increase the number of lots[.]

(10) If a plat filed under this section, involves four (4) or fewer lots fronting on an existing public street, and does not require the creation of any new street or the extension of municipal facilities, and/or is amended with the purpose of one or more reasons provided in section 212.016 of chapter 212 subchapter A of the Local Government Code, such plat may be approved (but not disapproved) by the planning director without review by the planning and zoning commission.

(b) A preliminary plan is not required with an amended plat -director approval.

(c) An amended plat is required to meet the requirements of a final plat unless otherwise specified in this section.

Sec. 12.08.002 Format

The format of an amended plat - director approval shall be the same as the format for a short form final plat.

Sec. 12.08.003 Content

The content of an amended plat - director approval shall be the same as the content requirements for a short form final plat.

(1) The city shall require the following note on the amended plat:

This subdivision is subject to all covenants and restrictions appearing on the plat of ____, Lot(s) _____ , recorded at Cabinet ____ , Slide ___ of the Plat Records of _____ County, Texas.

Sec. 12.08.004 Procedure

(a) The amended plat. Director approval, prepared by a surveyor, and engineer if required, and bearing their seals shall be submitted to the city for approval before recordation of the plat.

(b) Legible prints, as indicated on the application/checklist form shall be submitted to the city along with the following:

(1) Completed application forms and the payment of all applicable fees.

(2) Certification from all applicable taxing authorities that all taxes due on the property have been paid.

(3) Any attendant documents needed to supplement the information provided on the plat.

Sec. 12.08.005 Notification

Public notification and public hearings shall not be required for an amended plat - director approval.

Sec. 12.08.006 Approval

The planning director shall approve any amended plat meeting the requirements of this chapter within thirty (30) days of receipt of a complete submittal. However, if in the planning director's determination, the amended plat does not satisfy this chapter, the planning director may require the plat to be processed in accordance with the final plat procedures in section 12.02.004 [12.06.003] of this chapter.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.08.007 Expiration

The amended plat shall expire two (2) years from the date such permit was approved if no progress has been made towards completion of the project, pursuant to section 245.005 of the Texas Local Government Code, as amended. (Ordinance CO10-15-01-08-C1 adopted 1/8/15)

Sec. 12.08.008 Recordation

Recordation of an amended plat. Director approval shall follow the same recordation provisions of a final plat.

Sec. 12.08.009 Responsibility

Notwithstanding the approval of any amended plat by the planning director, the applicant and the engineer that prepares and submits such plats shall be and remain responsible for the adequacy of the design and nothing in this chapter shall be deemed or construed to relieve or waive the responsibility of the applicant or his/her engineer for or with respect to any plat submitted.

ARTICLE 12.09 PLAT VACATION

Sec. 12.09.001 Purpose

(a) The purpose of a plat vacation is to nullify all or part of a previously recorded plat.

(b) Vacating plat:

(1) The owners of the tract may vacate the plat at any time before any lot in the plat is sold. A signed vacation instrument declaring the plat vacated must be approved and recorded, in accordance with the Texas LGC.

(2) If any lots have been sold, the plat or any part of the plat may be vacated on the application of all the owners of lots in the plat. (e.g. vacation instrument)

Sec. 12.09.002 Procedure

(a) A letter from the applicant explaining the reason for the plat vacation.

(b) Legible prints, as indicated on the application/checklist form shall be submitted to the city along with the following:

(1) Completed application forms and the payment of all applicable fees.

(2) Certification from all applicable taxing authorities that all taxes due on the property have been paid.

(3) Any attendant documents needed to supplement the information provided on the plat.

ARTICLE 12.10 RELEASE/ABANDONMENT OF EASEMENTS

Sec. 12.10.001 Purpose

(a) The purpose of a release of easement is to nullify a portion or the entire easement established by a previously recorded plat or by separate instrument. A release of easement may be initiated by the respective lot owner(s) or by the city.

(b) The applicant shall submit a release of easement application to the engineering department. The application shall contain release forms signed by all owners and entities authorized to use the easement, a written letter of justification to explain the intent and reason for the proposed release, a metes-and-bounds description and sketch of the proposed area to be released and signed by the owner of the land requesting the city to vacate the easement, in order to release all or a portion of an easement, including but not limited to a public utility easement, drainage easement, conservation easement, public access easement or combination public easement.

(c) The director of engineering or his/her designee shall review and recommend approval or disapproval of the release of the easement. If the request is approved, then the city engineer shall prepare a report to the city manager informing the city manager of the administrative action on the release of easement. The request will also require the approval of the city manager.

(d) If recommended for approval by the city manager, the easement shall be released when all owners and entities authorized to use the easement sign and acknowledge a release form, and the release of easement instrument declaring the easement released is recorded.

Sec. 12.10.002 Application requirements

A release of easement application must include the following:

(1) A copy of the deed(s) identifying the owners of the property;

(2) A letter signed by the owners of the lot to the director of engineering or his/her designee containing the following:

(A) A metes and bounds description and survey sketch including a description of the easement or portion of the easement to be released including the lot description and orientation to the nearest lot line;

(B) An explanation of the purpose of the release request; and

(C) Signatures by the entities authorized to use the easement agreeing to the requested release of easement, in the format provided in the application;

(3) Payment of applicable fees for requesting a release/abandonment. See appendix A fee schedule.

ARTICLE 12.11 ACTION ON SUBDIVISION APPLICATIONS

Sec. 12.11.001 Approval

A subdivision shall be approved for recordation only if:

(1) The subdivision complies with the provisions of this chapter as well as the transportation ordinance (including the transportation criteria manual and drainage criteria manual), the site development regulations, the stormwater management ordinance, the Cedar Park comprehensive plan, the recreational trails system plan, and the transportation master plan (including the cedar park arterial map and the Cedar Park collector map);

(2) If inside the city limits, the proposed plat is in conformance with the zoning ordinance of the city;

(3) The subdivision is in compliance with the provisions of all the city's adopted ordinances applicable to the property being planned and/or platted;

(4) In a subdivision within city limits, the applicant has constructed and installed the facilities in the subdivision in accordance with the provisions of this chapter and the subdivision has been accepted for operation and maintenance by the city council or has made provisions as follows that in the event of the failure of the applicant to make such improvement, within a reasonable period of time as determined by the city in its sole discretion, the same will be constructed and installed without cost to the city. Such provisions shall be made as follows, each in an amount equal to the estimated cost, as approved by the city, of constructing and installing the required improvements. See Sec. 12.15.003 Completion of improvements.

(5) In a subdivision located in the ETJ the applicant has constructed and installed streets, roads, bridges and drainage structures in accordance with the approved construction plans and the requirements of the city or the county as defined within this chapter, and the county has approved and accepted such streets and roads for maintenance; or provisions satisfactory to the county for such construction, installation, approval and acceptance for maintenance have been made with the county.

ARTICLE 12.12 DESIGN STANDARDS

Sec. 12.12.001 Adoption of City of Austin Standards and Standard Specifications Manuals

Through adoption of this chapter, the City of Cedar Park has hereby adopted the standards, criteria, rules and regulations as set forth in the City of Austin Standards Manual and the City of Austin Standard Specifications Manual*****, being the most current addition thereof, as amended from time to time, including later editions, except such portions as are hereinafter amended, deleted or modified by the City of Cedar Park. Said manuals are incorporated as fully as if set out at length herein, and the same shall be controlling over all improvements within the city limits and extraterritorial jurisdiction of the City of Cedar Park, Texas.

***** Use of the Austin Criteria Manual provides the latest designs and construction standards. Cedar Park selectively adopts revisions to these manuals.

Sec. 12.12.002 General design standards

(a) In addition to the requirements established by this chapter, all development within the city limits shall be designed so as to comply with the intent and provisions of applicable city codes and ordinances; and all development within the ETJ of the city shall comply with this chapter and applicable city/county codes and ordinances.

(b) The minimum design standards as contained herein shall provide the basic criteria for evaluating proposed development. The city may, however, establish reasonable design requirements in excess of these established minimum standards, as set forth herein.

(c) After competition of construction improvements and prior to city council acceptance of operation and maintenance of the subdivision the applicant shall provide a certificate of compliance from the state department of licensing and regulation (TDLR).

Sec. 12.12.003 Streets

All transportation improvements including streets, driveways, sidewalks, bikeways, traffic control, and parking areas within the city's jurisdiction shall be designed in accordance with the City of Austin's Transportation Criteria Manual, the transportation master plan, the recreational trails system plan, and any City of Cedar Park applicable codes or ordinances.

(1) Street names cannot be duplicated within the same 911 calling area.

(2) Relationship to street system. Streets of a new subdivision shall be in line with existing streets in adjoining property except when, in the opinion of the planning and zoning commission, topography, requirements of traffic circulation or other considerations make it desirable to depart from such alignment.

(3) Street alignment. To encourage lower motor vehicle speeds through residential neighborhoods, local residential streets shall be designed to avoid straight sections in excess of 800 feet in length and residential collector streets shall be designed to avoid straight sections in excess of 1,200 feet in length unless the planning and zoning commission finds that there is no other reasonable alternative.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

(4) Access to lots. Each lot in a subdivision shall abut on an existing or proposed public or private street, except those lots meeting criteria set forth in section 12.12.010(c) lot arrangements regarding public utility facility lots, provided a perpetual access easement is dedicated to the lot at time of platting or prior to lot development. (Ordinance CO39-14-04-10-C6 adopted 4/10/14)

(5) Street right-of-way widths. Street right-of-way widths in subdivisions shall be in conformance with the transportation criteria manual as adopted in the code of ordinances and shall in no event be less than fifty (50) feet for local streets, sixty (60) feet for collector streets and eighty (80) feet for thoroughfares and industrial streets. The full roadway row width shall be platted and dedicated adjacent to the full length and/or width of all lots in the subdivision at the time of platting of the lots. No voids may be left within the subdivision with the intent of avoiding responsibility for constructing roads or bridges, nor along the subdivision boundary to avoid connecting with adjacent subdivisions or roads.

(6) Street classification and characteristics.

(A) Local streets. The purpose of a local street is to provide lot street frontage and carry traffic to a higher classification street. Because of its limited purpose, a local street generally carries an average daily traffic volume no greater than two thousand (2,000) vehicle trips. Local streets are divided into three subcategories: local-residential, local-nonresidential or local-rural. Unless approved by the director of planning, a local street shall not connect to two separate higher classification streets or connect directly to arterial streets.

(B) Collector streets. Collector streets are divided into two subcategories: local and major. The purpose of collector streets is to convey traffic from intersecting local streets and to expedite the movement of traffic to an arterial street or other collector street. A local collector street generally carries an average daily traffic volume of two thousand (2,000) to six thousand (6,000) vehicle trips. A major collector street generally carries an average daily traffic greater than six thousand (6,000) vehicle trips. Generally, major collector streets shall not permit on-street parking. A collector street may exceed one thousand four hundred (1,400) feet provided that no residential lots front the collector street, and the collector street shall not have any straight sections exceeding one thousand (1,000) feet.

(C) Arterial streets. The purpose of an arterial street is to carry high volumes of through traffic. Arterial streets serve as a link between major activity centers within the urban area. Access is usually limited to intersections, multifamily developments and commercial driveways. All arterial streets are designated in the general plan. An arterial street shall not end as a cul-de-sac. Generally, arterial streets shall not permit on-street parking.

(7) Street names. New streets in subdivisions shall be named so as to provide continuity of name with existing streets and so as to prevent conflict with identical or similar names in other parts of the city and within the area of extraterritorial jurisdiction.

(8) Street signs. Street signs may incorporate the city's official logo.

(9) Speed limit signs. Speed limit signs shall be placed throughout the subdivision as directed by the director of engineering or his/her designee and shall also be shown on the subdivision improvement plans.

(10) Street intersections. Acute angles between streets in subdivisions at their intersection shall be avoided; provided, that when intersecting angles sharper than eighty (80) degrees are deemed necessary by the planning and zoning commission, the property line in the small angle of the intersection shall be rounded so as to permit the construction of curbs having a radius of not less than twenty-five (25) feet without decreasing the normal width of the sidewalk area.

(11) Stub streets.

(A) A proposed subdivision or addition must provide access to adjacent land subdivided by stubbing appropriate streets to the boundaries of the proposed addition or subdivision. When the abutting land is platted, the developer shall integrate the stubbed streets into the existing traffic system of streets in a logical manner as well as continue the same street classification of the stub street. The developer shall present a schematic plan to demonstrate how the stub street will eventually extend through the adjacent property and connect with a collector or arterial roadway.

(B) Temporary paved turnarounds shall be provided at the end of stubbed streets which are more than one hundred fifty feet (150') long.

(12) Cul-de-sacs. Except as provided herein, the maximum length of a cul-de-sac street shall be seven hundred fifty feet (750'), measured from the centerline of the nearest intersecting outlet street to the center point of the turnaround; except that a longer length may be allowed upon a recommendation by the fire department and if the planning and zoning commission determines any of the following:

(A) That no secondary access can be reasonably provided to the portion of the subdivision which is to be served by the cul-de-sac;

(B) That limited access to the subdivision is due to a topographical condition on the property or a particular physical surrounding; or

(C) That the cul-de-sac is temporary and the road is planned to extend to the adjacent property.

(13) Curbing. All streets shall have standard curbing and gutter except for the rural streets in the ETJ where ribbon curb is allowed. All raised medians and islands located within the street pavement shall be bordered by standard curb and gutter, unless otherwise approved by the director of engineering or his/her designee. All concrete curb and gutter shall be installed and constructed in accordance with all applicable city codes and ordinances.

(14) Curb Ramps.

(A) Curb ramps are required within a street right-of-way wherever a sidewalk or pedestrian route intersects with a curb. The design and construction of curb ramps shall be in accordance with the design and construction standards, and shall meet the Texas Accessibility Standards administered by the state department of licensing and regulation and the Americans with Disabilities Act of 1990, as amended.

(B) Whenever a sidewalk or pedestrian route crosses a raised median, the raised median shall be cut through level with the street, or shall have curb ramps at both median curbs plus a level area at least four (4) feet long between the curb ramps in the median.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

(15) At-grade rail crossings. Prior to the city's acceptance of the subdivision improvements or prior to the issuance of a building permit, the developer of a proposed subdivision that includes a public at-grade rail crossing shall provide the city with written approval from Capital Metro stating that the rail crossing improvements have been designed and installed with adequate supplemental safety measures as required by the Federal Railroad Administration to establish a quite [quiet] zone. (CO29-12-01-12-C9 adopted 1/12/12)

Sec. 12.12.004 Sidewalks

(a) Sidewalks shall be provided and located on both sides of all streets within and immediately adjacent to a proposed development and shall be designed and constructed in accordance with the Texas Accessibility Standards administered by the Texas Department of Licensing and Regulation, Americans with Disabilities Act, Transportation Criteria Manual, Texas Accessibility Standards, and the city's zoning ordinance, transportation master plan, and hike and bike trails master plan, as amended.

(b) The director of development services or their designee may grant an administrative waiver for this sidewalk requirement if a rural subdivision comprised of three or fewer lots, or one single-family home on a single-family zoned lot, meets all of the following criteria:

(1) The roadway adjacent to the proposed development is existing and was constructed without raised curb and gutter; and

(2) The existing roadway adjacent to the proposed development has no existing sidewalks on the lots on both sides of the proposed development along the same street frontage; and

(3) The proposed development has provided a minimum ten-foot (10') wide pedestrian easement along the frontage of the existing roadway on the proposed lot for which the waiver is being requested.

(c) Any requested variance to the sidewalk requirements of this section which is not eligible for a waiver by the director of development services as described in subsection (b) must be approved by the planning and zoning commission in accordance with section 12.12.019 variances for design standards.

(d) When the delay of sidewalk construction is deemed appropriate due to future right-of-way improvements, escrow funds in lieu of the construction of sidewalks may be approved by the engineering department. Such funds shall be escrowed with the city prior to the filing of the subdivision plat with the appropriate county clerk's office. If the tract has already been platted and filed, then the funds must be escrowed prior to final approval of a site plan. The escrow amount shall be determined by the square foot cost of constructing such sidewalk, as estimated by the engineering department.

(Ordinance CO14-13-01-10-C4 adopted 1/10/13)

Sec. 12.12.005 Park trails

(a) Hike and bike trails shall be constructed in accordance with the recreational trails system plan. Locations of such trails shall be consistent with the locations designated on the plan unless otherwise approved by the director of parks & recreation or his/her designee. No development shall interrupt the future trail routes or otherwise hinder efficient public access to or from a trail.

(b) The location of trails within developments adjacent to major creeks or greenway trails recognized on the recreational trails system plan must be approved by the parks and recreation department prior to approval of a preliminary plan and/or final plat. Prior to submittal of the preliminary plan and/or final plat, the applicant must coordinate with the parks and recreation department to walk and stake a designated location for the hike and bike trail. The location of the trail shall be specified on the preliminary plan and/or final plat as the approved location for the hike and bike trail.

Sec. 12.12.006 Monuments and property markers

(a) Concrete monuments in subdivisions shall be placed at all corners of boundary lines of subdivision and in any case not more than thirteen hundred (1,300) feet apart. Such monuments shall be eighteen (18) inches deep, except where rock is encountered within fourteen (14) inches of the surface, in which case such monuments shall be countersunk four (4) inches in such rock. The exact intersection point on the monument shall be marked by a copper pin one-fourth (1/4) inch in diameter embedded at least three (3) inches in the monument. The top of the monument shall be placed flush with the natural ground.

(b) Intermediate property corners, curve points and angle points shall be marked by iron stakes, not less than twelve (12) inches in length, driven flush with the ground or countersunk if necessary in order to avoid being disturbed.

Sec. 12.12.007 Easements

(a) Except where alleys of not less than twenty (20) feet in width are provided in a subdivision, easements for utilities and enclosed or open drainage ways not less than seven and one-half (7-1/2) feet in width shall be retained on each side of rear lot lines. Where deemed necessary by the public works department, such easements not less than five (5) feet in width, on each side of side lot lines, shall be retained. Easements for any of such purposes shall be required across parts of lots other than as described above as deemed necessary by the public works department. All such easements shall be so aligned as to permit construction of utilities therein at a minimum cost.

(b) A ten-foot wide public utility easement (PUE) is required adjacent to all street ROW on all lots.

(c) A five-foot wide PUE is required along each side lot line from the front property line to the front building line except where a side lot line is also the rear lot line of an adjacent lot in which case the 5-foot wide PUE is dedicated along the entire length of the side lot line.

(d) Easements; in areas adjoining proposed subdivisions. When the public works department finds that easements in areas adjoining a proposed subdivision are necessary to provide adequate drainage thereof or to serve such subdivision with utilities, the applicant shall obtain such easements.

(e) All existing and proposed easements, safety lanes, and rights-of-way shall be clearly indicated on the plat or plan, as well as an indication to the use of each easement or right-of-way.

(f) No permanent structure may be placed in or over any easement or right-of-way except a structure whose use and location are necessary to the designated use of the right-of-way or easement or which otherwise will not affect the use, maintenance or repair of such easement.

(g) Easements shall be established and dedicated for all public utility and drainage appurtenances, including common access areas, and other public uses requiring dedication of property rights.

Sec. 12.12.008 Block standards

(a) Except as provided otherwise in this section, the terms and provisions of the zoning ordinance establishing the minimum lot area, width, setback line, side yard and rear yard requirements for each zoning or use category are incorporated herein by reference. Such regulations and standards shall be applied to property within the city limits based upon the zoning of the property and to property within the extraterritorial jurisdiction based on the land use proposed by the applicant.

(b) Block lengths. Residential blocks in subdivisions shall not exceed one thousand twelve hundred (1,200) [sic] feet in length nor be less than five hundred (500) feet in length. Commercial and industrial block lengths may be up to two thousand (2,000) feet in length; provided that the requirements of traffic circulation and utility services are met. A block shall be considered broken if at the preliminary plan phase, the dedication of an easement or right-of-way not less than ten (10) feet wide bisecting the center of any block in excess of eight hundred (800) feet in length is used to accommodate utilities, drainage facilities, and/or pedestrian access to greenbelts or park areas.

(c) The planning and zoning commission may grant a block length variance if they determine that the proposed block length adequately meets the requirements of traffic circulation, utility service, and topography.

(d) Block widths. Block widths in subdivisions shall be such as to allow for two (2) tiers of lots back to back, except where abutting a thoroughfare, to which access to the lots is prohibited, or where prevented by topographical conditions or size of the property.

Sec. 12.12.009 Lot and block numbering

(a) All lots are to be numbered consecutively within each block. Lot numbering may be cumulative throughout the subdivision if the numbering continues from block to block in a uniform manner that has been approved on an overall preliminary plan. Use block numbers only when previously platted units of the same subdivision have numbered blocks.

(b) Blocks are to be numbered consecutively within the overall plan and/or sections of an overall plat.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.12.010 Lot arrangements

(a) Standard lot requirements.

(1) On the basis of the land district (single-family, residential, duplex, multifamily, commercial, retail, office, mobile home, industrial, etc.) in which they lie and the use to which they are to be put, all lots or tract sizes must conform to the regulations of the zoning ordinance, including minimum area, width and depth.

(2) Lots should be rectangular insofar as practicable. Sharp angles between lot lines should be avoided. The ratio of depth to width should not ordinarily exceed two and one-half (2-1/2) times. Irregular shaped lots shall have sufficient width at the building line to meet frontage requirements for the appropriate zoning district.

(3) In general, the sidelines of lots in subdivisions shall be approximately at right angles to straight street lines or radial to curved street lines.

(4) Residential lot arrangements that face adjacent lots at right angles with one another shall be avoided.

(5) Lot lines shall be arranged to avoid unusable areas such as long, narrow areas, sharp acute angles or flag lots.

(b) Flag lots.

(1) Flag lots are only allowed where:

(A) The proposed lot configuration is needed to abate an acute topographical condition or other unusual property accessibility constraint not created by the applicant; or

(B) The proposed lot is located within the RA rural agricultural district or the ES estate lot residential district or for lots under two (2) acres within the city's ETJ; or

(C) The unusual adjacent property boundary configuration constrains the arrangement of an otherwise standard lot configuration;

(D) Where any of the above items are present, the development services director or their designee, may allow the proposed flag lot configuration, provided the following conditions are met:

(i) The proposed lot does not circumvent the normal platting of streets for public and emergency access;

(ii) The proposed lot does not prevent the extensions of streets to adjacent property;

(iii) The proposed lot width is not less than fifty (50) feet in width at its frontage connection with the adjacent public or approved private street; and

(iv) The narrow or elongated part of the proposed lot 'pole' does not exceed one hundred (100) ft. in length, measured from the connecting street frontage to where the lot widens into a 'flag' shape to receive a suitable building area where a building setback line shall be established; nor shall more than two (2) adjacent neck lots be connected.

(E) Where any of the foregoing requirements are not met, or a variance request is denied by the development services director or their designee, the planning and zoning commission may authorize a variance from these regulations pursuant to section 12.12.019 of this chapter.

(c) Exception for public utility facilities.

(1) Where a proposed lot shall be used exclusively as an unmanned utility facility primarily serving a public necessity as approved by the city and as reflected by a note on the recorded subdivision plat, these lots shall be exempt from the requirements of subsections (a) and (b) above.

(Ordinance CO33-14-03-06-C3 adopted 3/6/14)

Sec. 12.12.011 Lot sizes within the city limits

For subdivisions located inside the city limits, lot sizes shall conform to the standards of the zoning district within which the subdivision is located.

Sec. 12.12.012 Subdivision lots within the ETJ

(a) For subdivisions located in the ETJ where each lot within the proposed subdivision will be served by a state commission on environmental quality (TCEQ) approved public water supply and will utilize individual on-site sewage facility methods for sewage disposal, shall provide for individual lots having surface areas of at least one (1) acre.

(1) Criteria. A subdivision may be approved with rural standards if the following conditions are met:

(A) All lots shall be a minimum of one (1) acre;

(B) All lots shall have direct access to an approved public or private street or street right-of-way;

(C) All lots shall have a minimum twenty-five-foot front building setback;

(2) Standards.

(A) Streets may have either standard or ribbon curbs;

(B) Open channels may be utilized and shall be constructed in accordance with the drainage criteria manual;

(C) Sidewalks are required on one side of the street for all residential subdivisions comprised of four (4) lots or greater, for three (3) or fewer lots no sidewalks are required; and

(D) Streets shall be constructed in accordance with all applicable city codes and ordinances.

(b) For subdivisions located in the ETJ where each lot within the proposed subdivision will not be served by a TCEQ approved public water supply and will utilize individual on-site sewage facility methods for wastewater treatment, shall provide for individual lots having surface areas of at least two (2) acres.

(1) Criteria. A subdivision may be approved with rural standards if the following conditions are met:

(A) All lots shall be a minimum of two (2) acres;

(B) All lots shall have direct access to an approved public or private street or street right-of-way;

(C) All lots shall have a minimum fifty-foot front building setback;

(2) Standards.

(A) Streets may have either standard or ribbon curbs;

(B) Open channels may be utilized and shall be constructed in accordance with the drainage criteria manual;

(C) Sidewalks are required on one side of the street for all residential subdivisions comprised of four (4) lots or greater, for three (3) or fewer lots no sidewalks are required; and

(D) Streets shall be constructed in accordance with all applicable city codes and ordinances.

(c) For subdivisions located in the ETJ and within a municipal utility district the following criteria shall apply:

(1) Criteria.

(A) All lots shall be a minimum of seven thousand four hundred (7,400) square feet;

(B) All lots shall have a minimum width of sixty-five (65) feet and a minimum depth of one hundred ten (110) feet;

(C) All lots shall have a minimum twenty-five-foot front building setback;

(D) All lots shall have a minimum five-foot side setback and a minimum fifteen-foot side setback if adjacent to a public or private street; and

(E) All lots shall have a minimum ten-foot rear setback.

(2) Standards.

(A) Streets shall have raised curb and gutter;

(B) Open channels shall not be utilized;

(C) Sidewalks are required on both sides of all streets located in the subdivision; and

(D) Streets shall be constructed in accordance with all applicable city codes and ordinances.

Sec. 12.12.013 Maintenance of common areas, etc.

Any plat containing private common areas, landscape lots, detention lots, water quality lots and other lots for which no residential or commercial development is proposed, shall be noted on the plat as such and accompanied by a restrictive covenant to be recorded and referenced on the plat defining the responsibilities of the owner for maintenance, taxation and the use allowed on the lot.

Sec. 12.12.014 Building lines

(a) Each lot shall have a front twenty-five-foot front building setback line, which runs parallel to the property line.

(b) The front and rear building setback lines shall run between the side lot lines.

(c) The side building setback lines, and street side building setback lines for corner lots, shall extend from the front building setback line to the rear building setback line.

(d) The building setback line for each designated lot shall conform to the city's zoning ordinance, as currently amended. For developments outside the corporate limits of the city, but within the city's extraterritorial jurisdiction, building setback lines shall be consistent with similar uses as defined in the zoning ordinance.

(e) For purposes of these regulations related to building setback lines, both opposing frontages of a double frontage lot are treated as the "front." The building setback for the rear frontage (that is opposite of the front of the principle structure), or to which access is prohibited, shall only regulate the setback for the principle structure and shall not regulate the setback for covered porches or decks, swimming pools, accessory structures, etc. which, if within city limits, shall instead be regulated by the normal rear yard setback of the zoning ordinance.

Sec. 12.12.015 Driveways

(a) For single-family, duplex (two-family), and town home lots, residential driveways are permitted on local streets and local collector streets only. Residential driveways for double frontage lots and corner lots must be located on the lesser classification street. Driveways serving single-family, two-family or single-unit townhouse residences are not permitted on major or minor collectors or arterial streets unless the planning director determines no other access is possible.

(b) For condominium, multifamily and nonresidential lots, driveways are permitted on all streets; however, the driveways must have a minimum of two hundred (200) feet spacing between driveways and other streets on divided arterial roadways and three hundred (300) feet spacing between driveways and other streets on undivided arterial roadways.

(c) Driveway construction shall be in accordance with all applicable city codes and ordinances including chapter 14 site development ordinance.

(d) For all driveways and new streets proposed on state roadways, an approval letter is required from the state department of transportation (TxDOT) prior to plat approval.

Sec. 12.12.016 Signage, striping and signalization

(a) Signage and striping. The developer shall design, install and pay all costs for traffic control signs and pavement striping. Traffic control signs and pavement striping shall conform to the accepted construction plans and to the most recent edition of the "Texas Manual of Uniform Traffic Control Devices" a copy which is on file with the public works department.

(b) Signalization. The developer shall design, install and pay all costs for providing any required traffic signalization system identified in an approved TIA, including all related devices, conduits, wiring and junction boxes.

Sec. 12.12.017 Subdivision walls

(a) Walls required. Where subdivisions are platted so that the rear and/or side yards of residential lots are adjacent to a roadway located in the Corridor Overlay, major or minor arterial or higher classification street, the developer shall construct, at his/her sole expense, walls along said rear and/or side yards and said street, in accordance with the standards set forth below in subsection (b). Where said lots are corner lots, the wall requirements of this section shall take precedence over corner lot fencing specifications regulated by chapter 14 site development regulations of this code.

(b) Standards. It is intended that all walls erected pursuant to this section be constructed in such a manner to last thirty (30) years with minimal maintenance required during said period. All walls required by this section shall conform to the following minimum standards:

(1) Where applicable, materials and installation of walls shall comply with the most recent edition of "Selected ASTM Standards for Fence Materials and Products," a copy of which shall be maintained by the public works department and the planning department. Structural plans and specifications for walls shall be approved by the engineering department. Such plans and specifications are to be submitted at the same time as other construction plans required by this chapter. In approving said plans and specifications, the engineering department shall consider the site's soil characteristics, wind loadings and other environmental considerations.

(2) Walls shall be constructed of the following materials: brick, stone, split-faced or decorative concrete masonry unit (CMU), decorative reinforced concrete or other equivalent materials approved by the planning department, subject to the following:

(A) Wall pillars shall be constructed of masonry of sound structural integrity set in concrete with rebar support.

(B) Wall panels shall be constructed of brick, stone, split-faced or decorative concrete masonry unit (CMU), decorative reinforced concrete or other equivalent materials approved by the planning department. Panels shall be top capped as determined by the planning department.

(3) Walls shall be no greater than six (6) feet in height. The materials, color and design of walls shall be uniform within the area of an approved preliminary plan, unless otherwise approved by the planning department. A finished side of all walls shall face the thoroughfare.

(4) All walls shall be placed at least five (5) feet from any existing or proposed city water line.

(5) All walls required herein shall be placed on the lot or lots along the property line adjacent to the right-of-way.

(6) Should an active property owner's association or homeowner's association be in effect, it shall be the responsibility of the association to adequately maintain the fence and to prevent it from becoming unsightly or objectionable. Should an association no longer be active or default in its responsibility, it shall be the responsibility of any person, firm, or corporation who shall own or occupy any lot or lots on which a wall is constructed pursuant to the terms of this section to adequately maintain the wall and to prevent it from becoming unsightly or objectionable. The city shall not be responsible for the construction or maintenance of walls or fences required per this section.

Sec. 12.12.018 Traffic impact analysis (TIA)

(a) General principles.

(1) A TIA shall be submitted with a concept plan, preliminary plan, final plat or replat when the subdivision or addition will generate one hundred (100) or more vehicle trips, inbound or outbound, during the peak hour. The analysis shall be performed for the most intense use permitted in the existing or proposed zoning district. A scoping meeting is required.

(2) The TIA shall be prepared in accordance with the recommended guidelines for traffic impact studies as issued by the Institute of Transportation of Engineers, a copy of which is maintained by the planning department.

(3) The final plat or replat shall be prepared in conformance with the TIA and the concept plan or preliminary plan.

(4) Approved TIA. The developer must have a city-approved TIA prior to the approval of the final plat, if required.

(5) Off-site improvements. If off-site improvements are required in the TIA, the improvements shall be installed and constructed in accordance with all applicable city codes and ordinances.

(6) Signage and striping. If off-site signage and/or striping are required in the TIA, the signage and/or striping shall conform to all applicable city codes and ordinances.

(7) Signalization. If off-site signalization is required in the TIA, the signalization shall be installed with all applicable city codes and ordinances.

(8) Preliminary plan, final plat and replat TIA. The TIA submitted with a preliminary plan, final plat or a replat shall include any revisions to the TIA required for changes in the proposed development of the plat since the submission of the last TIA.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Sec. 12.12.019 Variances for design standards

(a) The planning and zoning commission may grant a variance from these regulations if it finds that all of the following are met:

(1) There are special conditions unique to the property, such as lot size, shape, orientation, topography, or other physical features, that are not generally characteristic of other properties in the area; and

(2) Due to these special conditions, strict application of this section would deprive the applicant of reasonable use of the property and result in an undue hardship; and

(3) The undue hardship is not self-induced or created by the applicant, nor is it strictly pecuniary/financial; and

(4) The variance is necessary for the preservation and enjoyment of substantial property rights of the applicant; and

(5) Granting of the variance will not be contrary to the public interest or detrimental to the public health, safety or welfare; and

(6) Granting of the variance will not have the effect of preventing the orderly development of the applicant's land and/or land in the vicinity in accordance with the provisions of this chapter; and

(7) Granting of the variance would be within the spirit of this chapter and would result in substantial justice.

(b) In granting a variance, the planning and zoning commission may impose such additional conditions if necessary and desirable in the public interest.

(c) Such findings of the planning and zoning commission, together with the specific facts upon which findings are based, shall be incorporated into the official minutes of the planning and zoning commission meeting at which such variance is granted.

(d) All requested variances from this chapter shall be made to the development services department in writing at least thirty (30) working days prior to the date on which consideration is to be given by the planning and zoning commission.

(e) The planning and zoning commission shall hold at least one public hearing on each application:

(1) Written notice of all public hearings on proposed variances shall be sent to all owners of property, or to the person rendering the same for city taxes, located within the area of application and within two hundred feet (200') of any property affected thereby, within not less than ten (10) days before such hearing is held. Such notice may be served by using the last known address as listed on the latest approved tax roll and depositing the notice, postage paid, in the United States mail.

(2) Notice of all public hearings on proposed variances shall also appear in the local newspaper of general circulation within not less than ten (10) days before such hearing is held.

(f) Positive action by the planning and zoning commission shall be recorded in the county clerk's office.

(Ordinance CO12-13-01-10-C2 adopted 1/10/13)

Sec. 12.12.020 Appeals

If the applicant disagrees with the action of the planning and zoning commission, he may appeal the decision to city council. The request for appeal must be made in writing within ten (10) days of the planning and zoning commission's decision.

ARTICLE 12.13 CONSTRUCTION STANDARDS

Sec. 12.13.001 Compliance

(a) In addition to the requirements established by this chapter, all development within the city limits shall be designed so as to comply with all applicable city codes and ordinances as well as the City of Austin Standards, except for environmental and utility; and all development within the extraterritorial jurisdiction of the city shall comply with this chapter and all applicable city/county codes and ordinances.

(b) A subdivision inspection fee shall be paid to the city for the inspection of subdivision improvements, including street, drainage, water, wastewater and revegetation improvements and erosion controls used during construction. The subdivision inspection fee shall be paid prior to the approval of plans and specifications by the public works department. The subdivision inspection fee shall be in accordance with the fee schedule found in appendix A of the city's code of ordinances.

Sec. 12.13.002 Construction plans

(a) Purpose. Construction plans, based upon the approved final plat, and consisting of detailed specifications and diagrams illustrating the location, design, and composition of all improvements identified in the preliminary plan phase and required by this chapter and other applicable city ordinances, codes and policies, shall be submitted to the city for approval. In addition, any project that necessitates the construction, reconstruction or modification of existing city infrastructure shall also be submitted to the city for approval. The plans shall be kept by the city as a permanent record of required improvements in order to:

(1) Provide better records that facilitate the operation and maintenance of, and any future modifications to existing city infrastructure.

(2) Provide data for evaluation of materials, methods of construction and design.

(3) Provide documentation of approved public improvements to ensure that all such improvements are built to city standards and specifications.

(4) No final plat shall be certified by the city, and no construction activities shall commence, until such time as construction plans completely describing the on-site and off-site improvements required by this chapter and other applicable city ordinances and codes, have been approved by the public works department.

(b) Format. Drawings shall be on twenty-two-inch by thirty-four-inch (22"x34") sheets at generally accepted horizontal and vertical engineering scales.

(c) Content. Construction plans shall include all on- and off-site improvements required to serve the proposed development as indicated on the approved preliminary plan and in compliance with applicable ordinances, codes, standards and policies of the city, and other applicable governmental entities. All construction plans shall be signed and sealed by a licensed professional engineer, licensed to practice in the State of Texas, and shall contain or have attached thereto:

(1) Cover sheet.

(A) The appropriate project name, date, and the name, addresses and phone numbers of the applicant, engineer and surveyor, etc.

(B) A location map showing the relation of the subdivision to streets and other prominent features in all directions for a radius of at least one (1) mile using a scale of one inch equals two thousand feet (1" = 2,000'). The latest edition of the USGS 7.5 minute quadrangle map is recommended.

(C) An index with consecutive sheet numbers.

(2) General notes. Current City of Cedar Park subdivision construction notes.

(3) Street and roadway systems.

(A) The horizontal layouts and alignments showing geometric data and other pertinent design details. The horizontal layout shall also show the direction of stormwater flow and the location of manholes, inlets and special structures;

(B) Vertical layouts and alignments showing existing and proposed centerline, right and left right-of-way line elevations along each proposed roadway.[;]

(C) Typical right-of-way cross-sections showing pertinent design details and elevations as prescribed in the city standard details and specifications;

(D) Typical paving sections showing right-of-way width, lane widths, median widths, shoulder widths, and pavement recommendations;

(E) Attendant documents containing any additional information required to evaluate the proposed roadway improvements, including geotechnical information and traffic impact studies; and

(4) Drainage improvements.

(A) Detailed design of all drainage facilities as indicated in the preliminary plan phase, including typical channel or paving section, storm sewers and other stormwater control facilities.

(B) Typical channel cross-sections, plan and profile drawings of every conduit/channel shall be shown.

(C) Existing and proposed topographic conditions indicating one-foot contour intervals for slopes less than 5%, two-foot contour intervals for slopes between five percent (5%) and ten percent (10%), and five-foot contour intervals for slopes exceeding ten percent (10%), and referenced to a United States Geological Survey or Coastal and Geodetic Survey benchmark or monument.

(D) Attendant documents containing design computations in accordance with this chapter, and any additional information required to evaluate the proposed drainage improvements.

(E) A copy of the complete application for floodplain map amendment or revision, as required by the Federal Emergency Management Agency (FEMA), if applicable.

(5) Erosion and sedimentation controls.

(A) Proposed fill or other structure-elevating techniques, levees, channel modifications and detention facilities.

(B) Existing and proposed topographic conditions with vertical intervals not greater than one (1) foot referenced to a United States Geological Survey or Coastal and Geodetic Survey benchmark or monument.

(C) The location, size, and character of all temporary and permanent erosion and sediment control facilities with specifications detailing all on-site erosion control measures which will be established and maintained during all periods of development and construction.

(D) Contractor staging areas, vehicle access areas, temporary and permanent spoils storage areas.

(E) A plan for restoration for the mitigation of erosion in all areas disturbed during construction.

(6) Water distribution systems.

(A) The layout, size and specific location of the existing and proposed water mains, pump stations, storage tanks and other related structures sufficient to serve the proposed land uses and development as identified in the preliminary plan phase and in accordance with the city standard details and specifications.

(B) The existing and proposed location of fire hydrants, valves, meters and other fittings.

(C) Design details showing the connection with the existing city water system.

(D) The specific location and size of all water service connections for each individual lot.

(E) Attendant documents containing any additional information required to evaluate the proposed water distribution system.

(7) Wastewater collection systems.

(A) The layout, size and specific location of the existing and proposed wastewater lines, manholes, lift stations, and other related structures sufficient to serve the land uses and development as identified in the preliminary plan phase, in accordance with all current city standards, specifications, and criteria for construction of wastewater systems.

(B) Plan and profile drawings for each line in public rights-of-ways or public utility easements, showing existing ground level elevation at centerline of pipe, pipe size and flow line elevation at all bends, drops, turns, and station numbers at fifty-foot intervals.

(C) Design details for manholes and special structures. Flow line elevations shall be shown at every point where the line enters or leaves the manholes.

(D) Detailed design for lift stations, package plants or other special wastewater structures.

(E) Attendant documents containing any additional information required to evaluate the proposed wastewater system, and complete an application for state health department approval.

(8) Street lighting.

(A) The location, size, type and description of street lights according to city standard details and specifications.

(B) All electric service lines to serve street lights shall be located entirely within the city's right-of-way, unless approved in writing by the director of engineering or his/her designee.

(9) Street signs. The location, size, type and description of street signs according to city standard details and specifications.

(10) Speed limit signs and permanent traffic barricades. The location, size (where applicable), and type of speed limit signs and permanent traffic barricades according to city standard details and specifications.

(11) Sidewalks.

(A) All sidewalks shall be designed and constructed in accordance with city standard details and specifications, transportation criteria manual, transportation master plan and any other applicable city codes and ordinances[.]

(b) Sidewalks associated with a residential subdivision that are not located adjacent to a residential lot are required to be built by the developer at the same time as the subdivision improvements.

(C) Sidewalks associated with a residential subdivision that were not built with the subdivision improvements and are adjacent to residential lots are required to be built by the homebuilder.

(D) Sidewalks associated with commercial development are required to be constructed on all sides of all streets within and immediately adjacent to the proposed development.

(12) Improvements for parks and other public and common areas. As identified and/or approved on the preliminary plan.

(13) The location, size and description of all significant trees (to remain and to be removed), and replacement trees to meet the requirements of landscape and tree ordinance.

(14) Landscaping and screening. The location, size and description of all landscaping and screening materials as required by the zoning ordinance and landscape and tree ordinance.

(15) Design criteria. Final design criteria, reports, calculations, and all other related computations, if not previously submitted with the preliminary plan.

(16) Cost estimates. A cost estimate of each required improvement, prepared, signed and sealed by a professional engineer licensed to practice in the State of Texas.

(d) Procedure. After all necessary approvals of the preliminary plan have been granted, construction plans, together with a completed application form and review fee, shall be submitted to the public works department for approval.

(1) Construction plans may be submitted for review and approval simultaneously with a final plat, provided however that the final plat shall not be approved until the construction plans have been approved. If the construction plans and the final plat are to be reviewed simultaneously, a complete application for construction plans and a complete application for final plat must be submitted to the city simultaneously.

(2) City staff shall review all construction plan submittals for completeness at the time of application. If in the judgment of the city, the construction plan submittal substantially fails to meet the minimal informational requirements as outlined above, it will not be accepted for review.

(3) The engineering department shall review the construction plans to insure compliance with this chapter, and other applicable city ordinances, codes, standards and specifications, and good engineering practices.

(4) For projects located within the city's extraterritorial jurisdiction, the construction plans and attendant documents shall also be provided to the county for review and approval. The applicant shall be responsible for any additional information required by the county for construction plan approval.

(5) For projects located within the Lake Travis watershed, the construction plans shall be provided to the city for compliance with the Lake Travis and Upper Highland Lakes Nonpoint Source Pollution Control Ordinance.

(e) Approval. Within thirty (30) days of the date on which all required information has been accepted for review, the public works department shall either approve or disapprove the construction plans.

(1) If the construction plans are disapproved, the public works department shall notify the applicant, in writing, of disapproval and indicate the requirements for bringing the construction plans into compliance.

(2) If construction plans are approved, then the public works department shall sign the cover sheet of the construction plans, returning one (1) signed copy to the applicant and retaining the other signed copy for city records.

(3) The applicant should be aware that specific approvals from other agencies may be required.

(4) All improvements shown in the approved construction plans shall be constructed pursuant to and in compliance with the approved plans, except as otherwise specifically approved.

(f) Revision. Where it becomes necessary, due to unforeseen circumstances, for corrections to be made to construction plans for which approval has already been obtained, the public works department shall have the authority to approve such corrections when, in his/her opinion, such changes are warranted and also in conformance with city requirements. Approval of such changes agreed to between the applicant and public works department shall be noted by initialing and dating by both parties on the two (2) original signed copies of the construction plans. Revisions to the construction plans shall be reviewed and approved by the public works department prior to construction of the revisions.

(g) Responsibility. Notwithstanding the approval of any construction plans by the council, the engineering department, the applicant and the engineer that prepares and submits such plans and specifications shall be and remain responsible for the adequacy of the design of all such improvements; and nothing in this chapter shall be deemed or construed to relieve or waive the responsibility of the applicant or his/her engineer for or with respect to any design, plans and specifications submitted.

(Ordinance CO42-07-07-12-3I adopted 7/7/12)

ARTICLE 12.14 PRIVATE STREETS AND GATED SUBDIVISIONS

Sec. 12.14.001 Use of private streets

Private streets and alleys in lieu of public streets and alleys may be used providing that the development complies with the requirements of this article. The term private street shall include alleys.

Sec. 12.14.002 Design and construction standards

(a) Private streets shall be designed in accordance with the design standards of this chapter, and all other applicable standards as prescribed by the city.

(b) All alleys, sidewalks, drainage facilities, storm sewer lines, water and wastewater lines, street lighting, signage, markings and related improvements shall be designed, placed and constructed in accordance with the city's general design standards, as amended.

Sec. 12.14.003 Streets excluded

(a) Streets designated on the transportation master plan as a major arterial or minor arterial shall not be used, maintained or constructed as private streets.

(b) The planning and zoning commission may deny the creation of a private street if it makes a finding of fact, based upon the evidence provided, that it would:

(1) Negatively affect traffic circulation on public streets; or

(2) Impair access to property either on site or off site of the subdivision; or

(3) Impair access to or from public facilities including schools, parks and libraries.

Sec. 12.14.004 Property owners association

(a) Subdivisions developed with private streets shall establish a mandatory property owners association and shall record applicable deed restrictions and association documents concurrent with the recordation of the final plat. The association shall own and be responsible for the maintenance of the private streets and related improvements including but not limited to alleys, sidewalks, drainage facilities, storm sewer lines, water and wastewater lines, street lighting, signage and markings. Lot deeds shall convey membership in the association and provide for the payment of dues and assessments required by the association in order to provide for the continuous maintenance of the facilities. The association may not be dissolved, and no portion of the association documents pertaining to this section may be amended without the written consent of the city.

(b) The property manager shall be required to maintain and file a fidelity bond. The name of the association's president shall be submitted to the public works department and updated as needed.

(c) The following notice shall appear in bold print on each deed to property in the subdivision, on the plat of the subdivision and on each contract on the sale of land within the subdivision:

> Notice: The lots within this subdivision are governed by a property owners association requiring the payments of fees and/or assessments for the maintenance of private streets. Failure to pay fees or assessments could result in attachment of a lien on your property by the association or by the city.

(d) The association documents shall establish a reserve fund for the maintenance of private streets and other improvements, and contain provisions for reliable access to provide city services and to other utility service providers with appropriate identification. A reserve fund balance report shall be submitted to the public works department annually to ensure that adequate fund reserves are being maintained for future repairs and/or replacement costs of the private streets and related improvements.

(e) A professional engineer for the developer shall provide a projected maintenance schedule and an estimate of the annual costs required to repair and maintain the private streets. The information shall be the basis for the annual reserve fund balance report.

(f) In the event the association fails to maintain the streets in accordance with city standards, the city may repair and maintain the streets and charge the cost to the association. If the association fails to pay for the maintenance cost, after notice to the property owners, the costs shall be filed as a lien on all property within the subdivision.

(g) There shall be included on the final plat a statement confirming compliance of all association documents with applicable city ordinances, and all association documents shall be filed concurrent with the recordation of the final plat.

Sec. 12.14.005 Private streets and easements

(a) Private streets shall be constructed within a designated separate lot or lots owned by the property owners association. Every lot shall have frontage on, and access to, said lot or lots in lieu of a public street.

(b) An easement encompassing the lot shall be granted to the city providing unrestricted use of the property for utilities and their maintenance. The right shall extend to all utility providers, including telecommunication companies operating within the city. The easement shall also provide the city with the right of access for any purpose related to the exercise of a governmental service or function, including but not limited to fire and police protection, inspection, animal control and code enforcement. The easement shall permit the city to remove any vehicle or obstacle within the lot that impairs emergency access.

Sec. 12.14.006 Construction and maintenance cost

The city shall not be responsible for any portion of the cost of constructing or maintaining a private street, including but not limited to street lighting, traffic signs, sidewalks and sidewalk ramps, and pavement markings.

Sec. 12.14.007 Utilities

Water, wastewater, drainage facilities, and water meters shall be placed within the "street lot" and shall be dedicated to the city upon final acceptance of the subdivision by the city.

Sec. 12.14.008 Improvements and inspections

(a) Developments proposed with private streets shall comply with article 12.13, construction standards, of the comprehensive subdivision ordinance. In lieu of the two-year maintenance bond provided to the city from the contractor in the amount of one hundred ten percent (110%) of the contract price for the street, such period measured from the date of the issuance of a letter of acceptance by the engineering department, the bond shall be issued to the property owners association.

(b) The city may periodically inspect private streets and require repairs necessary to ensure emergency access.

Sec. 12.14.009 Signs

All private traffic signs and markings shall conform to the Texas Manual on Uniform Traffic-Control Devices. The entrances to all private streets shall be marked with a sign stating that it is a private street.

Sec. 12.14.010 Access provisions

(a) Guard houses, access-control gates and crossarms shall be constructed within the "street lot." All restricted access entrances must be provide[d] a means of ensuring access to the subdivision by the city and other utility service providers.

(b) If the association fails to maintain reliable access as required to provide city services, the city may enter the subdivision and remove any gate or device, which is a barrier to access at the sole expense of the association, as provided for in the association documents.

Sec. 12.14.011 Entrance design standards

(a) Any private street with an access-control gate shall have a minimum uninterrupted pavement width of twenty-four (24) feet at the location of the access-control device. All restricted access gates shall be approved by the fire department and meet access requirements for emergency vehicles and shall not obstruct pedestrian pathways[.]

(b) Overhead barriers shall not be allowed.

(c) Internal storage for three (3) vehicles shall be provided between the public right-of-way line and the point of the access-control device.

(d) A turnaround area with a radius of forty (40) feet between the point of the access-control device and the access gate shall be provided to allow a vehicle which is denied access to safely turnaround and exit onto a public street.

(e) On lots adjacent to access gates, screening walls may exceed thirty (30) inches in height, up to a maximum of six (6) feet within the front yard setback of the adjacent lot. Such wall shall be constructed of wrought iron with brick columns. Solid fencing panels shall not be allowed.

Sec. 12.14.012 Waiver of services

The subdivision final plat, property deeds and property owner association documents shall note that certain city services shall not be provided on private streets. Among the services, which will not be provided, are: regular street maintenance, with the exception of street sweeping at a frequency consistent with other subdivisions, routine police patrols, enforcement of traffic and parking ordinances and preparation of accident reports. Depending on the characteristics of the proposed development other services may not be provided.

Sec. 12.14.013 Petition to convert to public streets

(a) The property owners association documents shall allow the association to request the city to accept private streets and alleys and the associated property as public streets and right-of-way upon written notice to all association members and upon the favorable vote of fifty-one percent (51%) of the membership.

(b) Nothing herein shall be construed to require the city's acceptance of private streets as public, and in no event shall the city accept private streets as public unless said streets have been constructed and maintained to city standards. Should the city elect to accept private streets as public, the city may inspect the private streets and assess the lot owners for the expense of needed repairs concurrent with the city's acceptance of the streets and alleys.

(c) The city shall be the sole judge of whether repairs are needed. The city may also require, at the association's expense, the removal of guardhouses, access-control devices, landscaping or other aesthetic amenities located within the street lot, and/or replacement of any noncompliant improvements. The association documents shall provide for the city's right to such assessment. Those portions of the association documents pertaining to the subject matter contained in this section shall not be amended without the written consent of the city.

Sec. 12.14.014 Hold harmless

(a) Language shall be placed on the subdivision final plat whereby the property owners association, as owner of the private streets and appurtenance, agrees to release, indemnify, defend and hold harmless the city, any governmental entity and public utility for damages to the private street occasioned by the reasonable use of the private street by the city, governmental entity or public utility; for damages and injury (including death) arising from the condition of said private street; for damages and injury (including death) arising out of the use by the city, governmental entity or public utility of any restricted access gate or entrance; and for damages and injury (including death) arising out of any use of the subdivision by the city, government entity or public utility.

Further, such language shall provide that all lot owners shall release the city, governmental entities and public utilities for such damages and injuries. The indemnification contained in this paragraph apply regardless of whether or not such damages and injury (including death) are caused solely by the negligent act or omission of the city, governmental entity or public utility, or their representative officers, employees or agents.

(b) The property owners association shall provide general liability insurance in the amount of not less than $500,000.00 per occurrence and $1,000,000.00 aggregate. Such insurance shall protect the property owners association and city from any claim, suit or demand resulting from any activity by the city within the subdivision, including the operation, maintenance or repair of water, sewer and drainage facilities. The insurance shall be occurrence based and name the city an additional insured. The insurance shall not include any exclusions that would deny coverage from the operation of sewer lines.

(c) A signed certificate of insurance, satisfactory to the city, showing compliance with the requirements of this section shall be furnished to the city at the time all improvements are accepted by the city. Such certificate shall provide thirty-day written notice to the city prior to the cancellation or modification of any insurance referred to therein. Language shall be placed on the subdivision final plat indicating that a signed certificate of insurance shall be furnished to the city which complies with this article.

(Ordinance CO16-14-01-09-C1 adopted 1/9/14)

ARTICLE 12.15 ASSURANCES FOR COMPLETION OF IMPROVEMENTS

Sec. 12.15.001 Purpose

The provisions of this chapter, as set forth in this section, are designed and intended to insure that, for all subdivisions of land within the jurisdiction of the city, all improvements as required herein are installed in a timely manner in order that:

(1) The city can provide for the orderly and economical extension of public facilities and services.

(2) All purchasers of property within the subdivision shall have a usable, buildable parcel of land.

(3) All required improvements are constructed in accordance with the city standard details and specifications.

Sec. 12.15.002 Policy

(a) Policy. Upon approval of a final plat by the planning and zoning commission, and prior to it being signed by the chairperson of the planning and zoning commission and the planning director, and before said final plat shall be allowed to be recorded in the plat records of the county, the applicant requesting final plat approval shall, within the time period for which the final plat has been conditionally approved by the city:

(1) Construct all improvements as required by this chapter, and provide a surety instrument guaranteeing their maintenance as required herein; or

(2) Provide a surety instrument guaranteeing construction of all improvements required by this chapter, and as provided for herein.

(3) In all instances, the original copy of the final plat, without benefit of required signatures of city officials, shall be held in escrow by the city and shall not be released for any purpose until such time as the conditions of this section are complied with.

(4) Upon the requirements of this section being satisfied, the final plat shall be considered fully approved, except as otherwise provided for in this chapter, and the original copy of the final plat shall be signed by the appropriate city officials and city staff shall file said final plat in the plat records of the county.

Sec. 12.15.003 Completion of improvements

(a) Prior to the signing of the approved final plat by the chairman of the planning and zoning commission and the planning director, the applicant shall:

(1) Complete all improvements required by this chapter in accordance with the approved construction plans and subject to the approval of the engineering department and acceptance by the city council, except as otherwise provided for in this chapter.

(2) Construct all sidewalks as shown on the approved construction plans and according to the city standard details and specifications. Sidewalks must be constructed and approved for each lot prior to issuance of a certificate of occupancy.

(b) Alternative to completing improvements. The city may waive the requirement that the applicant complete all improvements required by this chapter prior to the signing of the approved final plat, contingent upon securing from the applicant a guarantee, as provided for by this section, for completion of all required improvements, including the city's cost for collecting the guaranteed funds and administering the completion of improvements, in the event the developer defaults. The planning and zoning commission and council must be notified that this waiver was granted at the time of preliminary plan approval. Such guarantee shall take one (1) of the following forms:

(1) Performance bond. The applicant shall post a performance bond with the city, as set forth herein, in an amount equal to one hundred ten percent (110%) of the estimated construction costs for all remaining required improvements, using the standard city form.

(2) Escrow account. The applicant shall deposit cash, or other instrument readily convertible into cash at face value, either with the city, or in escrow with a bank or savings and loan institution. The use of any instrument other than cash shall be subject to the approval of the city. The amount of the deposit shall equal one hundred ten percent (110%) of the estimated construction costs for all remaining required improvements. In the case of any escrow account, the applicant shall file with the city an agreement between the financial institution and the applicant guaranteeing the following:

(A) that the funds of said escrow account shall be held in trust until released by the city and may not be used or pledged by the applicant as security in any other matter during that period.

(B) That in the case of a failure on the part of the applicant to complete said improvements, the financial institution shall immediately make the funds in said account available to the city for use in the completion of those improvements.

(3) Letter of credit. The applicant shall provide a letter of credit from a bank or other reputable institution or individual. This letter shall be submitted to the city and shall certify the following:

(A) That the creditor does guarantee funds equal to one hundred ten percent (110%) of the estimated construction costs for all remaining required improvements.

(B) That, in the case of failure on the part of the applicant to complete the specified improvements within the required time period, the creditor shall pay to the city immediately, and without further action, such funds as are necessary to finance the completion of those improvements, up to the limit of credit stated in the letter.

(C) That this letter of credit may not be withdrawn, or reduced in amount, until approved by the city according to provisions of this chapter.

(4) Cost estimates. A licensed professional engineer licensed to practice in the State of Texas shall furnish estimates of the costs of all required improvements to the city engineer who shall review the estimates in order to determine the adequacy of the guarantee instrument for insuring the construction of the required facilities.

(5) Surety acceptance. The bank, financial institution, insurer, person or entity providing any letter of credit, bond or holding any escrow account, pursuant to this chapter, shall meet or exceed the minimum requirements established by city ordinance and shall be subject to approval by the city as provided in the ordinances of the city.

(6) Sufficiency. Such surety shall comply with all statutory requirements and shall be satisfactory to the city attorney as to form, sufficiency, and manner of execution as set forth in this chapter. All such surety instruments shall be both a payment and performance guarantee.

(7) If the project is located in the extraterritorial jurisdiction of the city, and is subject to the bonding requirements of the county for the construction of roadways, then that amount of money shall be reduced from the amount required to be posted with the city, provided that the instrument is transferable from the county to the city upon annexation.

(c) Time limit for completing improvements. The period within which required improvements must be completed shall be incorporated in the surety instrument and shall not in any event, without prior approval of the city, exceed one (1) year from date of final plat approval.

(1) The planning and zoning commission may, upon application of the applicant and upon proof of hardship, recommend to the council extension of the completion date set forth in such bond or other instrument for a maximum period of one (1) additional year. Such hardship may include delays imposed due to city projects. An application for extension shall be accompanied by an updated estimate of construction costs prepared by a licensed professional engineer, licensed to practice in the State of Texas. A surety instrument for guaranteeing completion of remaining required improvements must be filed in an amount equal to one hundred ten percent (110%) of the updated estimate of construction costs as approved by the city engineer.

(2) The council may at any time during the period of such surety instrument accept a substitution of principal sureties upon recommendation of the planning and zoning commission.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

(d) Assurances for completion shall be posted or improvements shall be completed within two (2) years of final plat approval, unless otherwise approved by the city. In those cases where a surety instrument has been required and improvements have not been completed within the terms of said surety instrument, the city may declare the applicant and/or surety to be in default and require that all the improvements be installed. (Ordinance CO10-15-01-08-C1 adopted 1/8/15)

(e) Inspection and acceptance of improvements. The engineering department shall inspect all required improvements, to insure compliance with city requirements and the approved construction plans.

(1) When all required improvements have been satisfactorily completed, the engineering department shall either:

(A) Accept, in writing, the improvements as having been satisfactorily completed, or

(B) Issue a punch list to the applicant denoting items remaining to be completed.

(2) The engineering department shall have ten (10) working days to complete this inspection upon notification by the applicant.

(3) The engineering department shall issue the report within ten (10) working days of the date of inspection.

(4) The city shall not accept dedications of required improvements or release or reduce a performance bond or other assurance until such time it is determined that:

(A) All improvements have been satisfactorily completed.

(B) One (1) Mylar set of as-built plans measuring twenty-two by thirty-four (22 x 34) inches has been submitted to and approved by the engineering department, along with a statement prepared by a licensed professional engineer that all improvements have been installed and constructed in accordance with the submitted as-built plans.

(C) Copies of all inspection reports, shop drawings and certified test results of construction materials have been submitted to and approved by the engineering department.

(D) Two (2) copies of maintenance bonds meeting the requirements of this chapter have been provided.

(E) Electronic copy containing computed generated Auto CAD drawings of all public improvements shown on the construction plans, and all lot lines shown on the plat, have been submitted to the engineering department to update city maps.

(F) An affidavit of all bills paid and a release of liens have been provided.

(G) Documentation is provided from TDLR that the improvements are acceptable.

(H) Any and all other requirements identified in the final plat process have been satisfied.

(5) The applicant shall provide a certificate of compliance from the state department of licensing and regulation for all pedestrian improvements within the subdivision.

(f) Reduction or release of improvement surety instrument.

(1) A surety instrument may be reduced with the approval of the engineering department, and the director of finance, upon actual construction of required improvements by a ratio that the improvement bears to the total public improvements required for the subdivision, as determined by the public works department.

(2) Before the city shall reduce said surety instrument, the applicant shall provide a new surety instrument in an amount equal to one hundred ten percent (110%) of the estimated cost of the remaining required improvements, and such new surety instrument shall comply with this engineering.

(3) The substitution of a new surety instrument shall in no way change or modify the terms and conditions of the performance surety instrument or the obligation of the applicant as specified in the performance surety instrument.

(4) In no event shall a surety instrument be reduced below ten percent (10%) of the principal amount of the original estimated total costs of improvements for which surety was given, prior to completion of all required improvements.

(5) The city shall not release a surety instrument unless and until all the conditions of this chapter have been met.

(g) Maintenance bond required.

(1) Before the release of any surety instrument guaranteeing the construction of required subdivision improvements, or the signing of the final plat where subdivision improvements were made prior to the filing of the final plat for recordation, the developer shall furnish the public works department with a maintenance bond or other surety to assure the quality of materials, workmanship, and maintenance of all required improvements including the city's costs for collecting the guaranteed funds and administering the correction and/or replacement of covered improvements.

(2) The maintenance bond or other surety instrument:

(A) Shall be satisfactory to the city attorney as to form, sufficiency, and manner of execution.

(B) Shall clearly state both the applicant and the city as joint obligees.

(C) Shall cover all facilities requested for city acceptance, including water, wastewater, street and drainage improvements.

(D) Shall be in an amount equal to 10% of the cost of improvements for the two (2) calendar years from the date of city council acceptance of operation and maintenance of the subdivision. A statement of construction value or final pay estimate shall be provided to the engineering department to support said warranty and maintenance bond amounts.

(E) Shall require the surety to notify the city at least fifteen (15) days prior to the end of the calendar year[.]

(3) In an instance where a maintenance bond or other surety instrument has been posted and a defect or failure of any required improvement occurs within the period of coverage, the city may declare said bond or surety instrument to be in default and require that the improvements be repaired or replaced.

(4) Whenever a defect or failure of any required improvement occurs within the period of coverage, the city shall require that a new maintenance bond or surety instrument be posted for a period of two (2) full calendar years sufficient to cover the corrected defect or failure.

ARTICLE 12.16 STORMWATER MANAGEMENT

Sec. 12.16.001 Purpose

The purpose of this section is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public within this jurisdiction. This section seeks to meet that purpose through the following objectives.

(1) Manage and control stormwater runoff in a safe and economical manner in developing areas for the purpose of promoting the health, safety and general welfare of the population, and for the protection of property.

(2) Protect the citizens of Cedar Park by preventing dangers arising from improper drainage facilities, inadequate construction of drainage facilities and unwise diversion, use and obstruction of waterways and planning for the present and future use of waterways through the establishment of regulations governing development on and adjacent to the waterways.

(3) Limit the alteration of the native waterways to prevent unnecessary destruction of the natural beauty, character and economic value their existence provides to the city.

(4) Minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the predevelopment hydrologic regime to the maximum extent practicable.

(5) Provide for stormwater storage within the city where detention/retention basin facilities have been determined to be beneficial in reducing the peak runoff to subservient lands.

(6) Reduce stormwater runoff rates and volumes through stormwater management controls and ensure that these management controls are properly maintained and pose no threat to public safety.

Sec. 12.16.002 Applicability

The provisions of this section shall apply to all major subdivision and/or site development activities requiring land use permits and approvals within the city limits and the extraterritorial jurisdiction of the city, unless otherwise excluded within this section. The section also applies to land development activities that are smaller than the maximum square footage exempted if such activities are part of a larger common plan of development. In addition, all plans must also be reviewed by either TCEQ (if located within the Edwards Aquifer contributing and/or recharge zones) or the city on behalf of LCRA (if located within the Lake Travis Watershed) to ensure that established water quality standards will be maintained during and after development of the site.

Sec. 12.16.003 Exemptions

(a) The following situations are exempt from the requirements of this section:

(1) Agricultural use of land;

(2) Additions or modifications to existing single-family structures;

(3) Development or redevelopment projects whereby no more than one thousand (1,000) square feet of additional or new impervious cover is created, provided they are not part of a larger common development plan;

(4) Emergencies posing an immediate danger to life or property, or substantial flood or fire hazards;

(5) Areas deemed appropriate by the director of engineering or his/her designee.

Sec. 12.16.004 Right of entry

The director of engineering or his/her designated representatives may enter upon any property which discharges or contributes, or is believed to discharge or contribute, to stormwater runoff or the stormwater system, stream, natural drainageway, or other stormwater system during all reasonable hours to monitor, remove foreign objects or blockages, and to inspect for compliance with the provisions of the chapter.

Sec. 12.16.005 Adoption of City of Austin Drainage Criteria Manual

There is hereby adopted by the City of Cedar Park for the purpose of establishing rules and regulations for the design, development, construction, alteration, enlargement, repair, conversion, equipment, use, height, area and maintenance of drainage improvements, that certain codes recommended by the City of Austin Drainage Criteria Manual, being the most current edition thereof, and the whole thereof, as amended from time to time, including later editions, except such portions as are hereinafter amended, deleted or modified by the City of Cedar Park. One (1) copy of said code is now on file in the office of the city secretary, and the same is hereby adopted and incorporated as fully as if set out at length herein, and the same shall be controlling in the design, development, and construction of all drainage improvements within the city limits and extraterritorial jurisdiction of the City of Cedar Park, Texas.

Sec. 12.16.006 Obstructions to waterways generally

Except as authorized by an approved site plan, no person shall place or cause placement of any obstruction of any kind in any waterway within the city. The owner, agent, lessor, or other person in control of any property within the city, through which any waterway may pass, shall keep the waterway free from any obstruction not authorized by a site plan; and any pool of standing water which is formed in any waterway within the city on account of any unauthorized obstruction shall be deemed and same is hereby defined to be a nuisance.

Sec. 12.16.007 Standards for approval of plats and site plans

(a) No final plat, subdivision construction plan, or site plan shall be approved unless:

(1) The proposed final plat, subdivision construction plan, or site plan provides a sufficient waterway for the design flood, determined in accordance with the drainage criteria manual;

(2) Any proposed improvements are of sufficient strength to resist any pressure of earth or building from the outside and pressure or abrasion of water and debris from the inside;

(3) All proposed grades are such that water will not gather in pools which may become stagnant or foul;

(4) The proposed development will not result in additional identifiable adverse flooding of other property;

(5) Both temporary and permanent erosion control measures are adequate to minimize siltration of the waterway as approved by the engineering department.

(b) The fiscal security required under chapter 12, article 12.05, section 12.05.004 [sic], shall be made sufficient to cover the cost of:

(1) Installing and maintaining erosion and sedimentation controls throughout construction;

(2) Revegetation;

(3) On and off-site cleanup; and

(4) Remedying any erosion damage resulting from development pursuant to this permit.

(c) The fiscal security shall insure the installation, maintenance, performance, and/or remedy of the following, without cost to the city, in the event the applicant fails to:

(1) Install or maintain adequate erosion and sedimentation controls;

revegetate;

(2) Perform on and off-site cleanup; or

(3) Remedy erosion damage.

Sec. 12.16.008 Additional standards for approval of site plans

(a) In addition to the requirements of sec. 12.16.007, no site plan for property within the zoning jurisdiction of the city shall be approved if a proposed building shown on the site plan encroaches in the one-hundred-year floodplain, as the same is calculated to exist under fully developed conditions, in accordance with the drainage criteria manual.

(b) Subsection (a) shall not apply to construction of a parking area of less than 5,000 square feet or an unoccupied structure of less than 1,000 square feet where the engineering department has determined the proposed development does not have an adverse effect on the floodplain or surrounding properties and is otherwise in compliance with the requirements of this chapter.

(c) The engineering director or his/her designee shall have the discretion to approve a site plan for construction, notwithstanding noncompliance with the conditions set forth in this section, when the applicant submits a written request specifying the conditions requested to be waived, accompanied by a detailed justification signed and sealed by a Texas registered professional engineer certifying that the request will not result in additional adverse flooding of other property, and the engineering director or his/her designee determines that the request constitutes a minimum departure from the conditions set forth in this section, that such departure is necessitated by the unique conditions of the site, and that such departure does not create an adverse flooding condition for other properties.

(d) No proposed parking area shall encroach upon the one-hundred-year floodplain, as the same is calculated to exist under fully developed conditions in accordance with the drainage criteria manual unless:

(1) The level of water detention or waterflow in such parking area during the 100-year storm exceeds neither an average depth of eight inches (8") nor a maximum depth at any point of twelve (12) inches; and

(2) Appropriate notice signs, as approved by the public works department are posted if any water detention or water flow in such parking area may exceed a depth of eight (8) inches at any point.

(3) No building or parking lot construction shall encroach upon the twenty-five-year floodplain, as the same is calculated to exist under fully developed conditions in accordance with the drainage criteria manual.

Sec. 12.16.009 Drainage studies and floodplain delineations

(a) The owner of property to be developed may be required by the engineering department to provide, at the owner's expense and as a condition for preliminary plan approval, a drainage study for the total area to be ultimately developed. The study shall be in accordance with the drainage criteria manual, and shall be submitted to the department for approval prior to the acceptance for review of any construction plans for any portion of the development.

(b) If any portion of a proposed development is included within a floodplain or floodway delineation accepted or recognized by the city, such delineation shall be clearly shown on all preliminary plans, subdivision construction plans, and final plats submitted for approval.

(c) The engineering department shall designate and maintain official floodplain maps. In any case in which official floodplain maps are not available, the owner of property to be developed shall designate the boundaries of the one-hundred-year floodplain in accordance with the drainage criteria manual and shall clearly show such on all preliminary plans, subdivision construction plans, and final plats submitted for approval.

Sec. 12.16.010 Approval required

On any lot designated on a plat or subdivision construction plan as requiring completion or partial completion of drainage improvements prior to any building construction, no building permit or certificate of compliance shall be issued for the lot until the engineering department has approved the issuance of the permit or certificate.

Sec. 12.16.011 Stormwater drainage facilities

(a) Computation of stormwater runoff shall be based on a fully developed contributing drainage area or watershed and shall be in accordance with the drainage criteria manual.

(b) Easements or rights-of-way shall be dedicated by the owner of the property to be developed to the public for the purpose of containing all drainage facilities, open or enclosed, and all stormwater flows to the limits of the one-hundred-year floodplain as determined in accordance with subsection (a). No easement or right-of-way for such purposes shall be less than twenty-five (25) feet in width for open drainage systems or fifteen (15) feet for enclosed drainage systems. Additional easements or right-of-way shall be provided as necessary to allow continuous access for operation, maintenance, and rehabilitation of all drainage facilities. Any part of a lot or tract of land contained within such easement or right-of-way may be counted as part of the area of the lot or tract of land for the purposes of density and impervious cover calculations.

(c) Within any street right-of-way, an enclosed storm sewer system shall be required to accommodate that portion of the design flow which exceeds street capacities in accordance with the drainage criteria manual.

(d) The design and construction of all drainage facilities and improvements shall be in accordance with the drainage criteria manual and shall include provisions for maintenance and protection from erosion.

Sec. 12.16.012 Requirements for manholes when covered

Whenever any creek, drainageway, or watercourse is covered, manholes not less than two (2) feet in diameter, with removable covers, shall be installed in accordance with the drainage criteria manual. All such work shall be done under the supervision of the engineering department and shall be subject to inspection at any time by officers and employees of the city.

Sec. 12.16.013 Responsibility for stormwater drainage facilities

(a) The owner or developer of property to be developed shall be responsible for the conveyance of all stormwater flowing through the property. This responsibility includes the stormwater directed to the property by any developed property as well as the drainage naturally flowing through the property by reason of topography. Future upstream development shall be accounted for in accordance with the drainage criteria manual.

(b) Where the improvement or construction of a storm drainage facility is required along a property line common to two (2) or more owners, the owner proposing development of property shall be responsible for all required improvements on each side of the common property line, regardless of ownership, at the time of development, including the dedication by the legal owners of all necessary rights-of-way or easements to accommodate the improvements.

(c) Where a property owner proposes development of only a portion of the property, stormwater drainage facilities shall only be required in that portion of the property proposed for immediate development or use unless construction or improvement of a drainage facility outside that portion of the property is deemed essential to the development or use of that portion.

(d) The owner or developer shall provide adequate off-site drainage improvements to accommodate the full effects of the development. The owner or developer shall make adequate guarantees that she or he will finance the full cost of acquiring said property rights and shall retain full cost of acquiring said property rights and shall retain full responsibility for construction of the required off-site improvements.

(e) All detention basins and appurtenances which receive stormwater runoff from commercial or multifamily development shall be maintained by the record owner in accordance with the maintenance standards in the drainage criteria manual.

Sec. 12.16.014 Curbs and gutters

Curbs and gutters shall be installed on all streets within an urban subdivision along lines and grades approved by the engineering department. All curbs and gutters shall comply with the drainage criteria manual.

Sec. 12.16.015 Use of enclosed storm sewers, bridges, and culverts

Enclosed storm sewers, bridges and culverts, designed in accordance with the drainage criteria manual, shall be installed by the applicant throughout the entire length of the drainage area within an urban subdivision. Plans and specifications shall be approved by the engineering department.

Sec. 12.16.016 Use of drainage ditches in lieu of storm sewers

Open drainage ditches may be constructed if the engineering department has determined that the construction of open drainage ditches does not adversely affect the public health, safety, and general welfare.

Sec. 12.16.017 Plans and specifications to bear certificate of a Texas professional engineer

No plans and specifications for any proposed alteration or improvement of a bed or bank of a waterway shall be accepted, reviewed or approved by the engineering department unless accompanied by a certificate bearing the seal of a Texas-registered professional engineer certifying the adequacy of the design, hydraulically and structurally, of the proposed alteration or improvement and that the proposed alteration or improvement is in compliance with city ordinances, the drainage criteria manual, and state law; provided, however, this section shall not apply to plans and specifications for minor alterations and improvements which in the judgment of the engineering department do not require the services of a Texas-registered professional engineer.

ARTICLE 12.17 LAKE TRAVIS WATERSHED NONPOINT SOURCE POLLUTION CONTROL

Sec. 12.17.001 General provisions

(a) LCRA nonpoint source pollution control technical manual adopted. There is hereby adopted by the city, for the purpose of establishing rules and regulations for nonpoint source pollution control during the design, development, construction, alteration, or enlargement, of areas within the Lake Travis Watershed located within the city extraterritorial jurisdiction and/or city limits, such jurisdiction, delineated in exhibit "A, [to Ordinance CO42-07-07-12-3I]" the map of Lake Travis Watershed as maintained on file in the office of the city secretary, that certain standards required by the Lower Colorado River Authority nonpoint source pollution control technical manual, being the most current edition thereof, and the whole thereof, as amended from time to time by LCRA, including later editions. One (1) copy of said code is now on file in the office of the city secretary, and the same is hereby adopted and incorporated as fully as if set out at length herein, and the same shall be

controlling in the design, development, and construction of all subdivisions within the city limits and extraterritorial jurisdiction of the city located within the Lake Travis Watershed.

(b) Application of article and coordination with other sections.

(1) This article sets out special requirements for the subdivision of land located in the Lake Travis Watershed, which, for the purpose of this article shall mean all land on the map adopted hereby as exhibit "A" [to Ordinance CO42-07-07-12-3I] and on file with the city secretary which is both:

(A) Within the extraterritorial jurisdiction or city limits of the city; and

(B) Not included within one of the other watershed areas delineated thereon.

(2) A person wishing to subdivide land in the Lake Travis Watershed must comply both with these special requirements and with the applicable requirements of other provisions of this code of ordinances. When the land being subdivided is located partially within and partially beyond the Lake Travis Watershed, this section shall apply only to that portion of the land within the Lake Travis Watershed.

(3) In case of conflict between the requirements of this chapter and any other chapter, the requirements of this section govern.

Sec. 12.17.002 Scope and application

(a) Authorized activities; permit required. Except as provided in subsections (b), (c), (d), and (e) below, no landowner or land user subject to this article may commence or conduct development in the Lake Travis Watershed in Travis County in the city limits or extraterritorial jurisdiction of the city without first obtaining an NPS pollution control permit from the city. Prior to commencing development, the landowner or land user controlling or using the site and desiring to undertake development subject to this section shall pay an application fee and submit a complete application for a permit. By submitting an application, the applicant is authorizing the city to enter the site to obtain information required for the review of the permit application. The city shall issue a NPS pollution control permit upon the applicant's submission of a complete permit application, payment of the application fee, and upon the city's approval of the permit application. The provisions of this article regarding permit application and issuance shall be applied consistently, uniformly, and fairly to all applicants and permittees.

(b) Single-family residences. No permit is required for the construction of a single-family residence on a single-family lot. Landowners or land users undertaking such construction shall, however, utilize the measures for controlling erosion and sedimentation described in the LCRA NPS pollution control technical manual during the construction process. Such landowners or land users shall, at the time of application for a building permit from the city, demonstrate the erosion and sedimentation control measures that will be used. A single-family residence is a detached structure designed for occupancy by one family as a residence.

(1) Construction of a single-family residence does not include construction of infrastructure such as roadways, utilities and drainage improvements.

(c) Existing development. No permit is required for existing development. If, however, improvements or additions are made after the effective date of this article which substantially increase the amount of development, then the landowner or land user must obtain a permit and demonstrate that the pollution resulting from the development will meet the performance standards set forth in sec. 12.17.003 of this article. This subsection does not apply to single-family residences as described in subsection (b) of this section.

(d) Final plats. Landowners or land users developing sites for which final subdivision plats have been approved by the city and Travis County prior to the effective date of this section do not need a permit and are not required to comply with subsections (1) and (2) of sec. 12.17.003 of this article. Such landowners or land users shall, however, comply with subsection (3) of sec. 12.17.003 of this article regarding erosion and sedimentation control. Such landowners or land users shall, at the time of application for flood control permits from Travis County, demonstrate the erosion and sedimentation control measures that will be used.

(e) Utility lines. Landowners or land users installing utility lines must obtain a permit, but are not required to comply with subsections (1) and (2) of sec. 12.17.003 of this article. Such landowners or land users shall, however, comply with subsection (3) of sec. 12.17.003 of this article regarding erosion and sedimentation control. No permit is required for routine maintenance and installation of utility lines if a landowner or land user complies with the guidelines set forth in the LCRA nonpoint source control technical manual for such activity.

Sec. 12.17.003 Performance standards

Except as otherwise provided in sec. 12.17.002 of this article, all development subject to this article shall achieve the following performance standards:

(1) Total suspended solids, total phosphorus, oil and grease.

(A) Total suspended solids. For development on slopes between zero percent (0%) and ten percent (10%), seventy percent (70%) of the annual pollutant load in the stormwater runoff for total suspended solids shall be removed. For development on slopes greater than ten percent (10%) but less than twenty percent (20%), eighty percent (80%) of the annual pollutant load in the stormwater runoff of total suspended solids shall be removed. For development on slopes greater than twenty percent (20%), ninety percent (90%) of the annual pollutant load in the stormwater runoff of total suspended solids shall be removed.

All development located within 500 feet of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes between zero percent (0%) and ten percent (10%), must have seventy-five percent (75%) of total suspended solids removed after development is complete. All development located within 500 feet of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes over ten percent (10%), must have ninety percent (90%) of the total suspended solids removed after development is complete.

(B) Total phosphorous. For development on slopes between zero percent (0%) and ten percent (10%), seventy percent (70%) of the annual pollutant load in the stormwater runoff for total phosphorous shall be removed. For development on slopes greater than ten percent (10%) but less than twenty percent (20%), seventy-five percent (75%) of the annual pollutant load in the stormwater runoff for total phosphorous shall be removed. For development on slopes greater than twenty percent (20%), eighty-five percent (85%) of the annual pollutant load in the stormwater runoff of total phosphorous shall be removed. All development located within five hundred feet (500') of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes between zero percent (0%) and ten percent (10%), must have seventy-five percent (75%) of total phosphorous removed after development is complete. All development located within five hundred feet (500') of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes over ten percent (10%), must have eighty-five percent (85%) of total phosphorous removed after development is complete.

(C) Oil and grease. For development other than single-family residences, on slopes between zero percent (0%) and ten percent (10%), seventy percent (70%) of the annual pollutant load for oil and grease shall be removed. For development other than single-family residences, on slopes greater than ten percent (10%) but less than twenty percent (20%), seventy-five percent (75%) of the annual pollutant load for oil and grease shall be removed. For development other than single-family residences, on slopes over twenty percent (20%), eighty-five percent (85%) of the annual pollutant load in the stormwater runoff of oil and grease shall be removed. All development other than single-family residences located within 500 feet of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes between zero percent (0%) and ten percent (10%), must have seventy-five percent (75%) of oil and grease removed after development is complete. All development other than single-family residences located within 500 feet of the 691 msl contour line (measured perpendicular to the contour line toward the shore) and on slopes over ten percent (10%), must have eighty-five percent (85%) of oil and grease removed after development is complete.

Table 1 Summary of LCRA Performance Standards for Pollutant Removal Levels
Incremental Pollutant Removal Requirements

Flatter property (0–10% slope)

	Total Suspended Solids	Total Phosphorus	Oil & Grease
General	70%	70%	70%
Shoreline (within 500' of 691 MSL)	75%	75%	75%

Moderately sloped property (10–20% slope)

	Total Suspended Solids	Total Phosphorus	Oil & Grease
General	80%	75%	75%
Shoreline (within 500' of 691 MSL)	90%	85%	85%

(2) Streambank erosion. Streambank erosion shall be controlled by designing the drainage system so that the amount of erosion and siltation occurring in the receiving streams is not increased. Specifically, the magnitude and frequency of the predevelopment one-year design storm shall remain the same. The one-year design storm shall be that storm as defined in the LCRA NPS pollution control technical manual.

(3) Erosion and sedimentation control. Erosion and sedimentation shall be controlled throughout the development process in accordance with the LCRA NPS pollution control technical manual.

(4) Alternative performance standards for single-family subdivisions. Development of single-family subdivisions that meets all of the following criteria need not comply with subsections (1) and (2) of this section:

(A) Minimum lot size of one (1) acre; and

(B) Street and drainage network is designed without curbs or gutters, or some other suitable design, so that runoff is treated using over-land flow methods to a vegetated buffer. The vegetated buffer must meet the slope and vegetative area cover criteria described in the LCRA NPS pollution control technical manual.

(C) Landowners or land users developing single-family subdivisions shall, at the time of application for building permits from the city, demonstrate the erosion and sedimentation control measures that will be used in accordance with the LCRA NPS pollution control technical manual.

(5) Sub-basin averaging. It is the intent of this section to have a project, as a whole, meet the performance standards of this section. Each phase of a project shall also meet the performance standard when such performance standard is averaged with phases previously built or under construction. As such, averaging of performance standards between sub-basins is allowed under the following conditions:

(A) Performance standards shall be met or exceeded where drainage impacts an adjacent land owner or environmentally sensitive area.

(B) No off-site sub-basin discharge shall fall below the performance standard by more than ten percent (10%).

(6) Monitoring and reporting. If a project proposes innovative BMPs, the city may require as a condition of issuing a permit, water quality performance monitoring of certain BMPs. Water quality monitoring shall last a period of at least three (3) years. The cost of monitoring, borne by the applicant, shall not exceed ten percent (10%) of the construction cost of all BMPs serving a project. During the monitoring period, the applicant shall submit annual reports showing the results of the monitoring efforts. The pollutant parameters to be monitored shall be determined at the time of permit issuance. The monitoring and reporting must be satisfactory prior to issuance of the BMP Maintenance permit.

Sec. 12.17.004 Processing of permit applications

(a) Preparation of permit applications. Landowners or land users who must obtain an NPS pollution control permit from the city shall prepare the permit application in accordance with the LCRA NPS pollution control technical manual, which is incorporated herein by reference as if set forth in full and which may be amended from time to time by LCRA in accordance with sec. 12.17.010 of this article.

(b) Initial review. After the application is accepted by the city, the city shall commence a technical review of the permit application for a period of time not to exceed sixty (60) calendar days. The applicant shall be promptly notified of any additional information that may be necessary for a completed staff review.

(c) Subsequent reviews. If more information is needed to complete the technical review, an applicant shall have sixty (60) calendar days to submit additional information or revise the application. If the applicant provides the additional information within the sixty-day period, the technical review shall be extended for no more than thirty (30) calendar days. If the applicant does not provide the additional information within the sixty-day period, the city may return the application and all or part of the fees to the applicant.

(d) Application fees. The application fees shall be as described in the fee schedule found in article 2.000 [of appendix A] of the City of Cedar Park code of ordinances. The fee is intended to cover the cost of processing applications, inspections, and other costs incurred by the city in the administration of this article. The fee schedule may be amended from time to time by the city council of the city.

(e) Duration. A NPS pollution control permit, unless terminated pursuant to subsection (f) or sec. 12.17.008(c), shall be valid for the life of a project or until a NPS best management practice permit is issued.

(f) Termination. A city NPS pollution control permit shall be automatically terminated if the permittee has not commenced development within three (3) years from the date of issuance of the permit. Commencement of development means clearing the site and performing initial or rough grading of the improvements. Pursuant to Sec. 12.17.008(c), the permit may be terminated by revocation upon violation of a condition to the permit. If the city terminates a permit for nonuse and the term of fiscal surety is still in effect, the city may call on the permittee's surety in order to provide permanent stabilization of the site.

(g) Fiscal surety. Approval of a permit application is contingent upon the provision of fiscal surety in a form acceptable to the city in the amount specified in the permit which provides for the construction of NPS pollution controls (BMPs) in accordance with the permit and any other provision of this section. The amount of the surety shall not be less than one hundred percent (100%) of the cost of the NPS pollution

controls (BMPs), as estimated by the professional engineer who seals the permit application. The term of fiscal surety shall terminate after the final inspection/concurrence letter has been accepted by the city.

(h) Permit amendment. Modifications to an approved master plan, NPS pollution control permit or an NPS best management practices (BMP) maintenance permit shall require an amendment. Applications for amendments shall be made in and processed in accordance with the requirements of this section and the LCRA NPS technical manual regarding permit applications. The application for amendment shall clearly identify the items sought to be amended and the reasons therefore [therefor]. However, no permit amendment is required for minor field adjustments of temporary erosion and sedimentation controls. Requests for permit amendments to permits covered by a master plan shall have the effect, if granted, of automatically amending such master plan. A permit amendment for a master plan shall be required if there is a change in land use, or an increase in density or impervious cover. Permit amendments or amendments to a master plan shall be processed in accordance with the performance standards in affect [effect] on the date of the application for the area or phase covered by such amendment.

(i) Phased development/alternative application procedures. When a phased development is proposed to be constructed over an extended period of time, the permit application shall be submitted and processed in accordance with these alternative procedures.

(1) Submittal of application and master plan. Landowners or land users whose phased development require issuance of multiple NPS pollution control permits shall prepare an application for phased development in accordance with the technical manual, which is incorporated herein by reference as if set forth in full and which may be amended from time to time in accordance with sec. 12.17.010(b) of this article.

(A) The application shall include a master plan of the entire project for review by the city. The master plan shall be accompanied by sufficient data to reasonably demonstrate that the project can be developed in compliance with the applicable provisions of this article.

(B) The application shall include topographic maps, slope maps, drainage maps, vegetative descriptions, BMP facilities and locations maps, soil maps, pollutant load and removal calculations, preliminary phasing schedule, and any other information deemed necessary by the city to demonstrate compliance with this section.

(2) Initial review. After the permit application and the master plan have been determined to be administratively complete and accepted by the city, the city shall commence a technical review of the permit application for a period of time not to exceed sixty (60) calendar days. The applicant shall be promptly notified of any additional information that may be necessary for a complete staff review. In the event that the city does not complete the review of the application and master plan within the time provided in this article, or within the time provided for subsequent reviews, the applicant shall be entitled to a full refund of the application fee.

(3) Subsequent reviews. If more information is needed to complete the technical review, the applicant shall have sixty (60) calendar days to submit additional information or revise the application. If the applicant provides the information within the sixty-day period, the technical review shall be extended no more than thirty (30) calendar days. If the applicant does not provide the additional information within the sixty-day period, the city may return the application and all or part of the fees to the applicant.

(4) Master plan approval. Upon approval of the master plan, the applicant shall be entitled to develop the project in accordance with the performance standards in effect on the date of the city's approval. However, LCRA's NPS technical manual may be revised from time to time, and revisions may reflect changes or alterations in certain BMPs relative to their ability to achieve the performance standard. Approval of a master plan does not exempt a development from compliance with revisions to LCRA's NPS technical manual so long as the revisions do not prohibit the project from being built in reasonable conformance with the master plan.

(5) Duration.

(A) The applicant shall have one (1) year from the date of approval of the master plan to submit a completed permit application for the first phase of the project, or the approval of the master plan shall become null and void. The first phase of the project must represent development of at least ten percent (10%) or one hundred (100) acres, whichever is greater, of the total project or it will not be considered a complete permit application under this provision.

(B) Should the NPS permit for the first phase of the development of the project be terminated due to lack of activity as provided in subsection (f) or if termination occurs pursuant to sec. 12.17.008(c), the master plan approval shall become null and void.

(C) The applicant shall have five (5) years from the date of issuance of the BMP maintenance permit, or the completion of construction, whichever occurs first, to submit a completed application for each subsequent phase of phases, or approval of the master plan relative to such phases shall become null and void.

(D) Should a NPS permit for subsequent phases of development of the project be terminated due to lack of activity, as provided in subsection (f), or if termination occurs pursuant to sec. 12.17.008(c), the master plan approval relative to that phase or phases shall become null and void.

(6) Permit issuance. The city staff shall issue a NPS pollution control permit after the applicant has demonstrated compliance with the requirements of this article. A permittee may not commence development until the permit is issued.

Sec. 12.17.005 Permits

(a) Permit conditions. All permits shall require the permittee to:

(1) Comply with all applicable sections of this article and conditions of this permit;

(2) Notify the city within forty-eight (48) hours before commencing any development;

(3) Obtain a permit amendment from the city prior to modifying the approved NPS pollution controls (BMPs); however, no permit amendment is required for minor field adjustments of temporary erosion controls;

(4) Install all NPS pollution controls (BMPs) as identified in the approved permit;

(5) Comply with the requirements of the LCRA NPS technical manual regarding formation of a property owners/maintenance association and any associated maintenance plans;

(6) Repair any siltation or erosion damage resulting from development;

(7) Inspect all temporary erosion and sedimentation controls after each rain of 0.5 inches or more, and at least once each week, and make needed repairs;

(8) Allow the city staff to enter the site for the purpose of inspecting compliance with the permit, or for performing any work necessary to bring the site into compliance with the permit;

(9) Designate a location on the site for the posting of notices;

(10) Keep a copy of the permit and all development plans on the site;

(11) Upon completion of development, a registered professional engineer shall certify in writing to the city that the NPS pollution controls (BMPs) were constructed in accordance with the permit conditions and this article;

(12) Promptly notify the city in writing of any change in the name, address, or telephone number of the permittee; and

(13) Assign the NPS pollution control permit and all rights and obligations associated therewith to the landowner, maintenance, or property owner's association as applicable, upon completion of construction of the development if the permit is not already in the name of the person responsible for the BMPs.

(14) Pay all fees associated with the permit application in a timely manner.

(15) Perform all activities in accordance with all federal, state, or local laws or ordinances.

(16) Indemnify and hold the city harmless from any and all claims, demands, damages, actions, costs and charges to which the city may become subject and which the city may have to pay by reason of injury to any person or property, or loss of life, or property resulting from, or in any way connected with the permittee's actions under this permit.

(17) No work is authorized that is not directly addressed in the permit application submitted to the city.

(18) Nothing in this permit is intended to amend or alter any legal rights or benefits previously granted to or vested in the city.

(b) NPS best management practice maintenance permit. A BMP maintenance permit shall be issued to the developer or his/her assignee upon completion of construction of the infrastructure and BMP facilities required by the NPS development permit. In the event that the landowner, maintenance or property owner's association does not accept the assignment, the developer shall remain subject to the terms of the NPS pollution control permit or best management maintenance permit, as applicable, until an assignment occurs or until the maintenance, property owner's association, or landowner accepts issuance of a BMP permit.

(c) Additional permit conditions. Additional permit conditions may be required as necessary in order to achieve compliance with the article.

Sec. 12.17.006 Right of entry and inspection

(a) Right of entry. Any person or his/her successors or assigns who has filed a permit application or received a permit under this section shall allow entry by the city on the site for the purposes of inspection and monitoring. Employees and agents of the city are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions related to water quality and administration of this article.

(b) Predevelopment inspection. After permit issuance, but before the installation of erosion and sedimentation controls and before development commences, the applicant shall provide a written request to the city for an inspection of the temporary erosion controls. This predevelopment inspection must be attended by the applicant, the city inspector, the design engineer, contractor, and field engineer. The city inspector will determine whether the temporary erosion and sedimentation controls will be in compliance with the permit. If the city does not conduct the predevelopment inspection within five (5) working days of receipt of the request for inspection, the applicant may proceed with development after the time for appeals has expired.

(c) Inspections during development. During development, the city shall inspect the site to ensure that temporary and permanent erosion controls are being maintained and that the permanent NPS pollution controls (BMPs) are being constructed in accordance with the requirements of this article.

(d) Final inspection. Upon completion of development, the city shall conduct a final inspection of the NPS pollution controls used. This final development inspection must be attended by the permittee, the city inspector, the design engineer, contractor, and field engineer. The city inspector will determine whether the NPS pollution controls are in compliance with the permit. If the NPS pollution controls are approved, the city shall release the permittee's fiscal surety.

(e) Annual inspections. All permanent NPS pollution controls (BMPs) will be inspected at least annually by the city. The fee for this inspection shall be included as part of the permit application fee collected by the city.

Sec. 12.17.007 Maintenance of NPS pollution controls

(a) Maintenance plans. Prior to permit issuance, all applicants shall prepare a plan describing the measures necessary to maintain each NPS pollution control (BMP) required by this article in accordance with the maintenance guidelines set forth in the LCRA NPS pollution control technical manual. The maintenance plan must be submitted to and approved by the city. Upon receiving written approval of the maintenance plan from the city, the landowner or land user must record in the county deed records that the property is subject to an NPS pollution control maintenance plan and must also, upon transferring title to that property, place a restriction in the deed that states that the property is subject to an NPS pollution control maintenance plan.

(b) Maintenance required. All NPS pollution control measures (BMPs) and their appurtenances shall be maintained by the applicant or subsequent landowner(s) or land user(s) pursuant to the approved plan. Land owners and land users shall form a maintenance association (MA) in accordance with this article prior to permit issuance. All MA's must post financial security or create a maintenance fund for the purpose of maintaining all NPS pollution controls (BMPs) required by this article. The duties and responsibilities of an MA may be performed by a homeowners' association, property owners' association, or like entity if it meets the requirements of subsections (b) and (c) of this section. The maintenance of all BMPs shall be in accordance with the permit and the approved maintenance plan.

(c) Requirements for maintenance associations. The applicant must submit to the city the approved articles of association for the MA, as well as a map showing the boundaries of its jurisdiction. The MA must have the following general powers which are reflected in the articles of association:

(1) Own and convey property;

(2) Operate and maintain common property, specifically the NPS pollution controls (BMPs);

(3) Establish rules and regulations;

(4) Assess members maintenance fees and enforce said assessments;

(5) Sue and be sued;

(6) Contract for services to provide operation and maintenance;

(7) If the MA is a homeowners association, it must have as members all the homeowners, lot owners, property owners or unit owners;

(8) The MA shall exist in perpetuity; however, if the MA is dissolved, the articles of association must provide that the property consisting of the NPS pollution controls (BMPs) shall be conveyed to an appropriate entity or similar nonprofit corporation capable of maintaining the BMPs; and

(9) It shall be clearly stated in the articles of association of the MA that:

(A) It is the responsibility of the MA to operate and maintain the NPS pollution controls (BMPs);

(B) The NPS pollution control(s) (BMPs) is/are owned by the MA or described therein as common property;

(C) There is a method of assessing and collecting the assessment for operation and maintenance of the NPS pollution controls (BMPs); and

(D) Any amendment that would affect the NPS pollution controls (BMPs) must be approved by the city.

(d) Phased projects. If an MA is proposed for a project which will be developed in phases and subsequent phases will utilize the NPS pollution controls (BMPs), the MA must have the ability to accept future phases into the MA.

(e) Transfer of maintenance to political subdivisions. Upon approval by the city, the applicant, landowner, land user, or permittee may transfer responsibility for maintenance of the NPS pollution control measures (BMPs) to a political subdivision. The political subdivision must maintain the NPS pollution control measures in accordance with the approved maintenance plan.

Sec. 12.17.008 Enforcement

(a) Violations. It is unlawful under this article:

(1) For any landowner or land user subject to the permit requirements of this chapter to commence or undertake any development or to cause, suffer, or allow another to commence or undertake development or redevelopment on his or her property without first obtaining a valid NPS pollution control permit from the city;

(2) For a landowner or land user subject to this chapter, but not required to obtain a permit, to commence or undertake development or to cause, suffer or allow another to commence or undertake development on his or her property without first complying with the performance standards, as applicable with this chapter; or

(3) For any landowner or land user subject to this chapter to conduct development after a stop-work order has been issued; or

(4) For any landowner or land user subject to this article to fail to maintain the best management practices in accordance with the NPS best management practice maintenance permit or approved maintenance plan.

(5) For any landowner or land user subject to this chapter to otherwise commence, construct or engage in development, or any other act, that violates a provision of this article.

(b) Stop-work order. If the city determines that there has been development without compliance with this article, the landowner, land user or permittee shall be ordered to stop work. The stop-work order shall direct that no further development shall take place until the landowner or land user complies with this article. The stop-work order shall be in writing and, in the case of a permitted development, shall be posted at the site in the location designated for posting such notices. If the development is occurring on an unpermitted site, the notice shall be prominently posted at the site. Permittee may appeal the issuance of a stop-work order to the city manager of the city by submitting in writing a concise statement of the reasons for believing that the stop-work order should not have been issued and citing the specific performance standards that the development should be exempt from the NPS section or the permit requirements. A request for appeal of the stop-work order must be received in the office of the city manager within (10) days from the date that the stop-work order is posted. The city manager may decide the appeal based upon the reasons stated in the appeal or may request additional information from the staff or appellant.

(c) Permit revocation. A permittee shall have ten (10) days from the date that the stop-work order is posted, or ten (10) days from the date that the city manager decides an appeal of the stop-work order, if an appeal has been submitted in a timely manner, to comply with the terms and conditions of the permit. If a permittee fails to comply within this period, the city may revoke the permit.

(d) Enforcement of best management practices (BMPs) maintenance permits. If the city determines that a landowner, maintenance association (MA), permittee, or political subdivision is not implementing the approved maintenance plan or is not in compliance with one of the other conditions contained in the BMP maintenance permit, the MA, permittee, or political subdivision shall be notified of the deficiency. An MA, permittee, or political subdivision shall have sixty (60) days from the date that the notice is issued to comply with the maintenance plan or BMP permit condition. If the MA, permittee, or political subdivision fails to comply within this period, the city may perform the necessary maintenance and assess the MA, permittee, or political subdivision for the costs associated with the work performed. The city may also seek penalties as provided in this article.

(e) Penalty. Any person violating provisions of this article shall be subject to a penalty of not more than ten thousand dollars ($10,000.00) for each violation. Each calendar day a violation exists shall constitute a separate offense.

(f) Other remedies and injunction. Compliance with the provisions of this article may also be enforced through any and all other remedies at law or in equity including enforcement by injunction.

Sec. 12.17.009 Variances for nonpoint source pollution

(a) If a unique or site-specific problem exists with the construction plans which makes compliance with this section [article] impractical or unwise, the applicant may submit an alternative plan to the director of engineering or his/her designee for consideration. The alternative plan shall provide alternatives that are practical and that contain approximately the same standards as required by this section [article].

(b) If the alternative plan is denied by the director of engineering or his/her designee, the applicant may appeal the denial to the planning and zoning commission.

(c) The planning and zoning commission may authorize a variance from these regulations when, in its opinion, undue hardship will result from requiring strict compliance. In granting a variance, the planning and zoning commission shall prescribe only conditions that it deems necessary to or desirable in the public interest. In making the findings herein below required, the planning and zoning commission shall take into account the nature of the proposed use of the land involved, existing uses of land in the vicinity, and expected type and volume of traffic.

(d) No variance shall be granted unless the planning and zoning commission finds that all of the following are met:

(1) That there are special circumstances or conditions affecting the land involved such that the strict application at the provisions of this chapter would deprive the applicant of the reasonable use of his land; and

(2) That the variance is necessary for the preservation and enjoyment of substantial property rights of the applicants; and

(3) That the granting of the variance will not be detrimental to the public health, safety or welfare or injurious to other property or public facilities in the area; and

(4) That the granting of the variance will not have the effect of preventing the orderly development of the applicant's land and/or land in the vicinity in accordance with the provisions of this chapter.

(e) Such findings of the planning and zoning commission, together with the specific facts upon which findings are based, shall be incorporated into the official minutes of the planning and zoning commission meeting at which such variance is granted. Variances may be granted only when in harmony with the general purpose and intent of this chapter so that the public health, safety and welfare may be secured and substantial justice done. Pecuniary hardship to the applicant, standing alone, shall not be deemed to constitute undue hardship.

(f) All requested variances from this chapter shall be made in writing at least thirty (30) days prior to the date on which consideration is to be given by the planning and zoning commission. Submittal shall be made to the public works department.

(g) Planning and zoning commission shall hold at least one public hearing on each application.

(1) Written notice of all public hearings on proposed waiver shall be sent to all owners of property, or to the person rendering the same for city taxes, located within the area of application and within two hundred feet (200') of any property affected thereby, within not less than ten (10) days before such hearing is held. Such notice may be served by using the last known address as listed on the latest approved tax roll and depositing the notice, postage paid, in the United States mail.

(2) Notice of all public hearings on proposed variances shall also appear in the local newspaper of general circulation within not less than ten (10) days before such hearing is held.

(h) Positive action of the planning and zoning commission or city council shall be recorded in the county clerk's office.

Sec. 12.17.010 Savings clause; amendment; effective date; review

(a) Savings clause. If any word, clause, sentence, or provision of this article or the application thereof to any person or circumstance shall be held to be invalid, the remainder of the article, and the application of such provision to other persons or circumstances, shall not be affected thereby.

(b) Amendment of the article, technical manual, or fee schedule. This article may be amended by the city council from time to time after notice and reasonable opportunity for public review. The LCRA NPS pollution control technical manual may be amended by LCRA's general manager from time to time after notice and reasonable opportunity for public review. The fee schedule may be amended from time to time by the city council after notice and reasonable opportunity for public review.

(c) Review. This article shall be reviewed for its effectiveness for protecting the quality of water in Lake Travis no later than three (3) years from its effective date.

ARTICLE 12.18 WATER UTILITY IMPROVEMENTS

Sec. 12.18.001 Policy

The applicant shall be responsible for providing an approved public water supply system consistent with the preliminary plan or final plat, this chapter and the rules and regulations of the entity providing or to provide water to the development.

(1) Where an approved public water supply or distribution main is within reasonable distance of the subdivision as determined by the director of engineering or his/her designee and connection to the system is both possible and permissible, the developer shall be required to bear the cost of connecting the development to such existing water supply and the acquisition of all necessary easements. In some instances, the city may request that the main water connection be oversized or rerouted to suit future water system improvements in that area. In some cases, the city will reimburse the developer the costs of oversizing such connections.

(2) The applicant shall, consistent with all existing ordinances, make a pro-rata contribution to funding of needed storage facilities, treatment facilities, and specific distribution lines as determined necessary by the city. Under extraordinary circumstances, these provisions may be varied with the approval of the council and the planning and zoning commission.

(3) When platting or development occurs on a tract that is currently served by a water line less than eight (8) inches in diameter, the applicant/developer shall be responsible for either upsizing the water line prior to recordation of any final plat or posting fiscal surety for the construction of the water line across the entire length of the tract.

Sec. 12.18.002 Design

The design and construction of a public water system shall:

(1) Comply with regulations covering extension of public water systems adopted by the state commission on environmental quality.

(2) Be of sufficient size to furnish adequate domestic water supply and fire protection services to all lots, and to conform with the master utility plan for the city;

(3) Be located where maintenance can be accomplished with the least interference with traffic, structures and other utilities;

(4) Be designed in an effort to eliminate the need for booster pumps or other similar devices;

(5) Not propose water mains less than eight (8) inches in diameter, with consideration for six-inch pipe in cul-de-sacs;

(6) Be acceptable, without penalty, to the state fire insurance commission.

(7) Include fire hydrants:

(A) At a minimum spacing of five hundred (500) feet for residential developments;

(B) Within three hundred (300) feet of all sides of a nonresidential development.

(C) At the end of all cul-de-sac streets, or similar dead-end water distribution lines; and

(D) For fire flows calculated with twenty (20) pound residual pressure.

(8) Include valves on each fire hydrant lead, at each intersection of two (2) or more mains, and valve spacing so that no more than 30 customers will be without water during a shutoff;

(9) Include automatic flushing valves at the end of all dead-end waterlines;

(10) Be designed and constructed in accordance with city standard details and specifications;

(11) Be designed and constructed to comply with all applicable rules, regulations and policies of the entity that will provide water service to the development;

(12) The design of private water systems shall include backflow prevention assemblies for domestic and fire protection systems that are directly or indirectly connected to the city's potable water distribution system; and

(13) The water system shall be constructed by the applicant/developer across the entire frontage of the tract so as to allow future extensions of the water system by adjacent tracts. A waiver to this requirement shall be in writing from the director of engineering or his/her designee.

ARTICLE 12.19 WASTEWATER UTILITY IMPROVEMENTS

Sec. 12.19.001 Policy

The applicant shall be responsible for providing an approved wastewater system, consistent with the preliminary plan, this chapter and the rules and regulations of the entity providing or to provide wastewater service to the development, throughout the development, such that all lots, parcels, or tracts of land will be capable of connecting to the wastewater system except as otherwise provided herein.

(1) Where an approved public wastewater collection main is within reasonable distance of the subdivision as determined by the director of engineering or his/her designee and connection to the system is both possible and permissible, the developer shall be required to bear the cost of connecting his development to such existing wastewater system and the acquisition of all necessary easements. In some instances, the city may request that the main wastewater connection be oversized or rerouted to suit future wastewater system improvements in that area. In some cases, the city will reimburse the applicant the costs of oversizing or rerouting such connections.

(2) The applicant shall, consistent with all existing ordinances, make a pro-rata contribution to funding of needed lift station facilities, treatment facilities, and specific collection lines as determined necessary by the city. Under extraordinary circumstances, these provisions may be varied with the approval of the council and the planning and zoning commission.

Sec. 12.19.002 Design

(a) The design and construction of wastewater collection systems, lift stations, inverted siphons and septic systems shall comply with regulations covering extension of public wastewater systems, and other applicable regulations, adopted by the state commission on environmental quality and the state department of health. Under extraordinary circumstances, these provisions may be varied with the approval of the council and the planning and zoning commission.

(b) All new public wastewater systems shall be designed and constructed to operate on a gravity flow basis by taking advantage of natural topographic conditions and thereby reducing the need for lift stations and force mains.

(c) Flow determinations should include generally accepted criteria for average daily flow, inflow and infiltration, peaking factors, minimum slopes and minimum flow velocities.

(d) The minimum size of any public wastewater line will be six (6) inches in diameter.

(e) Public wastewater lines shall be located where maintenance can be accomplished with the least interference with traffic, structures and other utilities. Minimum separation distance from water utilities shall be in accordance with the rules adopted by the state commission on environmental quality.

(f) Manholes shall be located so as to facilitate inspection and maintenance, including intersections, horizontal alignment changes, vertical grade changes, change in pipe size or material, and force main discharge points.

(g) All wastewater appurtenances shall be designed and constructed in accordance with city standard details and specifications.

(h) All wastewater systems shall be designed and constructed to comply with all applicable rules, regulations and policies of the entity that will provide wastewater service to the development.

(i) The wastewater system shall be constructed across the entire frontage of the tract or to the edge of the tract so as to allow future extensions of the wastewater system by adjacent tracts. A waiver to this requirement shall be in writing from the director of engineering or his/her designee.

ARTICLE 12.20 PARKLAND DEDICATION

Sec. 12.20.001 Purpose

(a) All single-family, two family and multifamily residential subdivisions, shall be required to comply with this section [article]. It is the intention of this section [article] to provide for quality parkland and improvements to those parklands; through either parkland property dedication or parkland cash contributions in lieu of property dedication.

(b) The city desires to provide sizable, high quality parkland sites for the use and enjoyment of its citizens. It is intended that such sites be easily accessible to all citizens of Cedar Park and easily maintained by city work forces.

(c) The director of parks and recreation may recommend to the planning and zoning commission that a proposed parkland site dedication is unacceptable and may require parkland cash contributions in lieu of parkland property dedication. Such payments in lieu of parkland property dedication will be based upon the following criteria.

Sec. 12.20.002 Criteria for land dedication

(a) Eligibility of subdivisions for parkland dedication requirements.

(1) Minor subdivisions. The developer of any subdivision classified as a minor subdivision shall not be required to dedicate parkland. The developer of minor subdivisions shall pay cash contribution in lieu of parkland dedication. However, if the developer feels he has parkland area that would be advantageous to the city, he may submit a request for dedicating parkland to the city and the city shall have the option of accepting parkland property dedication or the cash contribution.

(2) Major subdivisions. The developer of any subdivision classified as a major subdivision may be required to dedicate parkland. During the preliminary plan approval process, the developer shall designate a location for the proposed park (see parkland dedication requirements). To meet the intent of this chapter, one larger park rather than several small ones spread over the subdivision may be required. At this time the planning and zoning commission will decide whether or not the proposed property dedication would be consistent with the desires of the city in terms of quality and location of its parklands. Should the city decide that the parkland is not desirable, and then the developer shall pay cash contribution in lieu of parkland dedication.

(b) Properties not required to dedicate parkland.

(1) All residential properties that are classified as minor subdivisions.

(2) The dedication of land or cash contributions shall not apply to existing lots within a recorded plat. All new lots within a replat or addition to an existing subdivision shall comply with the parkland dedication or cash contribution requirements as outlined in this chapter.

Sec. 12.20.003 Parkland dedication requirements

(a) Land treatment. Following preliminary platting of the parkland by the applicant or developer, the applicant or developer shall not cause or allow any fill material or construction debris to be dumped on the land (park site), excavate the soil, grade the site, remove or damage vegetation or otherwise physically disturb the site without written permission from the director of the parks and recreation department “director”. The applicant may issue no easements or other dedications. The director may allow the applicant or developer to dump fill material and take other respective actions specified in this section when, at the discretion of the director, such action would be beneficial to the parkland. In all such cases the city shall provide a letter of permission to the respective applicant or developer prior to the action in question. The property shall be considered and treated as parkland.

(b) The amount of land required to be dedicated for parkland will be calculated at a rate of not less than eight (8) acres of parkland per 1,000 ultimate residents or an equivalent ratio thereof. The area of the park to be dedicated shall be measured and calculated to the centerline of any street within the subdivision bounding said park. Parkland must have a minimum of one hundred (100) feet of frontage on a dedicated public street. The following formula shall be used to determine the amount of parkland to be dedicated:

$$\frac{8.0 \times (\text{No Units}) \times (\text{Persons/Units})}{1000} = \text{Acres to be dedicated}$$

(c) The number of persons per unit shall be based on data compiled by the city and shall be reviewed and adjusted as necessary. The following figures represent the average number of persons per unit by current density categories, and shall be used to calculate parkland dedication:

Gross Density per Residential Land	Persons per Unit
From 0 to 6 (Single-family)	3.0
Over 6 to 20 (Multifamily)	2.0

(d) Where a subdivision plat is submitted for a multifamily residential development and information is not provided concerning the number of units, the city shall assume the highest density allowed in the district applied to the property. If a property is not zoned, the city shall assume a density of 20 units per acre, which represents the highest density allowed in the R-2C district. This assumed density might be adjusted to a figure provided by the developer if recorded as a restrictive covenant enforceable by the city and approved by the city attorney.

(e) When an area of less than five (5) acres is required to be dedicated, the city may elect to accept the land offered for dedication, or refuse the same and require the payment of fees in lieu thereof.

(f) No parkland shall be submitted for approval by the city that falls within the one-hundred-year floodplain or is a portion of any drainage or detention systems unless the planning and zoning commission determines, after receiving a recommendation from the parks and recreation board, that the floodplain is desirable for recreation and the floodplain is left in its native condition with the exception of allowing vegetation to be pruned or maintained in a way consistent with the recreational uses and allowing installation of recreational improvements consistent with floodplain uses such as trails, picnic areas, etc. If it is determined that the native floodplain areas are useful for recreational purposes, up to fifty (50%) percent of the land required for dedication based on the parkland dedication calculation may be counted toward the parkland requirements with the condition that the parkland is at least one hundred (100) feet in width and that none of the parkland is utilized for stormwater detention.

(g) All land intended for park purposes shall be inspected both on the plat and in the field by the director of parks and recreation, who shall report to the chairman of the parks and recreation board. The parks and recreation board shall make a recommendation to the planning and zoning commission as to the desirability of the parkland. The planning and zoning commission shall make the final decision.

(h) The developer shall be obligated to place survey corner markers at all corners of the parkland, which has been located by a licensed and professional surveyor. The markers will be four (4) inch diameter PVC pipe recessed twelve (12) inches in the ground. They will contain a 1/2-inch iron pipe or rebar and be filled with concrete flush with ground.

(i) The developer shall be responsible for providing a six (6) inch sewer stub ten (10) feet behind the curb at a location acceptable to the director of engineering or his/her designee. The director of engineering or his/her designee will be required to approve such location in writing prior to final approval and release of fiscal requirements of said subdivision.

(j) The developer shall be responsible for providing a three-quarter-inch metered water supply located twelve (12) feet behind the curb at a location acceptable to the director of engineering or his/her designee. The director of engineering or his/her designee will be required to approve such location in writing prior to final approval and release of fiscal requirements of said subdivision.

(k) Parkland to be conveyed as part of a subdivision application shall be designated on both the preliminary plan and the final plat and shown as “Parkland Dedicated to the City of Cedar Park” with the acreage of the parkland also shown. The applicant shall show the area designated as parkland in the narrative portion of the plat where the applicant or developer dedicates all easements, rights-of-way, etc. to the city and designate it as a lot. At the time the applicant requests the city to accept the subdivision improvements, the applicant shall deliver to the parks and recreation department the warranty deed conveying fee simple title of all parkland shown on the final plat approved by the planning commision. Any violation shall result in delay of city acceptance of the subdivision until restoration is made or until a restoration fee calculated at a rate of 1-1/2 the total value of the damage is paid to the city. The director of parks and recreation shall make the value of damages.

(l) If the applicant proposes park improvements to fulfill some or all of the requirements of this section, the applicant shall provide a park plan with the submission of the subdivision plat. The park plan shall consist of a scaled plan drawing showing the entire park site, topographic contours and all proposed improvements including specifications for proposed equipment. It is the intent of this chapter that the applicant provides either parkland or a cash contribution instead of park improvements. Park improvements will be considered for compliance with this article only if it is the opinion of the planning commission, after considering a recommendation from the parks and recreation board, that the park improvements are more desirable than additional parkland dedication. Any playground equipment and all other site improvements are

required to be approved by the director of parks and recreation prior to approval of the park plan. All playground equipment and its installation must meet the safety standards set by the U.S. Consumer Product Safety Commission and the National Playground Safety Institute.

Sec. 12.20.004 Neighborhood and linear parks and connections to parks

(a) General requirements. Parks should be easy to access and open to public view so as to benefit area development, enhance the visual character of the city, protect public safety and minimize conflict with adjacent land uses. The following guidelines should be used in designing parks:

(1) Where physically feasible, parks should be bounded by streets or by other public uses (e.g. school, library, recreation center, amenity center, detention area).

(2) Where residential lots must directly abut a park, lots should be oriented so as to side and not back to the park. In this instance, cul-de-sac and looped streets should be used to access the lots and park. Residential lots should back to a park only when the site's physical character (e.g. shape, topography, drainage) does not reasonably permit an alternative design or the layout of the subdivision complements the use of the park (e.g. lots backing to a golf course).

(3) A proposed subdivision adjacent to a park may not be designed to restrict reasonable access to the park from other area subdivisions. Street connections to existing or future adjoining subdivisions may be required to provide reasonable access to parks.

(4) Where a nonresidential use must directly abut a park, the use must be separated by a screening wall or fence and landscaping approved by the urban forester. Access points to the park may be permitted by the city if a public benefit is established.

(5) Public access to a park shall not be less than twenty (20) feet at the curb and shall not be part of a residential lot.

(b) Streets abutting a park. The city may require any proposed residential street built adjacent to a park to be constructed to collector street width to ensure access and prevent traffic congestion.

(c) Park reservation and dedication.

(1) Land for neighborhood and linear parks shall be reserved and dedicated in accordance with the locations specified on the parks and open space master plan.

(2) Preliminary plans and final plats shall be reviewed to determine if land dedications shall be required for neighborhood and linear parks. If land is to be dedicated, the city shall specify the proposed land requirements, and the land owner shall accommodate the dedication or offer to dedicate an alternative site, which reasonably meets the same needs of the city. The park and recreation advisory board shall make the final determination of site location and configuration reserved for future dedication on the approved preliminary plan and/or final plat. Specific neighborhood and linear park sites and improvements shall be dedicated to the city upon approval of the final plat and completion and acceptance of the improvements.

(d) Site criteria. Neighborhood and linear park sites shall be of a suitable size, dimension, topography, and general character to meet the design criteria specified in the parks and open space master plan, as it exists or may be amended.

(e) Minimum park improvements. Unless waived by the park and recreation advisory board, neighborhood and linear parks shall be improved by the developer prior to acceptance by the city. Minimum park improvements, as determined by the city, shall include:

(1) Grading and clearance of unwanted vegetation;

(2) Installation of drainage and stream erosion controls;

(3) Establishment of turf and planting of trees;

(4) Installation of perimeter streets and street lights; and

(5) Provision of water and sewer service.

(6) Two (2) acres or more.

(f) Additional improvements. The developer may request permission to construct additional park improvements. The parks and recreation advisory board may approve additional improvements if the proposed improvements are consistent with the design criteria and objectives of the parks and open space master plan, as it exists or may be amended, and the parks and recreation advisory board provides a favorable recommendation.

(g) Improvement plan and development agreement. No additional improvements may be made to a proposed park site without prior written approval from the city. The plan shall illustrate all proposed improvements and estimated costs of each improvement (including unit costs where appropriate). Prior to improving the site, the developer and the city must execute a development agreement defining, among other things, the work to be performed, construction schedules, improvement costs, performance surety, the amount to be reimbursed and the timing of such reimbursement. The city's parks and recreation advisory board shall assess and submit its recommendation to the planning and zoning commission.

(h) Completion of land dedication and improvements. Parkland shall be dedicated to the city concurrently with the filing of an approved final plat or replat. All improvements specified in the park improvement plan and development agreement must be completed prior to approval of the final plat, except where future performance is provided for in a development agreement.

(i) The city may accept or reject voluntary dedications of land and/or improvements for public park purposes.

Sec. 12.20.005 Cash contribution in lieu of land dedication

(a) Properties subject to cash contribution in lieu of land dedication. All residential properties that are to be subdivided or platted and that are not required to have parkland dedicated to the city are subject to cash in lieu donation.

(b) Properties not subject to cash contribution in lieu of land dedication.

(1) All residential properties that have been required to dedicate parkland during the platting process.

(2) The dedication of land or cash contribution shall not apply in the case of a replat of a plat, subdivision or addition or the resubdivision of existing single lots that received approval after the date in which any previous parkland/greenbelt dedication ordinances were in effect in which dedication of land or payment of fees for parkland may have been required.

(c) Payment schedules for cash contributions in lieu of parkland dedication.

(1) The director of parks and recreation shall recommend to the planning and zoning commission that developers of all minor subdivisions meet the parkland dedication guidelines with a cash contribution. The rate shall be set at a rate of seven hundred twenty dollars ($720.00) per dwelling unit for single-family; four hundred eighty dollars ($480.00) per dwelling unit for two-family; and four hundred eighty dollars ($480.00) per dwelling unit for multifamily.

(2) The director of parks and recreation may recommend to the planning and zoning commission that developers of all major subdivisions shall meet the parkland dedication guidelines with a cash contribution. The rate shall be set at a rate of seven hundred twenty dollars ($720.00) per dwelling unit for single-family; four hundred eighty dollars ($480.00) per dwelling unit for two-family; and four hundred eighty dollars ($480.00) per dwelling unit for multifamily.

(3) A park plan that consists of a cash contribution in lieu of parkland dedication as provided for in this section may be approved by the Director of the parks and recreation department for a residential subdivision of ten (10) dwellings or less.

(d) Time schedules regarding deeding of parkland properties and improvements to the city by the applicant.

(1) The parkland shall be deeded to the city at the time the applicant requests the city to accept the subdivision improvements.

(2) The applicant prior to acceptance of subdivision improvements as approved with the park plan shall complete any improvements to parkland by the city.

(e) Time schedules regarding the payment of cash contributions in lieu of parkland dedication and the expenditure of cash contributions by the city toward parkland or parkland improvements.

(1) Cash contributions shall be paid at or prior to the time of final plat approval.

(2) The city shall expend the cash contributions for park or parkland improvements within five (5) years after the day any such cash contribution is made.

ARTICLE 12.21 UNIFORM CITY SERVICE ADDRESS SYSTEM

Sec. 12.21.001 General

The term “city service address” shall refer to the house number and street name assigned to a property by the city manager or a designee within the corporate limits of the city or within its extraterritorial jurisdiction. A lot which contains multiple buildings or multiple units or suites within a single building will also be assigned building numbers and unit/suite numbers, which will be part of the city service address.

Sec. 12.21.002 Location of city service address

(a) Assigned city service addresses must be permanently affixed to all structures in such a position as to be plainly visible and legible from the street, road or access point of the property indicated in the city service address. To the extent that the city service address includes a street name, the street name is not required to be permanently affixed, so long as the house number is plainly visible and legible from that street. A building number contained in a city service address must be plainly visible and legible from any common entrance into the property or, in the event that multiple buildings are not visible from a common entrance, a building directory shall be erected so as to be visible from any common entrance.

(b) Those structures sited in such a manner or distance from the street, road, or access point of the property thereby rendering the affixed assigned city service address invisible and/or illegible from the street, road, or access point on the property will not be required to comply with

subsection (a) above. In lieu of the affixation to the structure, a monument or sign of appropriate size and tasteful construction will be placed on the property displaying the assigned city service address in a visible and legible manner.

(c) During construction of any structure, the city service address must be posted on a sign in such a position as to be plainly visible and legible from the street indicated in the city service address.

Sec. 12.21.003 Assignment of street names

(a) New streets in subdivisions shall be named so as to provide continuity of the name with existing streets and so as to prevent conflict with identical or similar names in other parts of the city, the city's extraterritorial jurisdiction, or other contiguous jurisdictions. A proposed new street name will be considered in conflict if:

(1) It duplicates a street name already in use within the city's jurisdiction without being a continuation of that street;

(2) It duplicates the stating [starting] word of a street name already in use by three (3) or more existing streets;

(3) It implies an offshoot of an existing street without attachment to that street, such as cul-de-sac with the same name as another street, but not located off that street; or

(4) It extends an existing street from a neighboring jurisdiction into Cedar Park's jurisdiction without continuing the street name.

(b) Existing street names which are currently in use and required to be changed due to a realignment of the street, new street dedication, vacation or incorporation into a new roadway or arterial, may be changed at the discretion of the city council upon a recommendation by city staff and submission of a formal request as outlined in section 12.21.004 of this article. After a street realignment or vacation, if any existing city service addresses require renumbering, each lot will be assigned a new city service address as outlined in subsection (e).

(c) A "legal lot" shall be described as an entire lot in approved, recorded subdivision.

(d) A "legal tract" shall be described as a parcel of land not created in that configuration by a subdivision plat, but established prior to the effective date hereof and remaining unchanged through current ownership.

(e) Each lot in a subdivision shall be assigned a city service address as described in section 12.21.001 of this article. No lot will be assigned more than one (1) number as a part of the city service address for that lot. The origin of the numbering system shall be the center of Highway 183 and East and West Park Streets and shall extend as described below, following the centerlines of streets or their prolongation's except where otherwise prescribed:

(1) North axis. Northerly on Highway 183 to the north city limits.

(2) South axis. Southerly on Highway 183 to the south city limits.

(3) East axis. Easterly on East Park Street to the city limits, and eastward across undeveloped land to the eastern extraterritorial jurisdiction.

(4) West axis. Westerly on West Park Street to the city limits, and westward across undeveloped land to the western extraterritorial jurisdiction.

(f) City service address house numbers are assigned according to location within a rectangular grid, oriented to align with the axis of the numbering system. House numbers are assigned so that their numerical sequence increases along a street in a direction away from the center of the grid pattern. Even numbers are used on the south side of east-west streets, and the east side of north-south streets.

(g) Unplatted properties designated as "legal tracts" shall be assigned to a single city service address which will apply to the entire parcel of land.

(h) A parcel of land within the city's extraterritorial jurisdiction, but not receiving city services, will be assigned a single address for the parcel.

(i) Property zoned commercial will require a site plan of development before assignment of address and will receive one city service address for each "legal lot" as described in subsection (c) of this section.

(j) Exceptions to these rules governing house numbering may be:

(1) Water meters in medians of streets.

(2) Permanent sign structures.

Sec. 12.21.004 Street name change

(a) An application (request) for a permanent street name change may be filed with the city manager or a designee in the form of a petition signed by:

(1) Not less than fifty (50) percent of all owners abutting the subject city street. Owners of such abutting property shall be determined by the city from the then current city's real property ad valorem tax roll; or

(2) A duly authorized officer or attorney representing a governmental agency or department.

(b) The application shall state:

(1) The present official city name of the street;

(2) The proposed new name;

(3) The name, address and telephone number of one (1) person with authority to represent binding commitments and take official action relative to such street name change on behalf of each unincorporated association, group or entity, if any, applying;

(4) The name of each person, group, agency, or entity requesting the street name change; and

(5) Statement of each reason, from among those hereinafter listed, claimed for such street name change.

(c) The application must be accompanied by the application processing fee as provided for in the fee schedule found in the appendix of this code, payable, unconditionally and without right of any refund, to the city and in the form of cash, cashier's or certified check. The application must also be accompanied by payment or be paid prior to any owner notification by the city, to the city, an amount for the manufacture and installation of new street name signs, calculated as hereinafter prescribed, payable in like form except as to refunds; provided, however, no department of the city shall be required to pay such monies in such forms.

(d) The city manager or a designee shall review each application for street name change for compliance with this article.

(e) The city manager or a designee shall be responsible for sending notification personally, by mail, by telephone, or by any one or combination thereof, to the said abutting owners and/or affected governmental agencies and utilities.

(f) Applications for street name changes may be considered for any one (1) or more of the following reasons, which must be specified in each application:

(1) Technical.

(A) To establish continuity of street's name, i.e, to assure one (1) name of a public way commonly traveled as a single thoroughfare, although the centerlines of segments thereof do not match, as the city council may determine;

(B) To eliminate same spelling duplication, phonetic duplication or misspelling;

(C) To enhance ease of location otherwise;

(D) To bring coherence to the street numbering system designation (east, west, north, south); or

(E) To provide necessary roadway designation (street, road, lane, circle, drive, boulevard, and similar designations).

(2) Recognition. To honor a person, place, institution, group, entity, event and similar subjects.

(3) Neighborhood enhancement. To enhance a neighborhood through association of the street name with its locations, area characteristics, history and the like.

(g) The new street name sign charge shall be determined by the city manager or a designee and shall be based upon an average cost per sign, calculated at the beginning of each fiscal year (considering prevailing and projected market cost, or prior bid cost, or combination thereof in any part, to cover estimated labor and material for installing the standard city street signs) applied to the number of signs the said designee determines to be required for the new street name.

(h) All applications found to be consistent upon review, with a stated reason or reasons and meeting or exceeding the other requirements thereof, will be submitted, along with city staff comments, to the city council for action without public hearing, or for such action after a public hearing if any abutting property owner opposes the proposed street name change. City staff requests for street name changes made necessary by realignment for a major roadway shall not require a public hearing prior to action by the city council. The city council may dispose of any application before it as it deems fit.

(i) Notification will be sent to all interested governmental agencies, utility and service providers, city departments, and the applicant's duly authorized representative or representatives upon approval of the application by the city council.

(j) In the event an application is denied by the city council, the new street sign manufacture and installation charge shall be refunded to the applicant's duly authorized representative or representatives to be payable on unconditional endorsement only, and, if more than one named applicant, payable jointly.

(k) No defect or omission by the city in processing an application or in implementing this section or privilege shall stop, bar, prejudice or impair the free exercise by the city of its powers and duties or materially affect or impair the validity of a city street name change.

ARTICLE 12.22 ANNEXATION OF SUBDIVISIONS

Sec. 12.22.001 Agreement to comply with city requirements

The owner of land outside the city within the extraterritorial jurisdiction of the city who desires to have water and wastewater service extended to such land shall file with the city council and, when applicable, an independent utility company, a written request that such service be extended to such land through facilities constructed to city specifications. Such written request shall be acknowledged as required for deeds and shall contain a request by the owner that the city annex such property to the corporate limits at such time as the city council shall elect to annex the same, or at such time property shall comply with the standards for annexation prescribed in this article.

Sec. 12.22.002 Construction of facilities to urban subdivisions before annexation

Construction of streets, drainage facilities, water and wastewater lines meeting urban subdivision requirements may be installed in subdivisions outside the city limits within the extraterritorial jurisdiction of the city pursuant to the terms of contracts therefore [therefor] entered into by the city, or inspected and approved by the city and the title of such facilities shall vest in the city pursuant to the terms of the contract under which such facilities are constructed.

Sec. 12.22.003 Annexation standards

After the city, or when applicable, an independent utility company has extended water or wastewater service at the request of the owner to a subdivision outside the city limits within the extraterritorial jurisdiction of the city, such land shall be annexed to and be included within the corporate limits of the city at such time as the annexation thereof would result in the disproportionate expense to the other taxpayers of the city. For the purposes of this article, the term “disproportionate expense to the other taxpayers” shall be construed to exist only where ad valorem taxes and service fees which would accrue from such property to the city the next year would be less than the additional cost to the city of providing general government services to such property, based upon the annual cost to the city for operating expenses for general government services reflected in the current budget of the city. Nothing contained in or omitted from the provisions of this article shall be construed to prescribe or limit the circumstances under which the city council may exercise its authority to annex any territory to the corporate limits of the city for all purposes or for any limited purpose.

ARTICLE 12.23 DEFINITIONS

Sec. 12.23.001 Purpose

For the purpose of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

Affected person. Any person whose legal rights, duties or privileges may be adversely affected by NPS pollution from any proposed development for which a permit is sought.

Agricultural activities. All activities associated with the pasturing of livestock or use of the land for planting, growing, cultivating, and harvesting crops for human or animal consumption.

Alley. A minor right-of-way, dedicated to public use, which gives a secondary means of vehicular access to the back or side of properties otherwise abutting a street, and which may be used for public utility purposes.

Annual pollutant load. The amount of pollution in stormwater runoff that is discharged from a developed site over the course of one year; usually measured in pounds and based on an average year of rainfall. (The average annual rainfall in Travis County in the Lake Travis Watershed is 32.5 inches/year.) The annual pollutant load is estimated by multiplying the pollutant concentration by the volume of runoff and does not include the background pollutant load.

Applicant. The owner of land proposed to be subdivided, the developer or the owner’s representative who shall have express written authority by the owner to act on behalf of the owner.

Background pollutant load. The amount of pollution in stormwater runoff that is discharged from a site before development. The background pollutant load is calculated according to the following formula:

(Area of site) x (Annual runoff coefficient) x (Background stormwater pollution concentrations)

The annual runoff coefficient is 0.10. The background stormwater pollution concentrations for total suspended solids, total phosphorous, and oil and grease are 48 mg/l, .08 mg/l, and 0.0 mg/l, respectively.

Best management practices (BMPs). Those practices, including but not limited to those described in LCRA’s technical manual, that prevent or control nonpoint source pollution. Innovative BMPs are those practices designed by the applicant’s engineer to meet or exceed LCRA’s performance standards but which are not described in LCRA’s technical manual.

Block. A parcel of land within a subdivision that is bounded by streets or bounded by streets and the exterior boundary of the subdivision. For this definition, an alley or cul-de-sac is not considered a street, but part of the block.

Board. The board of directors of LCRA.

Buffer. A barrier constructed of wood, masonry, vegetation, and/or other landscape material in such a manner that adjacent uses will be separated to such a degree that objectionable noise, heat, glare, visual clutter, dust, loss of privacy, air circulation, and other negative externalities shall be abated.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

Building official. The director of planning or his/her designee. (Ordinance CO30-12-01-26-C1 adopted 1/26/12)

Building or setback line. A line or lines designating the interior limit of the area of a lot between said line and the corresponding line within which area structures may not be erected. The building lines typically provide the boundaries of the buildable area of any given lot.

Cash contribution. An equivalent cash value contribution to the city for parkland property acquisition or parkland improvement costs in lieu of dedication of actual parkland property[.]

City. The City of Cedar Park.

City council or council. The city council of the City of Cedar Park.

City staff. The officers, employees and agents of the city assigned and designated from time to time by the city administrator and/or council to review and/or comment and report on development plans.

Collector street. A street moving traffic between local streets and thoroughfares or serving development other than single-family residential.

Commencement of development. The commencement of significant physical site preparation, including clearing, grading, or leveling.

Commercial development. All development other than open space, single-family residential development.

Commission or planning and zoning commission. The planning and zoning commission of the City of Cedar Park.

Concept plan. Means a generalized plan that meets the requirements of this chapter and that indicates the boundaries of a tract or tracts under common ownership, identifies the purpose of the proposed development and the proposed land use, general lot or parcel layout, community use or public areas, and street alignments.

Condominium. A building unit available for sale in fee simple contained in a multioccupancy project with common undivided interest in the land and subject to covenants and restrictions placing control over the common facilities in an elected board.

Construction plans. The maps, drawings, plans and specifications indicating the proposed location and design of improvements to be installed as part of a development.

Corner lot. A lot located at the intersection of and abutting on two (2) or more streets.

Creek. A channel or bed conveying a body of running water in wet weather conditions.

Development. All land modification activity, including the construction of buildings, roads, paved storage areas, and parking lots. "Development" also includes any land disturbing construction activities or human-made change of the land surface, including clearing of vegetative cover, excavating, dredging and filling, grading, contouring, mining and the deposit of refuse, waste, or fill. Care and maintenance of lawns, gardens, and trees, minimal clearing (10 feet wide) for surveying and testing, and agricultural activities are excluded from this definition.

District. LCRA's ten-county statutory district, which includes San Saba, Llano, Burnet, Blanco, Travis, Bastrop, Fayette, Colorado, Wharton, and Matagorda Counties[.]

Double frontage lot. Any lot with frontage on two (2) streets that are parallel to each other. For purposes of these regulations related to building setback lines, both opposing frontages of a double frontage lot are treated as the "front". The building setback for the rear frontage (that is opposite of the front of the principle structure), or to which access is prohibited, shall only regulate the setback for the principle structure and shall not regulate the setback for covered porches or decks, swimming pools, accessory structures, etc. which, if within city limits, shall instead be regulated by the normal rear yard setback of the zoning ordinance.

Easement. Easement shall mean a right granted for the purpose of limited public or semipublic use across, over or under private land.

Erosion. The detachment and movement of soil, sediment or rock fragments by wind, water, ice, or gravity.

Existing development. For the purposes of this chapter, includes completed development, or any development that is not complete, but which has obtained final plat approval from a governmental entity, prior to February 1, 1990.

Extraterritorial jurisdiction (ETJ). Shall mean that area of land lying outside and adjacent to the corporate limits of the City of Cedar Park over which the City of Cedar Park has legal control as set forth in chapter 42 of Local Government Code.

Final plat. The map of a subdivision with appropriate recording, dedication, approval and acknowledgement notes to be recorded after approval by the planning and zoning commission and any accompanying material as described in these regulations.

Flag lot. Lot configurations where the perimeter lot geometry reflects the shape of a 'flag' where the narrow or elongated part of the lot abuts a public or private street and widens at the building setback line to accommodate a buildable development site.

Frontage. That side of a lot abutting on a street or way. For lots that have two or more lot frontages, the lot frontage with the narrowest dimension is considered the front of the lot for purposes of building setback. (Also see definition for "double frontage lot".)

Heritage tree. Any of the following:

(1) Trees that have a 26-inch diameter when measured at 4.5 feet abovegrade.

(2) Any tree or stand of trees designated by resolution of the city council to be of historical value or of significant community benefit.

Impervious cover. A surface that reduces the amount of penetration of water into the earth. (ex. structures, asphalt, concrete)

Increased pollutant load. The annual pollutant load minus the background pollutant load.

Industrial street. A collector street that serves as principal access to industrial development.

Jurisdictional area. This article shall be applied within the portion of the Lake Travis Watershed in Travis County located within the city's extraterritorial jurisdiction and/or city limits.

Lake. The area within the normal conservation pool elevation of Lake Travis (681 foot contour).

Lake Travis Watershed. All land draining into Lake Travis. The Lake Travis Watershed in Travis County is depicted on Exhibit "A" to this article [attached to Ordinance CO42-07-07-12-3I], which is incorporated by reference herein.

Land user. Any person operating, leasing, renting, or having made other arrangements with the landowner by which the landowner authorizes use of his or her land.

Landowner. Any person holding title to or having an interest in land.

Large or significant development. A development that LCRA believes may have a direct water quality impact to an adjacent property owner or to an area.

LCRA. Lower Colorado River Authority.

Legal lot. Either a lot recorded in the official county records pursuant to and in compliance with the subdivision regulations in effect at the time of its creation, or a tract of land having existed in its present configuration prior to December 9, 1974[.]

Local street. A street whose primary function is to provide access to abutting single-family homes and to provide right-of-way beneath it for sewer, water, and storm drainage facilities.

Major residential subdivisions. Subdivisions with fifty (50) or more proposed dwelling units.

Master plan. Document submitted as a portion of the NPS permit application which describes development intended to be conducted in phases. Submittal and approval of a master plan shall occur prior to approval of a city NPS pollution control permit. Applications submitted for projects that are intended to be developed in phases shall be approved in a two step process. Upon approval of the master plan, the applicant shall complete the permit application for the first phase and each subsequent phase of the project.

Minor residential subdivisions. Subdivisions with fewer than fifty (50) proposed dwelling units.

Multifamily development. Any building that contains three (3) or more attached units designed for residential use (e.g. apartments, town homes, etc.).

Nonpoint source (NPS) pollution. Pollution that is caused by or attributable to diffuse sources. Such pollution results in the human-made or human-induced alteration of the chemical, physical, biological, or radiological integrity of water. Typically, NPS pollution results from land runoff, precipitation, atmospheric deposition, or percolation.

NPS best management practice (BMP) maintenance permit. A permit for the maintenance of best management practices (BMPs) or other NPS pollution control measures. This permit may be issued upon satisfactory completion of development and after issuance of a NPS pollution control permit. The NPS best management practice (BMP) maintenance permit may be issued to a person other than the original permit applicant if the person is the landowner or property owner's association, as applicable.

NPS development permit. A permit for development of land within the jurisdictional area specifically identifying best management practices for control of nonpoint source pollution resulting from development. Private land owners/land users that install utility infrastructures are also required to obtain a NPS development permit.

NPS pollution control permit. A permit issued by the city upon an approval of an applicant's permit application. The permit includes the approved NPS pollution controls (BMPs).

NPS pollution control technical manual. The manual developed by LCRA that explains various BMPs that, when implemented, should achieve the performance standards and other requirements set forth in this article.

NPS pollution controls. Those best management practices (BMPs), including but not limited to those described in LCRA's technical manual, that prevent or control nonpoint source pollution.

Parkland. The actual property on which the public park will be situated. It is also referred to as the property to be dedicated by the property owner to the city pursuant to city parkland dedication requirements.

Parkland contribution. The actual dedication of parkland property to the city by way of plat note, dedication shown on plat and general warranty deed.

Parkland improvements. Improvements to the city-owned parkland that allow the parkland to be utilized as public parks.

Permit amendment. A revision to an NPS pollution control permit issued by the LCRA after an application for such amendment has been received and reviewed, and the expansion, redevelopment, or modification plans have been found to be in compliance with this article and the technical manual. Permit amendment procedures are described in the technical manual.

Permittee. A landowner or land user who is undertaking land development activities pursuant to a permit granted according to the provisions of this article.

Person. Any individual, organization, trust, partnership, firm, association, public or private corporation, political subdivision, or any other legal entity.

Phased development. Development of land in excess of two hundred fifty (250) acres according to a master plan which occurs in stages and over an extended period of time.

Pollution. 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, property, or public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Preliminary plan. A preliminary drawing or drawings, shall be any plat of any lot, tract or parcel of land that is not to be recorded of record, but is only a proposed division of land for review and study by the city and used by the applicant in development of final plat and construction plans for the property. Preliminary plans are to be submitted to the planning commission for approval.

Protected tree. Any of the following:

(1) A tree having a trunk of sixteen (16) inches DBH or more, measured 4.5 feet above ground level; or

(2) A multitrunk tree having a total trunk DBH adding to thirty (30) inches or more (not counting trunks less than eight (8) inches in diameter); or

(3) A cluster of trees within a ten (10) foot radius circle having total DBH of forty (40) inches or more (not counting trunks less than eight (8) inches in diameter).

Public parks. Large tracts of land usually with grass and trees improved for public use and recreation.

Public utility. A person or entity that owns or operates for compensation facilities or equipment for producing, generating, transmitting, selling or furnishing electricity, water, sewer service, cable or telephone services.

Public works department. Engineering and field operations departments of the city.

Rear yard. A space extending across the full width of the lot between the principal building and the rear lot line, and measured perpendicular to the building to the closest point of the rear lot line.

Resubdivision. The division of an existing subdivision or of any or part or all of any block or blocks of a previously platted subdivision, addition, lot or tract.

Right-of-way. A strip of land occupied or intended to be occupied by street, crosswalk, railroad, road, electric transmission line, or oil or gas pipe line, water main, sanitary or storm sewer main, or for other similar purpose or use. The usage of the term "right-of-way" for land platting purposes shall mean that every right-of-way hereinafter established and shown on the final plat is to be separate and distinct from the lots or parcels adjoining such right-of-way and not included within the dimensions or areas of such lots or parcels. Right-of-way intended for streets, crosswalks, water mains, wastewater lines, storm drains, or any other use involving maintenance by a public agency shall be dedicated to the public by the maker of the plat where such right-of-way is established.

Rural subdivision. A subdivision located in the ETJ, having lot sizes larger than two (2) acres.

Scoping meeting. Meeting in which to determine the project description (location, size, number and location of driveways), trip generation rates, trip distribution, study area, and any other relevant data that may impact the traffic study.

Sedimentation. Pollution resulting from the deposit of detached soil particles.

Side yard. A space extending from the front yard to the rear yard between the setback line and the side lot line measured perpendicular from the side lot line to the closest point of the setback line.

Single-family development. One- and two-family dwelling units.

Site. The entire area included in the legal description of the land on which development is proposed in the permit application.

Storm sewer system. Conveyance of stormwater through a manmade structure such as pipe, culvert, etc.

Street width. The shortest distance between the lines that delineate the right-of-way of a street.

Subdivider. The property owner or assign legally authorized to process a subdivision as described within this chapter.

Subdivision. Is the division of any lot, tract or parcel of land into two (2) or more lots or sites for the purpose of sale or of building development whether immediate or future. Said term also includes the resubdivision of any lot, tract or parcel of land. Subdivision shall also include the development within the corporate limits of the city or within its extraterritorial jurisdiction.

Suburban subdivision. A subdivision within the city's ETJ utilizing wells and/or individual septic systems for each lot.

Thoroughfare. A minor or major arterial, more or less continuous across the city, which is intended to connect parts of the city or areas adjacent thereto and to act as a principal connecting street with state and federal highways.

Townhouse lot. Is a parcel of land designed to be developed with a townhouse defined as a single-family dwelling unit structure having a common wall with one (1) or more adjoining dwelling unit structures.

Ultimate residents. The number of residents projected to live in a subdivision at the time of completion.

Unnecessary hardship. An unfairly burdensome hardship that does not permit any reasonable use of the subject property and flows from a uniform application of the city's subdivision ordinance. It does not include property that cannot be used for its highest and best use, financial or economic hardship, self-created or self-imposed hardship or the development objectives of the property owner are or will be frustrated.

Urban subdivision. A subdivision within the city limits or the ETJ of the city that will utilize city utilities or other centralized water and wastewater system.

Variance. A grant of relief to a person from the requirements of this chapter when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this chapter.

(Ordinance CO42-07-07-12-3I adopted 7/12/07)

APPENDIX P

CONCRETE BATCH PLANT RECORDS

APPENDIX Q

EDWARDS AQUIFER RULE
TAC TITLE 30 CHAPTER 213

(Applies to Edwards Aquifer Only)

Effective Date: March 31, 2011

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Permanent Rule Change

Rule Project Number 2010-055-311-OW
Discharge of Pesticides into, Over or Near the Highland Lakes and
Areas Over the Edwards Aquifer

Chapter 213
Edwards Aquifer
Subchapter C

Chapter 311
Watershed Protection
Subchapter I

1. Purpose. This change transmittal provides the pages that reflect changes and additions to the Texas Commission on Environmental Quality (commission) Volume of Permanent Rules.

2. Explanation of Change. On March 9, 2011, the commission adopted new §213.31 *without changes* to the proposed text as published in the December 10, 2010, issue of the *Texas Register* (35 TexReg 10813) and was not republished**.** Also adopted was new §311.91 *without changes* to the proposed text as published in the December 10, 2010, issue of the *Texas Register* (35 TexReg 10899) and was not republished.

3. Effects of Change. The Office of Compliance and Enforcement and the Office of Water are adding Subchapter C to Chapter 213, and Subchapter I to Chapter 311, authorizing the application of pesticides within the Highland Lakes and Edwards Aquifer recharge, contributing, and transition zones. Both Chapters 213 and 311 currently contain discharge prohibitions or areas where increased pollutant load is prohibited. Pesticide usage is required for the continued protection of human health and the environment. This rulemaking is a follow-up to Project No. 2010-058-PET-NR, which is a Petition for Rulemaking that was filed with the commission on September 9, 2010, by the Texas Park and Wildlife Department.

HISTORY PAGE

CHAPTER 213
EDWARDS AQUIFER

Rule Project No. 2010-055-311-OW
Discharge of Pesticides into, Over or Near the Highland Lakes and Areas Over the Edwards Aquifer
New: §213.31
Date Adopted: March 9, 2011
Date Filed with the Secretary of State: March 11, 2011
Date Published in the *Texas Register*: March 25, 2011
Date Effective: March 31, 2011

Rule Project No. 2007-032-213-CE
HB 3098: Edwards Aquifer Fees
Amendments to: §§213.9, 213.13, 213.14, 213.26 - 213.28
Date Adopted: April 2, 2008
Date Filed with the Secretary of State: April 4, 2008
Date Published in the *Texas Register*: April 18, 2008
Date Effective: April 24, 2008

Rule Project No. 2003-029-213-PR
Remapping of Edwards Aquifer Recharge Zone
Amendments to: §§213.1, 213.3, 213.4, 213.12, 213.20 - 213.22, 213.24, 213.27
Date Adopted: August 10, 2005
Date Filed with the Secretary of State: August 12, 2005
Date Published in the *Texas Register*: August 26, 2005
Date Effective: September 1, 2005

Rule Log No. 2001-051A-213-WT
Senate Bill 405: Edwards Aquifer
Amendments to: §213.3, §213.5
Date Adopted: July 23, 2003
Date Filed with the Secretary of State: July 25, 2003
Date Published in the *Texas Register*: August 8, 2003
Date Effective: September 1, 2003

Rule Log No. 2001-093-331-WS
Senate Bill 2, §11.03 (Ban on Injection Wells in Edwards Aquifer)
Amendments to: §213.3, §213.8
Date Adopted: October 10, 2002
Date Filed with the Secretary of State: October 14, 2002
Date Published in the *Texas Register*: October 25, 2002

Date Effective: November 3, 2002

Rule Log No. 2001-086-213-WT
HB 2912 Art. 10: Edwards Aquifer Protection Plans Comment Period
Amendments to: §213.4 and §213.23
Date Adopted: June 26, 2002
Date Filed with the Secretary of State: June 28, 2002
Date Published in the *Texas Register*: July 12, 2002
Date Effective: July 19, 2002

Rule Log No. 2002-006-213-WT
Quadrennial Review of Chapter 213
Date Adopted: May 8, 2002
Date Filed with the Secretary of State: May 10, 2002
Date Published in the *Texas Register*: May 24, 2002
Date Effective: May 10, 2002

Rule Log No. 97105-213-WT
Edwards Aquifer Phase II
Amendments to: §§213.3 - 213.10
New: §§213.20 - 213.28
Date Adopted: September 23, 1998
Date Filed with the Secretary of State: September 25, 1998
Date Published in the *Texas Register*: October 9, 1998
Date Effective: June 1, 1999

Rule Log No. 97134-213-WT
Edwards Aquifer Program Fee/House Bill 1016
Amendments to: §213.14
Date Adopted: October 15, 1997
Date Filed with the Secretary of State: October 20, 1997
Date Published in the *Texas Register*: October 31, 1997
Date Effective: November 14, 1997

New: §§213.1 - 213.14
Date Adopted: December 4, 1996
Date Filed with the Secretary of State: December 6, 1996
Date Effective: December 27, 1996

INDEX

CHAPTER 213
EDWARDS AQUIFER

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

SUBCHAPTER B: CONTRIBUTING ZONE TO THE EDWARDS AQUIFER IN MEDINA, BEXAR, COMAL, KINNEY, UVALDE, HAYS, TRAVIS, AND WILLIAMSON COUNTIES

SUBCHAPTER C: DISCHARGE OF PESTICIDES

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.

SUBCHAPTER B: CONTRIBUTING ZONE TO THE EDWARDS AQUIFER IN MEDINA, BEXAR, COMAL, KINNEY, UVALDE, HAYS, TRAVIS, AND WILLIAMSON COUNTIES
§§213.20 - 213.28
Effective April 24, 2008

§213.20. Purpose.

(a) The purpose of this subchapter is to regulate activities in the contributing zone to the Edwards Aquifer having the potential for polluting surface streams which recharge the Edwards Aquifer and to protect existing and potential beneficial uses of groundwater in the Edwards Aquifer.

(b) Nothing in this subchapter is intended to restrict the powers of the commission or any other governmental entity to prevent, correct, or curtail activities in the contributing zone that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. This subchapter is not exclusive and other rules also apply. In addition to the rules of the commission, the Texas general and individual permits for storm water discharges from construction activities and local ordinances and regulations providing for the protection of water quality may also apply to activities in the contributing zone.

(c) The executive director must review and act on contributing zone plans subject to this subchapter. 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 a contributing zone plan or modification to a plan.

Adopted August 10, 2005 Effective September 1, 2005

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

(a) This subchapter applies only to the contributing zone as defined in §213.22 of this title (relating to Definitions) of the Edwards Aquifer. This subchapter is not intended to be applied to any other contributing zones for any other aquifers in the State of Texas.

(b) This subchapter applies only to regulated activities disturbing at least five acres, or regulated activities disturbing less than five acres which are part of a larger common plan of development or sale with the potential to disturb cumulatively five or more acres.

(c) Areas identified as contributing zone within the transition zone described by §213.22 of this title and delineated on the official recharge and transition zone maps of the agency as provided by §213.3 of this title (relating to Definitions), are subject to both the requirements of this subchapter governing the contributing zone and to the provisions of the recharge zone in §213.5(a)(3) and (4), (c)(3)(K), and (d) - (f) of this title (relating to Required Edwards Aquifer Protection Plans, Notification, and Exemptions); §213.6(a) and (b) of this title (relating to Wastewater Treatment and Disposal Systems); §213.7 of this title (relating to Plugging of Abandoned Wells and Borings); and to the transition zone provisions of §213.8(b) of this title (relating to Prohibited Activities).

(d) Unless otherwise provided under this subchapter, executive director approval of a contributing zone plan must be obtained prior to beginning construction of a new or additional regulated activity.

(e) Regulated activities are allowed to be conducted under this subchapter only by applicants who have a letter of contributing zone plan approval issued by the executive director. This letter is issued under §213.23 of this title (relating to Plan Processing and Approval).

(f) Applicable regulation for projects in progress when contributing zone or contributing zone within the transition zone designations are revised.

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

(2) For areas that were newly designated as contributing zone or contributing zone within the transition zone on official maps on the effective date of this subsection, 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 section.

(3) The effective date of this subsection is September 1, 2005.

(g) Assumption of program by local government.

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

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

(A) it has a water quality protection program equal to or more stringent than the rules contained in this subchapter, 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;

(B) it has adopted ordinances or has other enforceable means sufficient to enforce the program throughout the local governmental entities jurisdiction; and

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

(3) Upon approval of a request for certification under this subsection, 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.

(4) An agreement under paragraph (3) of this subsection 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.

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

(6) 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 paragraph (4) of this subsection or fails to meet the criteria for certification provided under paragraph (2) of this subsection.

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

Adopted August 10, 2005 Effective September 1, 2005

§213.22. Definitions.

The definitions in Texas Water Code, §§26.001, 26.263, and 26.342, and in §213.3 of this title (relating to Definitions) apply to this subchapter. Those definitions have the same meaning unless the context in which they are used clearly indicates otherwise, or those definitions are inconsistent with the definitions listed in this section.

(1) **Best management practices** - Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to the Edwards Aquifer and hydrologically connected surface streams. Best management practices also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

(2) **Contributing zone** - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is illustrated on Contributing Zone (Southern Part) for the Edwards Aquifer and Contributing Zone (Northern Part) for the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties:

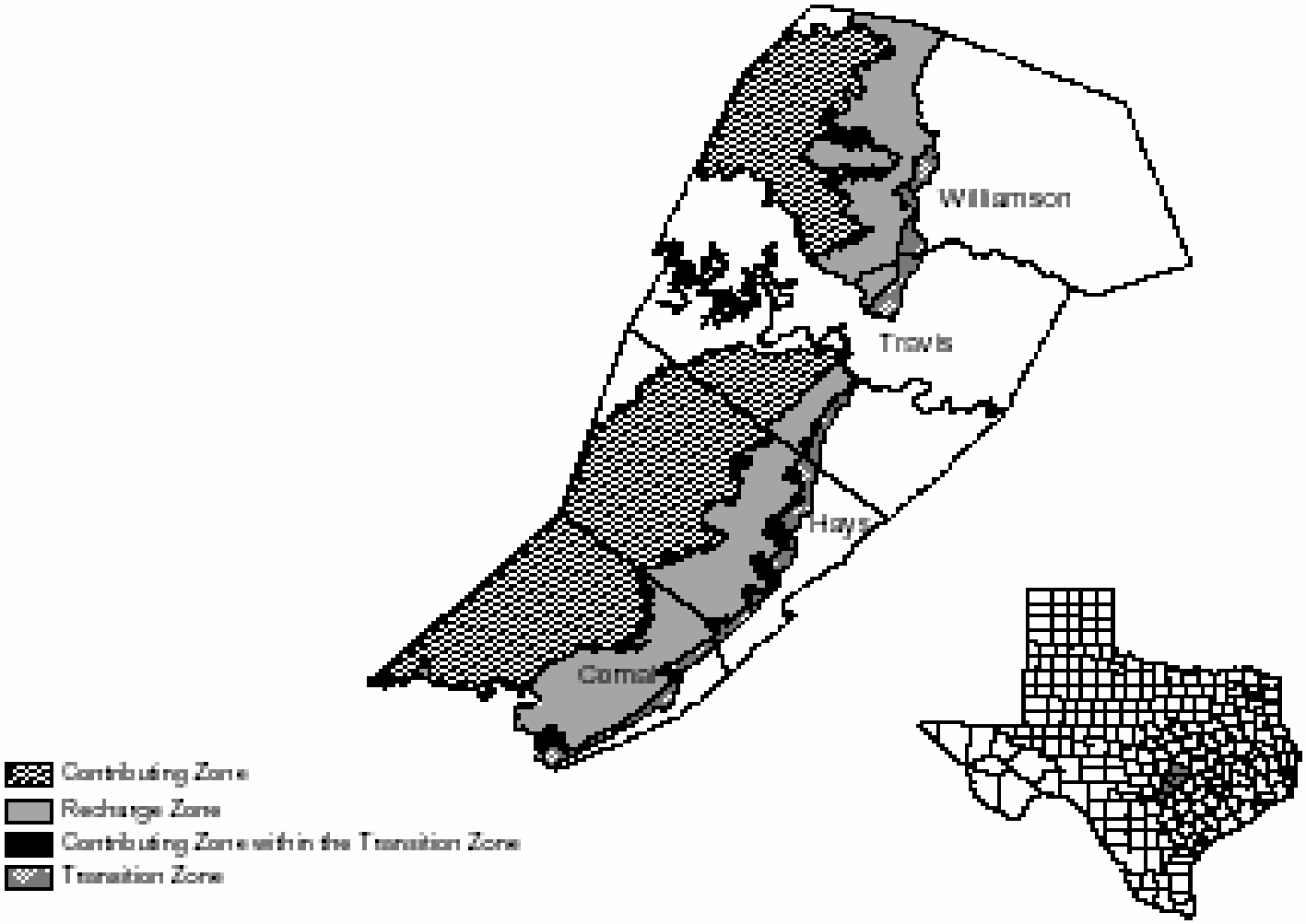

Figure 2: § 213.22 Contributing Zone (Northern Part) for the Edwards Aquifer

(A) all areas within Kinney County, except the area within the watershed draining to Segment 2304 of the Rio Grande Basin;

(B) all areas within Uvalde, Medina, Bexar, and Comal Counties;

(C) 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 1403 of the Colorado River Basin; and

(D) all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment 1216 of the Brazos River Basin.

(3) **Contributing zone within the transition zone** - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone within the transition zone is depicted in detail on the official recharge and transition zones maps of the agency as provided for in §213.3 of this title (relating to Definitions). The contributing zone within the transition zone is located generally south and east of the recharge zone and includes specifically those areas where stratigraphic units not included in the Edwards Aquifer crop out at topographically higher elevations and drain to stream courses where stratigraphic units of the Edwards Aquifer crop out and are mapped as recharge zone.

(4) **Texas Pollutant Discharge Elimination System permits for storm water discharges from construction activities (TPDES permits)** - Texas Pollutant Discharge Elimination System general or individual permits issued by the agency for storm water discharges from construction activities in Texas.

(5) **Notice of intent (NOI)** - Notice of intent required by the Texas Pollutant Discharge Elimination System general permits for storm water discharges from construction activities.

(6) **Regulated activity** -

(A) Any construction or post-construction activity occurring on the contributing zone of the Edwards Aquifer that has the potential for contributing pollution to surface streams that enter the Edwards Aquifer recharge zone.

(i) These activities include construction or installation of:

(I) buildings;

(II) utility stations;

(III) utility lines;

(IV) underground and aboveground storage tank systems;
(V) roads;

(VI) highways; or

(VII) railroads.

(ii) Clearing, excavation, or other activities which alter or disturb the topographic or existing storm water runoff characteristics of a site are regulated activities.

(iii) Any other activities that pose a potential for contaminating storm water runoff are regulated activities.

(B) "Regulated activity" does not include:

(i) the 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 or gas or geothermal resources under the jurisdiction of the Railroad Commission of Texas;

(iv) routine maintenance of existing structures that does not involve site disturbance including, 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 that present little or no potential for contaminating hydrologically-connected surface water;

(v) routine maintenance that involves little or no change to the topographic or geologic features; or

(vi) 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.

(7) **Site** - The entire area within the legal boundaries of the property described in the application. Regulated activities on a site located partially on the recharge zone and the contributing zone must be treated as if the entire site is located on the recharge zone, subject to the requirements under Subchapter A of this chapter (relating to Edwards Aquifer in Medina, Bexar, Comal, Kinney, Uvalde, Hays, Travis, and Williamson Counties).

§213.23. Plan Processing and Approval.

(a) Approval by executive director.

(1) No person may begin the construction of any regulated activity until a contributing zone plan or modification to a plan as required by §213.21 of this title (relating to Applicability and Persons or Entity Required to Apply) has been:

(A) filed with the appropriate regional office, and

(B) the application has been reviewed and approval letter issued 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 of a contributing zone plan, as described in this section, must be submitted with a copy of the notice of intent and the appropriate fee as specified in §213.27 of this title (relating to Contributing Zone Plan Application and Exception Fees). The application may be submitted to the executive director for approval prior to the submittal of the notice of intent to the EPA.

(b) Contents of application. Applications for contributing zone plan approval filed under this subchapter must be made on forms provided by or approved by the executive director. Each application must, at a minimum, include the following:

(1) the name of the development, subdivision, or facility for which the application is submitted and the name, address, and telephone number of the owner or any other persons signing the application;

(2) 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;

(3) a technical report as described under §213.24 of this title must accompany the application for plan approval; and

(4) any additional information needed by the executive director for plan approval.

(c) Submission of application.

(1) Submit one original and one copy 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 the following may submit an application for review and approval by the executive director:

(A) owner(s);

(B) the owner(s)' authorized agent(s); or

(C) those persons having the right to possess and control the property which is the subject of the contributing zone plan.

(d) Signatories to applications. All applications must be signed as specified under §213.4(d)(1) of this title (relating to Required Signature). 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 include all information listed in this section and failure to pay all applicable application fees.

(f) Additional provisions. As a condition of contributing zone plan approval, the executive director may impose additional provisions necessary to protect the Edwards Aquifer from pollution. The executive director may conditionally approve a contributing zone plan or impose special conditions on the approval of a contributing zone plan. Upon inspection, the executive director may require the applicant to take additional measures if the activities do not conform to an approved plan or the plan did not address all potential sources of pollution as required by these rules.

(g) Term of approval. The executive director's approval of a contributing zone 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 is where more than ten percent of total construction has commenced. If a written request for an extension is filed under the provisions of this subsection, the approved plan continues in effect until the executive director acts 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 contributing zone plan or a previously approved extension. Requests for extensions are subject to fees outlined in §213.28 of this title (relating to Fees Related to Requests For Contributing Zone Plan Approval Extension).

(2) An executive director's approved extension will expire six months after the original expiration date of the approved contributing zone 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) A plan approval will expire and no extension will be granted if less than 50 percent of the total construction has been completed within ten years from the initial approval of a plan. A new 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 contributing zone plan or a previously approved extension will not be accepted. A new application for the purposes of this subchapter 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 under an approved plan has changed.

(h) Legal transfer of property. Upon legal transfer of property, the new owner(s) is required to comply with all terms of the approved contributing zone plan. If the new owner intends to commence any new regulated activity on the site, a new application for plan approval for the new activity must be filed with and approved by the executive director beforehand.

(i) Modification of a previously approved plan. The holder of any approved contributing zone plan letter 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 best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;

(2) any change in the nature or character of the regulated activity from that which was originally approved;

(3) a change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or

(4) any development of land previously identified in a contributing zone plan as undeveloped.

(j) Compliance. The holder of the approved or conditionally approved contributing zone plan letter is responsible for compliance with this subchapter and the approved plan. The holder is also responsible for any special conditions of an approved plan through all phases of plan implementation. Failure to comply with any rule or condition of the executive director's approval is a violation of this rule and is subject to administrative orders and penalties as provided under §213.25 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction.

(k) Responsibility for maintenance of permanent best management practices (BMPs) and measures after construction is complete.

(1) 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.

(2) A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the assumption of the obligation or the transfer of ownership.

(3) This section applies to:

(A) multiple single-family residential developments, multi-family residential, and

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

Adopted June 26, 2002 Effective July 19, 2002

§213.24. Technical Report.

For all regulated activities, a technical report must accompany the application for contributing zone plan approval. The report must address the following issues. The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the Texas Pollutant Discharge Elimination System (TPDES) general permits for storm water discharges may be submitted to fulfill paragraphs (1) - (5) of this section, providing the following requirements are met.

(1) The report must contain a location map and the site plan.

(A) The location map must be a legible road map with directions, including mileage, which would enable the executive director to locate the site for inspection.

(B) The site plan must be drawn at a minimum scale of one inch to 400 feet. The site plan must show:

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

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

(iii) a drainage plan showing all paths of drainage from the site to surface streams;

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

(v) areas of soil disturbance and areas that will not be disturbed;

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

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

(viii) surface waters (including wetlands); and

(ix) locations where storm water discharges to a surface water.

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

(A) the size of the site in acres;

(B) the projected population for the site;

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

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

(E) other factors that could affect the surface water quality.

(3) The report must describe the volume and character of storm water runoff expected to occur. Estimates of storm water runoff quality and quantity should be based on area and type of impervious cover, as described in paragraph (2)(C) of this section. An estimate of the runoff coefficient of the site for both the pre-construction and post-construction conditions should be included in the report.

(4) The report must describe any activities or processes that may be a potential source of contamination and must provide the following information:

(A) the intended sequence of major activities that disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities, and infrastructure installation);

(B) estimates of the total area of the site that is expected to be disturbed by excavation, grading, or other activities;

(C) a site map indicating the following: approximate slopes anticipated after major grading activities; areas of soil disturbance; areas that will not be disturbed; locations of major structural and nonstructural controls identified in the technical report; locations where stabilization practices are expected to occur; surface waters (including wetlands); and locations where storm water discharges to a surface water;

(D) location and description of any discharge associated with industrial activity other than construction; and

(E) the name of the receiving water(s) at or near the site that will be disturbed or will receive discharges from disturbed areas of the project.

(5) The report must describe the temporary best management practices (BMPs) and measures that will be used during construction. The technical report must clearly describe for each major activity identified in paragraph (4) of this section appropriate control measures and the general timing (or sequence) during the construction process when the measures will be implemented. The SWPPP developed under the TPDES general permits for storm water discharges may be submitted to fulfill this part of the technical report providing the following requirements are met.

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

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

(C) A plan for the inspection of the temporary BMPs and measures and for their timely inspection, maintenance, repair, and, if necessary, retrofit must be included in the report.

(D) BMPs and measures must meet the requirements contained in §213.5(b)(4)(D)(i) of this title (relating to Required Edwards Aquifer Protection Plans, Notification, and Exemptions).

(E) Temporary sediment pond or basin construction plans and design calculation 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.

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

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

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

(I) Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

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

(6) The report must describe the permanent BMPs and measures that will be used after construction.

(A) BMPs and measures must prevent pollution of surface water or storm water originating on-site or upgradient from the site and flows across the site.

(B) BMPs and measures must prevent pollution of surface water downgradient of the site, including pollution caused by contaminated storm water runoff from the site.

(C) BMPs and measures must meet the requirements contained in §213.5(b)(4)(D)(ii) of this title.

(i) 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.

(ii) The technical report must contain a plan for the inspection of the permanent BMPs and measures and for their timely inspection, maintenance, repair, and, if necessary, retrofit, if requirements contained in §213.5(b)(4)(D) of this title are not being met. This plan must be prepared by the engineer designing the permanent BMPs and measures and signed by the owner or responsible party.

(iii) Pilot-scale field testing (including water quality monitoring) may be required for permanent BMPs and measures 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 surface water that enters the recharge zone of the Edwards Aquifer.

(III) If the innovative technology demonstrates adequate protection, additional units may be approved for use as permanent BMPs and measures on the contributing zone.

(IV) If the innovative technology demonstrates inadequate protection of surface streams that enter the recharge zone of the Edwards Aquifer, a retrofit of the permanent BMP may be required to achieve compliance with §213.5(b)(4)(D) of this title and no additional units will be approved for use on the contributing zone.

(7) The technical report must describe the measures that will be taken to avoid or minimize surface stream contamination, or changes in the way that water enters a stream as a result of construction and development. The measures should address the following:

(A) increased stream flashing;

(B) the creation of stronger flows and instream velocities; and

(C) other instream effects caused by the regulated activity that increase erosion that results in water quality degradation.

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

(A) 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.

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

(C) If wastewater is to be discharged in the contributing zone, requirements under §213.6(c) of this title (relating to Wastewater Treatment and Disposal Systems) must be satisfied.

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

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

(B) Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from the five-year floodplain of any stream drainage.

(10) The technical report must indicate the placement of permanent aboveground storage tank facilities. Permanent aboveground storage tank facilities for static hydrocarbons and hazardous substances with cumulative storage capacity of 500 gallons or greater must be constructed, and spills removed using the standards contained in §213.5(e)(1) of this title.

(11) Exemption.

(A) Regulated activities exempt from the contributing zone plan application requirements under this section are:

(i) the installation of underground utilities, including:

(I) storm and sanitary sewage lines;

(II) natural gas lines;

(III) telephone lines;

(IV) electric lines; and

(V) water lines; and

(ii) the installation of underground tanks for the storage of static hydrocarbons and hazardous substances.

(B) 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 contributing zone plan application requirements under this subchapter, provided that the land owner does not exceed 20% impervious cover on the site.

(C) Temporary erosion and sedimentation controls are required to be installed and maintained for exempted activities on the contributing zone. All temporary erosion and sedimentation controls must meet the requirements contained in paragraph (5) of this section, must be installed prior to construction, must be maintained during construction, and may be removed only when vegetation is established and the construction area is stabilized. This subparagraph does not apply to single-family residences on a site greater than five acres or on a site less than five acres and not a part of a common plan of development or sale with the potential to disturb cumulatively five or more acres.

(D) 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 August 10, 2005 Effective September 1, 2005

§213.25. 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 subchapter,

(2) an approved or conditionally approved contributing zone plan or letter, 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

§213.26. Exceptions.

(a) Granting of exceptions. Exceptions to any substantive provision of this subchapter related to the protection of water quality may be granted by the executive director if the requestor can demonstrate equivalent water quality protection for surface streams which enter the recharge zone of the Edwards Aquifer. 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 subchapter relating to the protection of water quality must file an original and one copy 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 §213.27 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

213.27. Application Fees.

(a) The person submitting an application for approval or modification of any contributing zone plan under this subchapter must pay an application fee in the amount set forth in subsection (b) of this section. The fee is due and payable at the time the application is filed. The fee must be sent to either the appropriate regional office or the cashier in the agency headquarters located in Austin, accompanied by an Edwards Aquifer Contributing Zone 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.

(b) For contributing zone plans and modifications to those plans, the application should be based on the classification and the total acreage of the site where regulated activities will occur as specified in Table 2 of this subsection.

Figure 30 TAC §213.27(b)

Table 2

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

Adopted April 2, 2008 Effective April 24, 2008

§213.28. Fees Related to Requests for Extensions.

The person submitting an application for an extension of an approval of any contributing zone plan under this subchapter 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 §213.27 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 contributing zone plan application and approval letter that is the subject of the extension request.

Adopted April 2, 2008 Effective April 24, 2008

SUBCHAPTER C: DISCHARGE OF PESTICIDES
§213.31
Effective March 31, 2011

§213.31. Discharge of Pesticides.

Discharges associated with pesticide applications authorized by the commission or exempted from permit requirements by federal or state statute are exempt from the prohibition of increased pollutant load found in Subchapters A and B of this chapter (relating to Edwards Aquifer).

Adopted March 9, 2011 Effective March 31, 2011

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

I Howard Yao,
Print Name

_____,
Title - Owner/President/Other

of Thirty Three South Bell LLC d/b/a/ Soapy Falls Cedar Park,
Corporation/Partnership/Entity Name

have authorized Bradley G. Lane, P.E.
Print Name of Agent/Engineer

of TRE & Associates, LLC.
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

5/28/25
Date

THE STATE OF Texas §

County of Dallas §

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

GIVEN under my hand and seal of office on this 28th day of May, 2025

NOTARY PUBLIC

ALISHA PRICE
Notary Public, State of Texas
Comm. Expires 08-30-2028
Notary ID 130801015

Alisha Price
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08.30.2028

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Cluck Creek Business Subdivision
Regulated Entity Location: 710 S. Bell Blvd. Cedar Park, TX 78613
Name of Customer: Soapy Falls Express Car Wash
Contact Person: Bradley G. Lane, P.E. Phone: 512-358-4049
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN 110895620

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1.7633 Acres	$ 4,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 5/28/2025

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN		**RN 110895620**

SECTION II: Customer Information

4. General Customer Information

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

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

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

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

Thirty Three South Bell Investments LLC d/b/a Soapy Falls Cedar Park

If new Customer, enter previous Customer below:

1900 Lakeline LLC

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
805982121		33-4566520	

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited

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

12. Number of Employees

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

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

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

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

15. Mailing Address:	652 Scenic Drive						
	City	Irving	**State**	TX	**ZIP**	75039	**ZIP + 4**

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(972) 832-9883		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Cluck Creek Business Subdivision

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	710 S. Bell Blvd.							
	City	Cedar Park	**State**	TX	**ZIP**	78613	**ZIP + 4**	
24. County								

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

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

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

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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

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

Commercial Development

34. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	
35. E-Mail Address:								

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

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

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

SECTION IV: Preparer Information

40. Name:	Bradley G. Lane, P.E.	**41. Title:**	Senior Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 358-4049		**( ) -**	blane@tr-eng.com

SECTION V: Authorized Signature

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

Company:	TRE & Associates, LLC.	**Job Title:**	Senior Project Manager
Name *(In Print):*	Bradley G. Lane	**Phone:**	**(** 512 **)** 358- **4049**
Signature:		**Date:**	5/28/2025