TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 21, 2016

Mr. Edward Badouh, III
New Braunfels Investment Joint Venture
2501 Oakrun Parkway
New Braunfels, Texas 78132

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: AutoZone No. 3679; Located in the 21000 block of Hwy 46; New Braunfels, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN106003163; Additional ID No: 13000063

Dear Mr. Badouh:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification application for the above-referenced project submitted to the San Antonio Regional Office by Coursen Koehler Engineering and Associates on behalf of New Braunfels Investment Joint Venture on January 15, 2016. Final review of the WPAP Modification was completed after additional material was received on February 24, 2016 and March 11, 2016. 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.*

BACKGROUND

The original Oak Run Commercial Unit 2 Infrastructure WPAP was approved on November 24, 2010 and it permitted the construction of 0.13 acres (2.1 percent) of impervious cover. The 6.278 acre site consists of cross access drive, a storm water detention pond with associated storm drains, and utility lines. A 15 foot wide engineered vegetated filter strip was constructed to treat stormwater for this project.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 1.71 acres located within the original WPAP site boundaries. It will include the construction of a retail store and associated parking and drives. The impervious cover will be 0.84 acres (49.1 percent), which includes the 0.13 acres of impervious cover from the original WPAP. Project wastewater will be disposed of by conveyance to the existing Gruene Wastewater Treatment Facility owned by New Braunfels Utilities.

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 existing engineered vegetative filter strip, one proposed engineered vegetative filter strip, and three proposed Filterra systems designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 637 pounds of TSS generated from the 0.84 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

Table I below summarizes the BMP sizing for the project.

Table I

Watershed	Permanent BMP	Total Area (ac.)	Impervious Cover (ac.)	Peak Treatment Flow Required (ft^3/s)	Design Treatment Flow Rate (ft^3/s)	TSS Removal Required (lbs.)	TSS Removal Provided (lbs.)
A1	2 Filterras	0.55	0.34	0.567	0.590	305	336
A2	VFS	0.22	0.03	-	-	27	27
A3	Filterra	0.31	0.26	0.285	0.295	233	245
A4*	None	0.22	0.03	-	-	27	-
A5**	VFS	0.41	0.18	-	-	45	45
Total	-	1.71	0.84	-		637	653

* Overtreatment is provided for by Permanent BMPs designed for A1 and A3
** Includes treatment of existing impervious cover (0.13 acres)

The engineered vegetated filter strips will have a uniform slope of less than 20 percent, a vegetated cover of at least 80 percent or more, will be 15 feet wide (in the direction of flow), and extend along the entire length of the contributing area.

The three proposed Filterra systems will each be 7 feet by 13 feet manufactured precast concrete structures, filled with an engineered filter media, mulch layer, an under drain, and a plant. The Filterras have a maximum effective area of 0.804 acres (0.548 acres proposed).

GEOLOGY

According to the geologic assessment included with the application, the site lies within the Person Formation. One non-sensitive manmade feature was identified by the geologist. The San Antonio Regional Office site assessment conducted on January 22, 2016 revealed the site was generally as described in the Geologic Assessment.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated November 24, 2010.

II. All permanent pollution abatement measures shall be operational prior to first occupancy of the facility.

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. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. 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 WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP 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.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, 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 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.
9. All borings with depths greater than or equal to 20 feet must be plugged with 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. All borings less than 20 feet must be backfilled with cuttings

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

During Construction:

10. During the course of regulated activities related to this project, the applicant or 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.
11. 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. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. 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.
16. 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.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

18. 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 San Antonio Regional Office within 30 days of site completion.
19. 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. The regulated 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 San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

20. Upon legal transfer of this property, 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.
21. An Edwards Aquifer protection 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 Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. 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 Mr. Joshua Vacek of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4028.

Sincerely,

Lynn Bumguardner, Water Section Manager
San Antonio Region
Texas Commission on Environmental Quality

LB/JV/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Garth Coursen, P.E., Coursen Koehler Engineering & Associates
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. Charlie Thomas, P.E., City of New Braunfels
Mr. Roland Ruiz, Edwards Aquifer Authority
Mr. George Wissman, Comal Trinity
TCEQ Central Records, Building F, MC 212

MODIFICATION of a PREVIOUSLY APPROVED WATER POLLUTION ABATEMENT PLAN

AutoZone #3679

21000 Block of HW 46
New Braunfels, Texas 78132
Comal County

Submitted to:

Texas Commission on Environmental Quality
San Antonio Division – Region 13

Prepared by:

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES

11802 Warfield, Suite 200
San Antonio, Texas 78216-3213
TBPE # F-10747

February 23, 2016
Job No. 15027.00

Customer Number: CN 602512097

Regulated Entity Number: RN 106003163

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.
3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or if not withdrawn the application will be denied and the application fee will be forfeited.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

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

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

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

1. Regulated Entity Name: AutoZone #3679						**2. Regulated Entity No.:** 106003163			
3. Customer Name: New Braunfels Investment Joint Venture						**4. Customer No.:** 602512097			
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):**		1.71	
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**			VFS & Filterra Systems			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**						
13. County:	Comal		**14. Watershed:**			Blieders Creek			

Modification of a Previously Approved 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 03/11/16

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Autozone #3679
   Original Regulated Entity Name: Oak Run Commercial Unit 2 Infrastructure
   Regulated Entity Number(s) (RN): 106003163
   Edwards Aquifer Protection Program ID Number(s): 13000063
   ☐ 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.

Application Fee Form

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MAR 18 2016
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Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: AutoZone #3679
Regulated Entity Location: Northwest corner of HW 46 and Oak Spawl
Name of Customer: New Braunfels Investment Joint Venture
Contact Person: Edward Badouh, III Phone: 830-609-0630
Customer Reference Number (if issued):CN 602512097
Regulated Entity Reference Number (if issued):RN 106003163

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	1.71 Acres	$ 4,000.00
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: [signature] AGENT Date: 3/11/2016

TCEQ-0574 (Rev. 02-24-15)

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

☒ 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 602512097		RN 106003163

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: e.g.: Doe, John) | If new Customer, enter previous Customer below:

New Braunfels Investment Joint Venture

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
		742365076	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☒ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ 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 ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address: 2501 Oak Run Pkwy

City	New Braunfels	State	Tx	ZIP	78132	ZIP + 4	3847

16. Country Mailing Information (if outside USA)	17. E-Mail Address (if applicable)
	bobadouh@gmail.com

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(830) 609 - 0630		(830) 609 - 0480

SECTION III: Regulated Entity Information

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

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

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

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

Auto Zone #3679

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MAR 18 2016
COUNTY ENGINEER

CONTECH
ENGINEERED SOLUTIONS

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

March 10, 2016

Javier Villafaña
Coursen-Koehler Engineering & Associates
11802 Warfield, Suite 200
San Antonio, TX 78216

Re: Autozone #3679, New Braunfels, TX, Contech No. 532,757
Three 13x7 Standard Offline Filterra Bioretention Systems

Dear Javier:

This correspondence provides important information relating to use of Standard Offline Filterra in the above referenced project. As stated in our standard Filterra specifications (see attached), "The system shall be designed to ensure that high flow events shall bypass the Engineered biofiltration media preventing erosion and suspension of pollutants." Additionally, as shown in the **Figure 1 Filterra Schematic** in the Addendum to the RG-348 Manual the downstream structure is called out as a "new or existing catchbasin, curb cut, **or other means of overflow relief**" (bolded emphasis added). In other words, a properly designed Filterra bypass directs treatment flows to the Filterra biofiltration bay and directs flows in excess of the treatment flow to bypass around the Filterra biofiltration bay. Provided the hydraulics designed by Coursen-Koehler Engineering & Associates conform to the above specifications it meets Contech's offline design requirements for the Filterra Bioretention System.

Regards,

Noel W. Thurston

Noel Thurston, P.E.
Senior Design Engineer – Stormwater Products | Team Lead

Contech Engineered Solutions LLC
11815 NE Glenn Widing Dr. | Portland, OR 97220
Off: 503-258-3155 Mob: 503-750-6491 Fax: 800-561-1271
nthurston@conteches.com
www.ContechES.com

SUGGESTED MAINTENANCE PLAN & SCHEDULE
VEGETATIVE FILTER STRIPS

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The care and maintenance a vegetated filter strip receives in the first few months are keys to establishing the viability of the filter strips. Once a vegetated area is well established, little additional maintenance is generally necessary, however, all vegetated Best Management Practices (BMPs) require some basic maintenance including:

Pest Management: An Integrated Pest Management Plan (IPM) should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

Seasonal Mowing and Lawn Care: If the filter strip is made of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clipping). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clipping and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum. Healthy grass may be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site may also help assure a dense and healthy vegetative cover.

Inspection: Inspection of filter strips should be done at least twice annually for erosion or damage to vegetation; however, additional inspections after periods of heavy runoff are most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover will be made during the first few years after establishment to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections should be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

Debris and Litter Removal: Any filter strip or filter strip structures (i.e. leveled spreaders) should be kept free of obstructions to reduce floatables from being flushed downstream, and for aesthetic reasons. The need for this practice will be determined through periodic inspection, but will be performed no less than four (4) times per year.

Sediment Removal: Sediment removal is not normally required in filter strips. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand, with flat-bottomed shovels, or light construction equipment.

Grass Re-seeding and Mulching: A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. Flow should be diverted, if possible, from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during dry periods, particularly as the vegetation is initially established.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of San Antonio guidelines (if within jurisdiction of City of San Antonio) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or SAWS officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

Contact Person: Mitch Bramlitt

Entity: AutoZone Development Corporation

Mailing Address: 123 South Front Street

City, State and Zip: Memphis, Tn 38103

Telephone: 901.495.8714 Facsimile: 901.495.8300

Email: Mitch.bramlitt@autozone.com

Mitch Bramlitt
Signature of Responsible Party

3-8-16
Date

RECEIVED
MAR 18 2016
COUNTY ENGINEER

SUGGESTED MAINTENANCE PLAN & SCHEDULE
FILTERRA BIORETENTION SYSTEM

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The Filterra Bioretention System should be inspected at semiannual basis (generally spring and fall servicing) and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend on site specific activities. Typical designs are intended for an semiannual maintenance cycle. The attached manufacturer recommended guidelines are included in the *Suggested Maintenance Plan and Schedule* and should be followed.

Inspections: Inspection of the storage component should occur at a minimum of twice a year. The inspection should be of the structure and media.

Debris and Litter Removal: Debris, silt and mulch must be removed from the filter surface.

Filterra System Sample Inspection & Maintenance Log

Model:							**Location:**	
Date	1	2	3			Maintenance Performed	Maintenance Personnel	Comments

Each Maintenance session should include the following:

1. Inspection of the unit structure and media;
2. Removal of trash, silt and mulch from the inlet and/or filter media;
3. After the removal of trash, silt and mulch, measure the distance from the top of the Filterra engineered media soil to the bottom of the top slab. If this distance is greater than 12 inches, add Filterra media (not top soil or other) to recharge the media to a 9 inch distance;
4. Replace the mulch layer, to the design depth, with mulch that meets the technical specifications;

5. Ensure correct repositioning of the erosion control stones by the Filterra inlet to allow for the entry of trash during a storm event;
6. Pruning of vegetation. If the vegetation is in dead or in poor health, it will require replacement; and;
7. Disposal of all removed items.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of New Braunfels guidelines (if within jurisdiction of City of New Braunfels) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or New Braunfels officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

To ensure Filterra is operating at the design flow rate of 140 inches/hr, the unit should be flow tested every three years by the project owner using a double-ring infiltrometer or other appropriate flow test method. Appropriate maintenance must be provided if the observed rate is less than 140 inches/hr. This might include replacement of the mulch or the surface soil layer. If this does not restore the unit to the design infiltration rate, all of the media may require replacement.

If standing water is observed for more than five to ten minutes within the system after a storm event or after a flow test, the Filterra system will also require investigation.
Trash, debris and mulch should be removed, and the mulch replaced. If this does not resolve the issue then the first few inches of media may need replacement to restore flow rates. Reduction in design flow rate may be caused by fine sediment accumulation from construction sediment, an oil or petroleum spill, grease from food fats, a blockage within or downstream of the discharge pipe, or simply a lack of maintenance for an extended period of time that has resulted in excessive sediment accumulation.

Serious oil, petroleum or hazardous substance spill, or other event that inundates the system beyond the ability to restore the design flow rate, will require removal and replacement of the media, mulch and plant. Media removal and replacement is normally performed with a vacuum truck. Only thoroughly tested. Quality controlled media from Americast (the parent company that developed Filterra) should be used as replacement media to ensure system water quality and flow rate performance. Americast should be contacted for replacement media. Americast, at an additional cost, can perform media replacement, or this can be contracted out.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

Contact Person: Mitch Bramlitt

Entity: AutoZone Development Corporation

Mailing Address: 123 South Front Street

City, State and Zip: Memphis, Tn 38103

Telephone: 901.495.8714 Facsimile: 901.495.8300

Email: Mitch.bramlitt@autozone.com

Mitch Bramlitt
Signature of Owner/Responsible Party

3-8-16
Date

RECEIVED

MAR 18 2016

COUNTY ENGINEER

MODIFICATION of a PREVIOUSLY APPROVED WATER POLLUTION ABATEMENT PLAN

AutoZone #3679

21000 Block of HW 46
New Braunfels, Texas 78132
Comal County

Submitted to:

Texas Commission on Environmental Quality
San Antonio Division – Region 13

Prepared by:

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES

11802 Warfield, Suite 200
San Antonio, Texas 78216-3213
TBPE # F-10747

February 23, 2016
Job No. 15027.00

Customer Number: **CN 602512097**

Regulated Entity Number: **RN 108955014**

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

Mid-Review Modifications

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

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

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

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

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

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

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

1. Regulated Entity Name: AutoZone #3679						**2. Regulated Entity No.: 108955014**				
3. Customer Name: New Braunfels Investment Joint Venture						**4. Customer No.: 602512097**				
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):**		1.71		
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**			VFS & Filterra Systems				
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**							
13. County:	Comal		**14. Watershed:**			Blieders 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.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	X	___	___	___
Region (1 req.)	___	X	___	___	___
County(ies)	___	X	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	X 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 X 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. **Garth Coursen, P.E.**
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent Date: 05/23/2016

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):	

GENERAL INFORMATION

TCEQ-0587

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) 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.

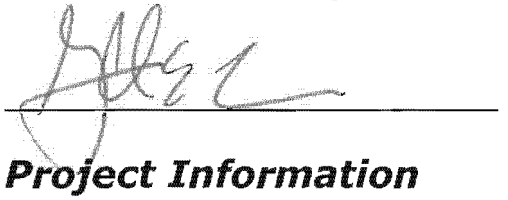
Signature

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 **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 2/23/16

Signature of ~~Customer~~/Agent:



Project Information

1. Regulated Entity Name: Auto Zone #3679
2. County: Comal
3. Stream Basin: Blieders Creek
4. Groundwater Conservation District (If applicable): Comal Trinity
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☒ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Edward Badouh, III
Entity: New Braunfels Investment Joint Venture
Mailing Address: 2501 Oakrun Parkway
City, State: New Braunfels, Texas Zip: 78132
Telephone: 830-609-0630 FAX: _____
Email Address: bobadouh@gmail.com

8. Agent/Representative (If any):

Contact Person: Garth Coursen, P.E.
Entity: Coursen-Koehler Engineering and Associates
Mailing Address: 11802 Warfield Street, Suite 200
City, State: San Antonio, Texas Zip: 78216
Telephone: 210-853-0307 FAX: 210-855-5530
Email Address: gcoursen@ckcivil.com/project@ckcivil.com

9. Project Location:

☒ The project site is located inside the city limits of New Braunfels.
☐ 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.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

2501 Oakrun Parkway; NE of the intersection of State Hwy 46W with Oak Sprawl

11. ☒ **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

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

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).
☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: TCEQ to request staking of project site

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. 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

15. 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/Uncleared)
- ☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(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).

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

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; 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.

Administrative Information

18. The fee for the plan(s) is based on:

- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ 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.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

General Information Form

ATTACHMENT C

PROJECT DESCRIPTION

The 1.71 acre development consists of the construction of Autozone #3679 in one phase. The project is located in Comal County, inside the city limits of New Braunfels, at the northwest corner of HW 46 and Oak Sprawl Road.

The proposed development is a commercial retail store with 36 parking spaces and a loading area. The construction of the retail store will result in an increase of approximately 30,492 ft^2 (0.70 acres) of impervious cover.

The proposed overall post development impervious cover for the development is approximately 0.84 acres (49%), which includes existing impervious cover and therefore permanent Best Management Practices (BMP'S) are required. The tract generally slopes to the north to an existing drainage system built with the overall property (6.278 acres).

There are two major drainage areas and the runoff is to be conveyed in parking lot then drainage channel and the other is just though parking lot into three Filterra Water Quality Structure BMP's to control the discharge of pollutants after the competition of construction. The tract currently has an existing driveway that is treated by vegetative filter strip. The three Filterra systems will over treat to compensate for the impervious cover so that the loading area will not be treated.

Sanitary sewer service will be provided by an underground sewage collection sewage collection system. The onsite system will tie into an existing sanitary sewer lateral.

MODIFICATION of a PREVIOUSLY APPROVED PLAN

TCEQ-0590

Modification of a Previously Approved 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 02/23/16

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Autozone #3679
   Original Regulated Entity Name: Oak Run Commercial Unit 2 Infrastructure
   Regulated Entity Number(s) (RN): 108955014
   Edwards Aquifer Protection Program ID Number(s): 13000063
   ☐ 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):
   - ☒ 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;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☒ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

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.

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	6.278 ac	1.71 ac
Type of Development	Commercial	Commercial
Number of Residential Lots	———	———
Impervious Cover (acres)	0.13 ac	0.84 ac
Impervious Cover (%	2.07%	49%
Permanent BMPs	VFS	VFS (existing & proposed)
Other	———	Filterra (3 - 13'x7' inlets)

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	———	———
Pipe Diameter	———	———
Other	———	———

AST Modification Summary	*Approved Project*	*Proposed Modification*
Number of ASTs	____	____
Volume of ASTs	____	____
Other	____	____

UST Modification Summary	*Approved Project*	*Proposed Modification*
Number of USTs	____	____
Volume of USTs	____	____
Other	____	____

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

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. 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. ☐ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☒ Acreage has not been added to or removed from the approved plan.

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.

AUTOZONE #3679
MODIFICATION OF A PREVIOSULY APPROVED PLAN

ATTACHMENTS

ATTACHMENT A – WPAP APPROVAL LETTER (Nov. 24, 2010)

ATTACHMENT B – NARRATIVE OF PROPOSED MODIFICATION

ATTACHMENT C – CURRENT SITE PLAN OF APPROVED PROJECT

AUTOZONE #3679
MODIFICATION OF A PREVIOSULY APPROVED PLAN

ATTACHMENT A

ORIGINAL WPAP APPROVAL LETTER (Nov. 24, 2010)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 24, 2010

Mr. Edward Badouh, Jr.
New Braunfels Joint Venture
P.O. Box 311240
New Braunfels, TX 78131-1240

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Oak Run Commercial Unit 2 Infrastructure; Located on the northeast side of US Highway 46 and Oak Sprawl; New Braunfels, Texas
TYPE OF PLAN: Request for the Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer;
Edwards Aquifer Protection Program San Antonio File No. 2947.00; Investigation No. 865394; Regulated Entity No. RN106003163

Dear Mr. Badouh:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Application for the above-referenced project submitted to the San Antonio Regional Office by Pawelek & Moy, Inc. on behalf of New Braunfels Joint Venture on September 17, 2010. Final review of the WPAP was completed after additional material was received on November 24, 2010. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) 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 6.278 acres. It will include the construction of a cross access drive, a storm water detention pond with associated stormdrains, and utility lines. The impervious cover will be 0.13 acres (2.07 percent). No wastewater is generated by this project.

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, a vegetated filter strip, 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 this project is 117 pounds of TSS generated from the 0.13 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The vegetated filter strip will consist of the following:

- The engineered vegetated filter strips will extend along the entire length of the contributing area;
- The slope will not exceed 20%;
- The minimum dimension of the filter strip (in the direction of the flow) will not be less than 15 feet;
- The maximum width of (in the direction of the flow) of the contributing impervious area will not exceed 72 feet;
- The minimum vegetated cover will be 80%;
- The contributing area to the filter strip will be relatively flat so that runoff is distributed evenly to the vegetated areas without the use of a level spreader;
- The vegetated filter strip will be free of gullies or rills that can concentrate overland flow.

GEOLOGY

According to the geologic assessment included with the application, the site is within the Cyclic and Marine Member of the Person Formation. One man-made feature was reported and assessed as not sensitive. The San Antonio Regional Office site assessment conducted on November 16, 2010 revealed no additional features and that the site is generally as described by the geologic assessment.

SPECIAL CONDITIONS

I. The permanent pollution abatement measure shall be operational prior to occupancy of the facility.

II. All sediment and/or media removed from the permanent pollution abatement measure 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. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

5. 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 WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

6. Modification to the activities described in the referenced WPAP 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.

7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, 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 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.

9. All borings with depths greater than or equal to 20 feet must be plugged with 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. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or 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.

11. 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. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

13. Zero wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

15. Intentional discharges of sediment laden storm 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.

16. 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.

17. 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.

<u>After Completion of Construction</u>:

18. 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 San Antonio Regional Office within 30 days of site completion.

19. 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. The regulated 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 San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

20. Upon legal transfer of this property, 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.

21. An Edwards Aquifer protection 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 Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

22. 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.

If you have any questions or require additional information, please contact Mr. Javier Anguiano of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 490-3096.

Sincerely,

for Mark R. Vickery, P.G.
Executive Director
Texas Commission on Environmental Quality

MRV/JA/eg

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. John J. Moy, Jr., P.E., Pawelek & Moy, Inc.
Mr. James C. Klein, P.E., City of New Braunfels
Mr. Thomas H. Hornseth, P.E., Comal County
Mr. Karl J. Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

AUTOZONE #3679
MODIFICATION OF A PREVIOUSLY APPROVED PLAN

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

The development of the AutoZone #3679 will require a driveway to be connected to the existing driveway built with the original approved WPAP. The proposed modification affects the existing 15 ft engineered vegetative filter strip treating the existing driveway. Building the proposed driveway and connecting it to the existing driveway results in additional impervious cover draining to the existing 15 ft VFS. The maximum length of pavement sheet flowing to the existing 15 ft VFS for treatment was increased from 25 ft to 64.2 ft. Since the overall length of impervious cover draining to the existing engineered 15 ft VFS is less than 72 ft, the increase in impervious cover to be treated by the existing VFS will not affect the overall water quality treatment for the project site.

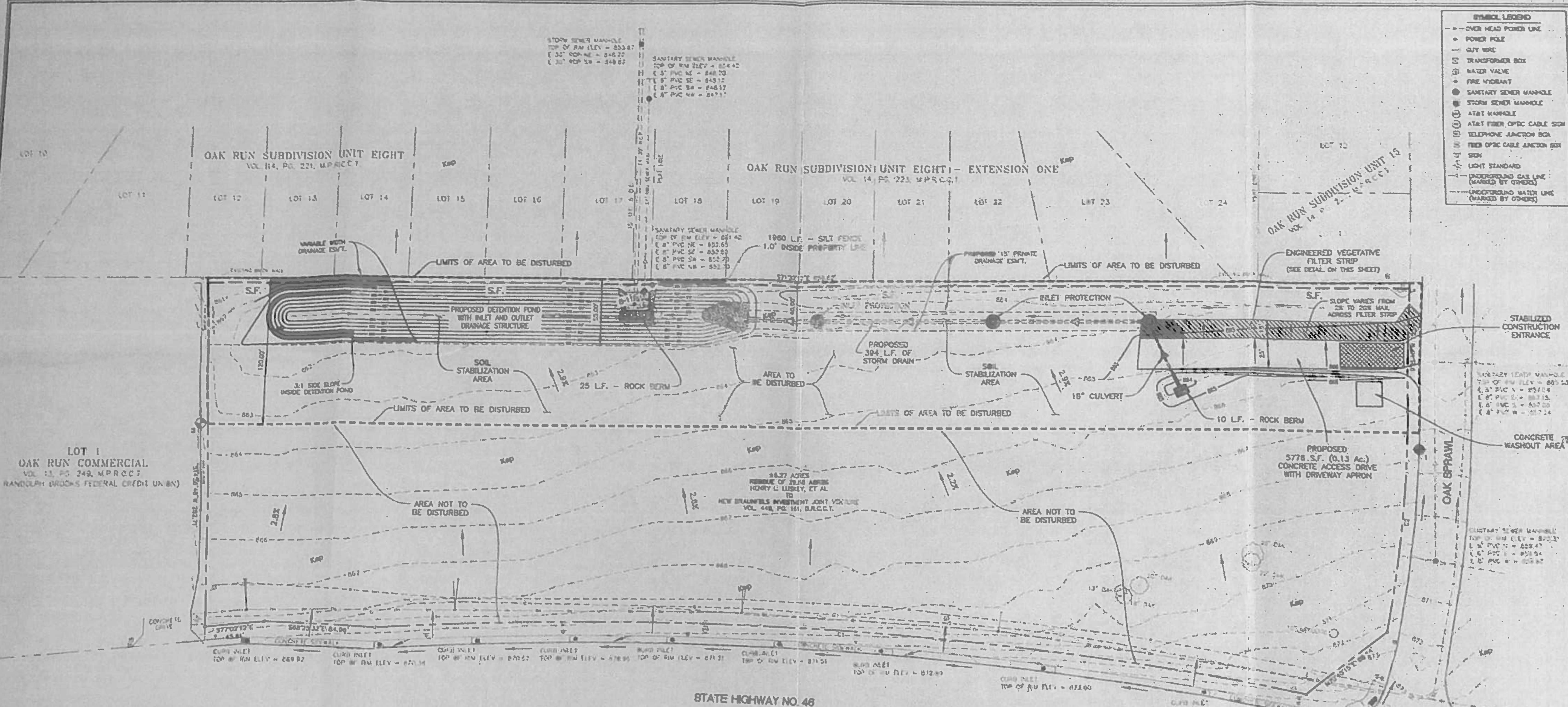
The proposed overall post development impervious cover for the development is approximately 0.84 acres (49%), which includes existing impervious cover and therefore permanent Best Management Practices (BMP'S) are required. The tract generally slopes to the north to an existing drainage system built with the overall property (6.278 acres).

There are two major drainage areas where runoff is to be conveyed through the parking lot. One area drains through the parking lot to the earthen channel, and ultimately to 2 Filterra systems for treatment. The other area drains to another Filterra system along the parking lot for treatment to control the discharge of pollutants after the competition of construction. The tract currently has an existing driveway that is treated by vegetative filter strip, and another proposed vegetative filter strip will treat a portion of the parking lot. The three Filterra systems will over treat the project site to compensate for the impervious cover draining away from the proposed BMPs.

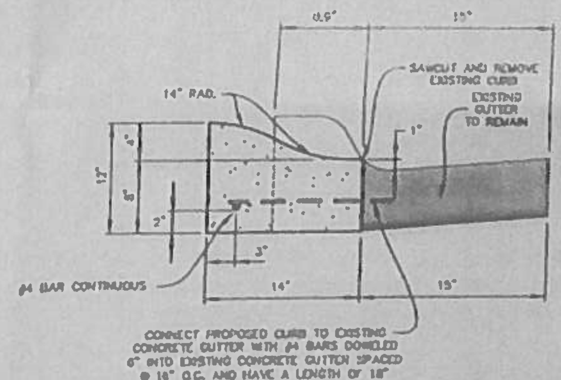
AUTOZONE #3679
MODIFICATION OF A PREVIOUSLY APPROVED PLAN

ATTACHMENT C

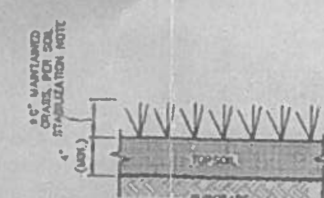
CURENT SITE PLAN OF APPROVED PROJECT



CURVE TABLE						
CURVE	RADIUS	DELTA	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	2924.85'	14°17'23"	366.61'	729.47'	[illegible]	727.53'
C2	884.74'	11°28'10"	88.90'	177.31'	[illegible]	177.01'



MOUNTABLE CURB DETAIL
N.T.S.



ENGINEERED VEGETATIVE FILTER STRIP DETAIL
N.T.S.

LEGEND

- S.F. — SILT FENCE
- ROCK BERM
- INLET PROTECTION
- TEMPORARY CONSTRUCTION ENTRANCE/EXIT
- CONCRETE WASHOUT
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMITS OF AREA TO BE DISTURBED
- PROPERTY LINE

RECEIVED
MAR 0 4 2016
COUNTY ENGINEER

(IN FEET)
1 inch = 40 ft.

SOIL STABILIZATION NOTE
IN ALL AREAS TO BE DISTURBED OUTSIDE OF THE LIMITS OF PAVING, ROCK RIPRAP, ETC., AND FOR THE ENGINEERED VEGETATIVE FILTER STRIP, VEGETATIVE STABILIZATION IN ACCORDANCE WITH RG-348 COMPLYING WITH THE EDWARDS AQUIFER RULES, ITEM 1.3.8-TEMPORARY VEGETATION, ITEM 1.3.9-BLANKETS AND MATTING, ITEM 1.3.10-HYDRAULIC MULCH AND/OR ITEM 1.3.11 SOD SHALL BE IMPLEMENTED. THE AREAS TO BE VEGETATED SHALL BE WATERED SUFFICIENTLY TO ESTABLISH 70% STABILIZATION.

VELOCITY CONTROL NOTE
AT THE POINT WHERE THE PROPOSED STORM DRAIN SHOWN IN THE 'AREAS TO BE DISTURBED' DISCHARGE INTO THE DETENTION POND, A VELOCITY CONTROL PROCEDURE UTILIZING HEAVY ROCK RIPRAP (TYPE 'R' PER TXDOT ITEM 432) SHALL BE USED TO DISSIPATE THE FLOWS (SEE DETAIL ON SHEET [illegible]). THIS APPLICATION

THE AMOUNT AND TYPE OF IMPERVIOUS COVER EXPECTED AFTER CONSTRUCTION ARE SHOWN BELOW

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
STRUCTURES/ROOFTOPS	0	÷ 43,560 =	0.0
ACCESS DRIVE WITH DRIVEWAY APRON	[illegible]	[illegible]	[illegible]

BOUNDARY NOTE: (BY KOLODZIE SURVEYING CO.)
THE BOUNDARY SHOWN HEREON IS BASED ON THE SURVEY CONDUCTED BY KOLODZIE SURVEYING COMPANY DATED AUGUST 26, 2010.

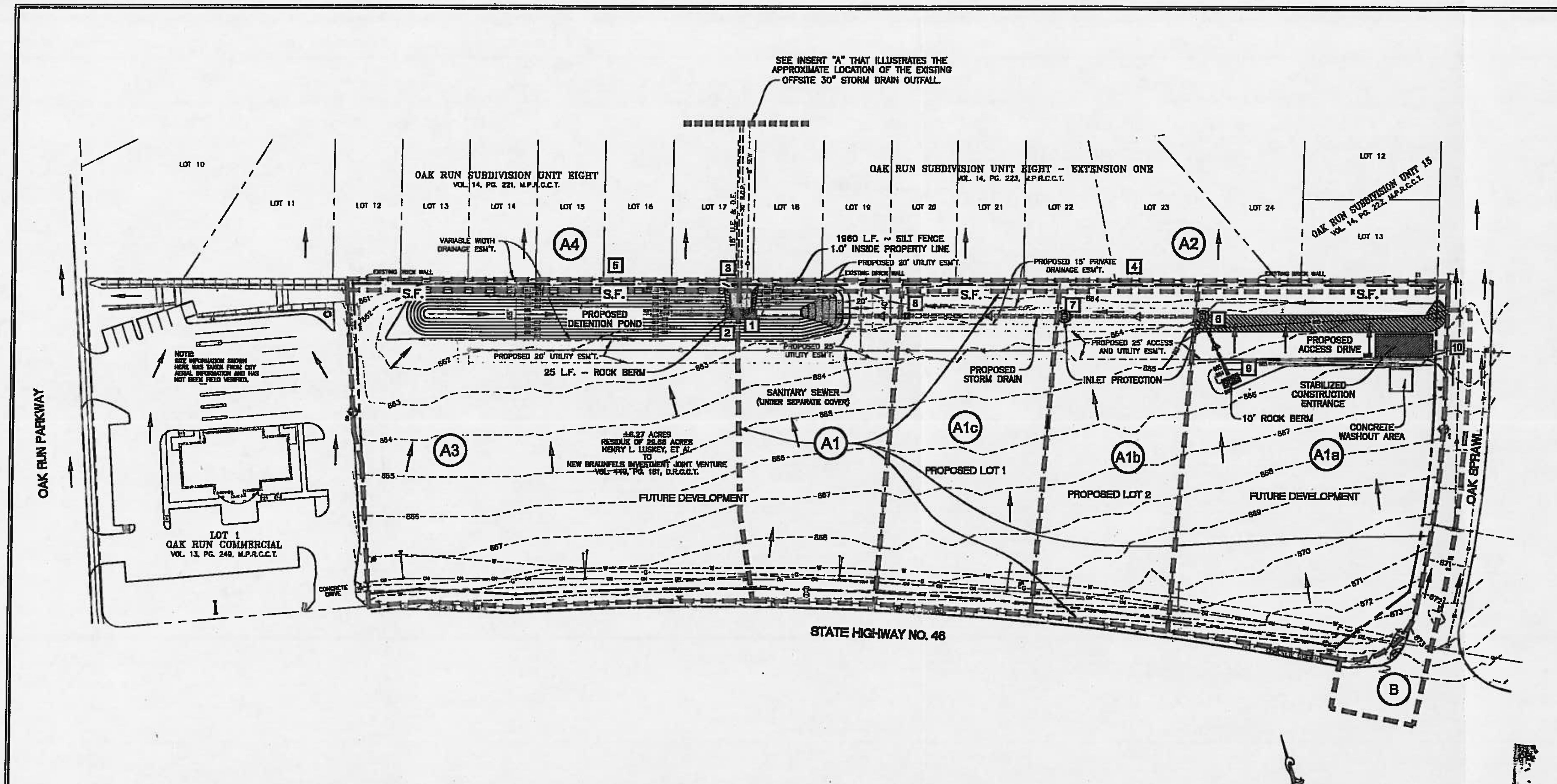
TOPOGRAPHIC INFORMATION PROVIDED BY (KOLODZIE SURVEYING CO.)
PROJECT BENCHMARK:
SQUARE ON TOP OF WEST CURBLINE OF OAK SPRAWL APPROXIMATELY [illegible] NORTH OF THE INTERSECTION

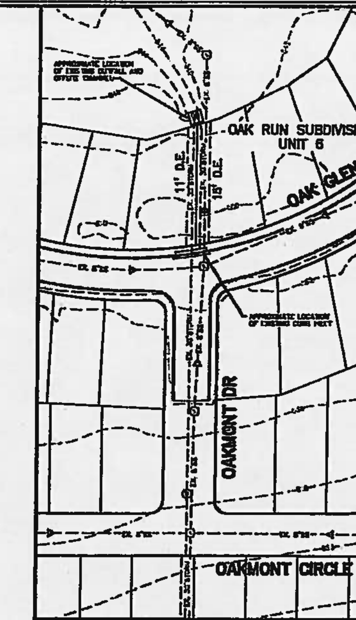
PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES
FIRM No. F-9862

OWNER:
NEW BRAUNFELS INVESTMENT JOINT VENTURE
P.O. BOX 311240
NEW BRAUNFELS, TX 78131-1240

SITE PLAN FOR
OAK RUN COMMERCIAL, UNIT 2 - INFRASTRUCTURE

REVISIONS
DESCRIPTION: ADDRESSED TCEQ COMMENTS





PM
PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES

OWNER:
NEW BRAUNFELS INVESTMENT JOINT VENTURE
P.O. BOX 311240
NEW BRAUNFELS, TX 78131-1240

DRAINAGE AREA MAP AND EROSION CONTROL PLAN

FOR

OAK RUN COMMERCIAL, UNIT 2 - INFRASTRUCTURE
NEW BRAUNFELS, TEXAS

SYMBOL LEGEND

- OVER HEAD POWER LINE
- POWER POLE
- GUY WIRE
- TRANSFORMER BOX
- WATER VALVE
- FIRE HYDRANT
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- AT&T MANHOLE
- AT&T FIBER OPTIC CABLE SIGN
- TELEPHONE JUNCTION BOX
- FIBER OPTIC CABLE JUNCTION BOX
- SIGN
- LIGHT STANDARD
- UNDERGROUND GAS LINE (MARKED BY OTHERS)
- UNDERGROUND WATER LINE (MARKED BY OTHERS)

RECEIVED

MAR 04 2016

COUNTY ENGINEER

DRAINAGE NOTE: THE PURPOSE FOR THE CONSTRUCTION OF THIS STORM DRAIN AND DETENTION POND IS TO PROVIDE CONVEYANCE AND MITIGATION FOR ±6.27 ACRES ASSUMING 95% IMPERVIOUS COVER. THIS DOES NOT INCLUDE WATER QUALITY REQUIREMENTS PER TCEQ EDWARD'S AQUIFER RULES, WHICH WILL BE THE RESPONSIBILITY OF THE INDIVIDUAL LOTS AS THEY DEVELOP.

EXISTING DRAINAGE AREA DESIGNATION	DRAINAGE AREAS (acres)	PROPOSED DRAINAGE AREA DESIGNATION	DRAINAGE AREAS (acres)
A1	4.21	A1	4.28
*A2	0.14	A1a	1.66
A3	2.18	A1b	0.85
*A4	0.08	A1c	0.93
		**A2	0.07
		A3	2.18
		A4	0.08
		B	0.25

* these drainage areas represent the areas behind the existing berm that does not drain to the existing storm drain

**represents future 5' landscape buffer

*Values Applied to C_{10} to Determine C_{25} & C_{100}	
K_{10}	1.00
K_{25}	1.10
K_{100}	1.25

RATIONAL METHOD (Q=KCIA) - EXISTING CONDITIONS

DRAINAGE NODE POINT	CONTRIBUTING DA's	DRAINAGE AREA (acres)	C_2	C_{10}	$*C_{25}$	$*C_{100}$	Tc (min)	I_2 (in/hr)	I_{10} (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
1	A1	4.21	0.38	0.38	0.42	0.48	20	3.65	5.44	6.51	8.51	5.84	8.71	11.45	17.02
2	A3	2.18	0.38	0.38	0.42	0.48	17	3.96	5.92	7.09	9.27	3.28	4.91	6.49	9.70
3	A1+A3	6.39	0.38	0.38	0.42	0.48	20	3.65	5.44	6.51	8.51	8.86	13.21	17.47	26.10
4	A2	0.14	0.38	0.38	0.42	0.48	10	4.96	7.57	9.07	11.90	0.26	0.40	0.53	0.80
5	A4	0.08	0.38	0.38	0.42	0.48	10	4.96	7.57	9.07	11.90	0.15	0.23	0.30	0.46

RATIONAL METHOD (Q=KCIA) - PROPOSED CONDITIONS

DRAINAGE NODE POINT	CONTRIBUTING DA's	DRAINAGE AREA (acres)	C_2	C_{10}	$*C_{25}$	$*C_{100}$	Tc (min)	I_2 (in/hr)	I_{10} (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
1	A1	4.28	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	17.19	26.23	34.58	50.93
2	A3	2.18	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	8.76	13.36	17.61	25.94
3	A1+A3	6.46	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	25.95	39.59	52.13	76.88
4	A2	0.07	0.38	0.38	0.42	0.48	10	4.96	7.57	9.07	11.90	0.13	0.20	0.27	0.40
5	A4	0.08	0.38	0.38	0.42	0.48	10	4.96	7.57	9.07	11.90	0.15	0.23	0.30	0.46
6	A1a	1.66	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	6.67	10.18	13.40	19.75
7	A1b	0.85	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	3.41	5.21	6.86	10.12
8	A1c	0.93	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	3.74	5.70	7.51	11.07
9	Part of A1a(temp)	1.32	0.38	0.38	0.42	0.48	10	4.96	7.57	9.07	11.90	2.49	3.80	5.03	7.54
10	B	0.25	0.81	0.81	0.89	1.00	10	4.96	7.57	9.07	11.90	1.00	1.53	2.02	2.98

POND ROUTING SUMMARY NODE PT. 3

POND RELEASE RATES (NODE PT. 3)
2 yr = 8.24 cfs < 8.86 cfs
10 yr = 13.11 cfs < 13.21 cfs
100 yr = 25.98 cfs < 26.10 cfs (elev = 861.06)

(IN FEET)
1 inch = 50 ft.

LEGEND

- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/EXIT
- DRAINAGE AREA BOUNDARY
- S.F. SILT FENCE
- ROCK BERM
- INLET PROTECTION
- (A1) DRAINAGE AREA
- [1] DRAINAGE NODE POINT
- FLOW DIRECTION
- ---100--- EXISTING CONTOURS
- —100— PROPOSED CONTOURS

EROSION AND SEDIMENTATION CONTROL SCHEDULE:

PRIOR TO CONSTRUCTION.

1. INSTALL CONSTRUCTION ENTRANCE/EXIT, ROCK BERM AT EXISTING 30" RCP OUTFALL AND SILT FENCE.

DURING CONSTRUCTION.

1. MAINTAIN CONSTRUCTION ENTRANCE/EXIT, ROCK BERM AT EXISTING 30" RCP OUTFALL AND SILT FENCE.
2. UPON COMPLETION OF STORM DRAIN AND DETENTION POND ADJUST ROCK BERM AT OUTFALL AND INSTALL ROCK BERM AT 18" RCP AND INLET PROTECTION FOR TWO INLETS.

FINAL EROSION/SEDIMENTATION CONTROL.

1. ALL DISTURBED AREAS ON THE SITE SHALL BE HYDROMULCHED UPON COMPLETION OF GRADING OPERATIONS, PER ITEM 164.

CONSTRUCTION SEQUENCING:

1. PLACE EROSION AND SEDIMENTATION CONTROLS PER THIS EROSION CONTROL PLAN AND IN ACCORDANCE WITH THE APPROVED W.P.A.P.
2. CONSTRUCT DETENTION POND.
3. CONSTRUCT STORM DRAIN.
4. CONSTRUCT ACCESS DRIVE.
5. FINAL STABILIZATION/ESTABLISH VEGETATION.

TOPOGRAPHIC INFORMATION PROVIDED BY KOLODZIE SURVEYING CO.

PROJECT BENCHMARK: Φ_1
SQUARE ON TOP OF WEST CURBLINE OF OAK SPRAWL APPROXIMATELY 240' NORTH OF THE INTERSECTION OF STATE HIGHWAY NO. 46 AND OAK SPRAWL, 89' NORTH OF A SANITARY MANHOLE IN OAK SPRAWL, 72' SOUTH OF A SANITARY MANHOLE IN OAK SPRAWL.
ELEVATION = 867.85 (SET BY OTHERS)

PROJECT BENCHMARK: Φ_2
SQUARE ON TOP OF SOUTHEAST CURBLINE AT RANDOLPH BROOKS CREDIT UNION APPROXIMATELY 175' NORTHEAST OF STATE HIGHWAY NO. 46:
ELEVATION = 864.18 (SET BY OTHERS)

REVISIONS

DESCRIPTION	DATE

DRAWN BY:	D.G. III
CHECKED BY:	D.D.P.
DATE:	OCTOBER 2010
JOB NO.:	0906.01

C2

WPAP APPLICATION

TCEQ-0584

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), 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.

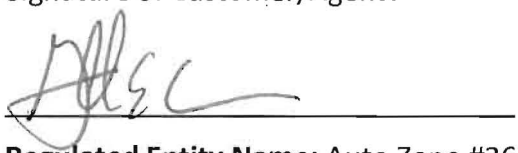
Signature

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 **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 02/23/2016

Signature of Customer/Agent:



Regulated Entity Name: Auto Zone #3679

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property):1.71

3. Estimated projected population:10

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	7,425	÷ 43,560 =	0.17
Parking	21,102	÷ 43,560 =	0.48
Other paved surfaces	8130	÷ 43,560 =	0.19
Total Impervious Cover	36,657	÷ 43,560 =	0.84

Total Impervious Cover 0.84 ÷ **Total Acreage** 1.71 **X 100 =** 49**% Impervious Cover**

5. ☒ **Attachment A - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

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

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. 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.

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

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

10. 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.

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

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

12. ☐ 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

13. ☒ **Attachment B - 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 the 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

14. The character and volume of wastewater is shown below:

100 % Domestic	240 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 240	

15. Wastewater will be disposed of by:

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

☐ **Attachment C - 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):

☒ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

☐ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

☒ The SCS was previously submitted on 12/09/201.

☐ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Gruene Wastewater Treatment Facility (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 20'.

18. 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): _____

19. ☒ 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, open space, etc. are shown on the plan.

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

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

☒ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

☐ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☒ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☒ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

29. ☒ 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.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT B

VOLUME AND CHARACTER OF STORM WATER

Storm water runoff generated from the proposed site will come from roof tops, driveways and landscaped areas. Runoff will be treated by 3 Filterra Water Quality Structure, and an existing natural vegetative filter strip down gradient of existing driveway. No unusual contaminants other than those typical with commercial development are expected.

The storm water runoff for the preconstruction conditions of the approximate 1.71 acres of Oak Run Commercial Unit-2C would be with native vegetation consisting of grasses, brush and trees and an existing engineered vegetative filter strip. The site consists of 5 drainage/catchment areas, of which A1 A2, and A3 are treated by proposed BMPs as shown on the Proposed Drainage Plan included in ATTACHMENT G in the TEMPORARY STORMWATER SECTION. A small amount of storm water from up gradient drainage areas will be accepted by the property within catchment areas A1, A3, and A4.

The characteristic of the storm water generated onsite will be influenced by site features that generate non-point sources of pollution. Non-point sources will include: oil and grease from the pavement areas, suspended solids, sedimentation, nutrients for landscape care and maintenance along with the possible use of pesticides, and herbicides. The storm water runoff would discharge into a existing detention pond.

The rational Method (Q=CIA) was used to compute the flow volumes generated by each drainage area. The following methods or values were applied:

Time of concentration (Tc) → SCS TR-55 Method (sheet flow, shallow concentrated flow, and open channel flow).

Intensity (I) → Analysis of areas and flows generated involved the use of the City of New Braunfels rainfall intensity curves from the Drainage and Erosion Control Manual.

Runoff Coefficient (C) → Runoff coefficients were taken from the City of New Braunfels runoff coefficients from the Drainage and Erosion Control Manual.

A summary of the pre-development and ultimate development hydrology is shown on the following page.

HYDROLOGIC CALCULATIONS SUMMARY

DRAINAGE CALCULATIONS - EXISTING CONDITIONS												
Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr)				Discharge, Q (cfs)			
					2-Yr	10-Yr	25-Yr	100-Yr	2-Yr (K=1.0)	10-Yr (K=1.0)	25-Yr (K=1.1)	100-Yr (K=1.25)
1	EX1	0.38	0.47	18.8	3.69	5.650	6.811	8.924	0.7	1.0	1.3	2.0
2	EX2	1.33	0.38	18.1	3.76	5.760	6.940	9.095	1.9	2.9	3.9	5.7
A	EX1 + EX2	1.71	0.40	18.8	3.69	5.650	6.811	8.924	2.5	3.9	5.1	7.6

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.

Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-2.

Rainfall Intensities (I) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 4-1.

DRAINAGE CALCULATIONS - PROPOSED (ULTIMATE) CONDITIONS												
Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr)				Discharge, Q (cfs)			
					2-Yr	10-Yr	25-Yr	100-Yr	2-Yr (K=1.0)	10-Yr (K=1.0)	25-Yr (K=1.1)	100-Yr (K=1.25)
1	A1	0.55	0.64	10.0	4.92	7.557	9.068	11.941	1.7	2.7	3.5	5.3
2	A2	0.22	0.44	10.0	4.92	7.557	9.068	11.941	0.5	0.7	1.0	1.4
3	A3	0.31	0.74	10.0	4.92	7.557	9.068	11.941	1.1	1.7	2.3	3.4
4	A4	0.22	0.38	10.0	4.92	7.557	9.068	11.941	0.4	0.6	0.8	1.2
5	A5	0.41	0.56	10.0	4.92	7.557	9.068	11.941	1.1	1.7	2.3	3.4
A	A1 - A5	1.71	0.57	10.0	4.92	7.557	9.068	11.941	4.8	7.4	9.7	14.5

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.

Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-7.

Values Appied to C				
Description	2-Yr	10-Yr	25-Yr	100-Yr
Kn	**1.00**	**1.00**	**1.10**	**1.25**

RUNOFF COEFFICIENTS (C)

DRAINAGE CALCULATIONS - EXISTING CONDITIONS

STUDY POINT	TOTAL ACRES	BUSINESS OR COMMERCIAL, EXISTING PVM'T./BUILDINGS				CLOSELY BUILT RESIDENTIAL/SCHOOLS				UNDEVELOPED ULTIMATE USE UNKNOWN				LARGE LOT RESIDENTIAL				AVERAGE RESIDENTIAL				UNDEVELOPED CULTIVATED (<50% COVER)				COMPOSITE RUNOFF COEFFICIENT
		slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				
		< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 2	2-7	>7		
		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
		0.80	0.80	0.80	0.80	0.67	0.67	0.67	0.67	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.60	0.60	0.60	0.60	0.30	0.38	0.42		
1	0.38		0.13																			0.25				0.47
2	1.33																						1.33			0.38
A	1.71		0.13																			0.25	1.33			0.40

Reference Drainage and Erosion Control Design Manual Table 5-2 for Runoff Coefficients (C)

DRAINAGE CALCULATIONS - EXISTING/PROPOSED (ULTIMATE) CONDITIONS

STUDY POINT	TOTAL ACRES	BUSINESS OR COMMERCIAL, EXISTING PVM'T./BUILDINGS				CLOSELY BUILT RESIDENTIAL/SCHOOLS				UNDEVELOPED ULTIMATE USE UNKNOWN				LARGE LOT RESIDENTIAL				AVERAGE RESIDENTIAL				UNDEVELOPED CULTIVATED (<50% COVER)				COMPOSITE RUNOFF COEFFICIENT
		slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				
		< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 2	2-7	>7		
		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
		0.80	0.80	0.80	0.80	0.67	0.67	0.67	0.67	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.60	0.60	0.60	0.60	0.30	0.38	0.42		
1	0.55		0.34																				0.21			0.64
2	0.22		0.03																				0.19			0.44
3	0.31		0.26																				0.06			0.74
4	0.22																						0.22			0.38
5	0.41		0.17																				0.25			0.56
A	1.71		0.79																				0.92			0.57

Reference Drainage and Erosion Control Design Manual Table 5-7 for Runoff Coefficients (C)

TIME OF CONCENTRATIONS (Tc)

DRAINAGE CALCULATIONS - EXISTING CONDITIONS

STUDY POINT	Overland				Shallow Concentrated (Unpaved)				Shallow Concentrated (Paved)				Channel			Tc (min)
	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Velocity (fps)	travel time (min)	
1	200	0.20	0.040	15.9	120	0.20	0.020	2.8	0	0.02	0.005	0.0	0	5.000	0.0	**18.8**
2	50	0.20	0.010	9.1	190	0.20	0.005	9.0	0	0.02	0.005	0.0	0	5.000	0.0	**18.1**
A	200	0.20	0.040	15.9	120	0.20	0.020	2.8	0	0.02	0.005	0.0	0	5.000	0.0	**18.8**

** from "Design" by Elwyn E. Seelye*

*** Tr-55, Figure 3-1. - Average Velocities for Estimating Travel Time for Shallow Concentrated Flow*

DRAINAGE CALCULATIONS - EXISTING/PROPOSED (ULTIMATE) CONDITIONS

STUDY POINT	Overland				Shallow Concentrated (Unpaved)				Shallow Concentrated (Paved)				Channel			Tc (min)
	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Velocity (fps)	travel time (min)	
1	65	0.20	0.083	4.8	0	0.30	0.010	0.0	130	0.020	0.010	0.4	110	2.2	0.8	**10.0**
2	100	0.20	0.034	9.8	85	0.02	0.020	0.2	1	0.020	0.005	0.0	0	1.0	0.0	**10.0**
3	65	0.20	0.083	4.8	1	0.20	0.015	0.0	145	0.200	0.010	4.8	0	1.0	0.0	**10.0**
4	95	0.20	0.050	8.0	130	0.20	0.050	1.9	1	0.020	0.010	0.0	1	1.0	0.0	**10.0**
5	65	0.02	0.062	0.9	150	0.20	0.005	7.1	1	0.020	0.010	0.0	0	3.0	0.0	**10.0**
A	100	0.20	0.034	9.8	85	0.02	0.020	0.2	1	0.020	0.005	0.0	0	1.0	0.0	**10.0**

** from "Design" by Elwyn E. Seelye*

*** Tr-55, Figure 3-1. - Average Velocities for Estimating Travel Time for Shallow Concentrated Flow*

TEMPORARY STORMWATER

TCEQ-0602

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

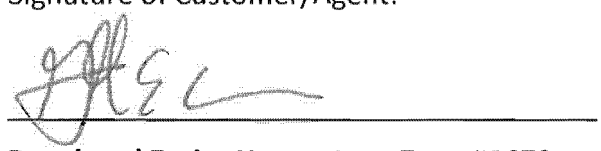
Signature

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

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 01/25/2016

Signature of ~~Customer~~/Agent:



Regulated Entity Name: Auto Zone #3679

Project Information

Potential Sources of Contamination

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

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

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

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

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

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

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

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

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

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

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

Sequence of Construction

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

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

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

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

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT D

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

The Temporary Best Management Practices (TBMPs) and Measures that will be used:

Silt Fences (Sediment Control Rolls may be substituted where appropriate)
Stabilized Construction Entrances
Equipment Staging Area
Concrete Wash Out
Inlet Protection (Gravel Filter Bags)
Rock Berm or Gabion
Preservation of Natural Areas
Regular Inspection & Maintenance

All structural TBMPs will be installed prior to the beginning of construction as per the Sedimentation & Erosion Control Plan and Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and perennial vegetative cover with a density of 70 percent has occurred.

1. Install stabilized construction entrance; Establish equipment staging area and concrete wash out
2. Installation of TBMPs - rock berm, inlet protection and silt fences as appropriate
3. Grubbing & Clearing
4. Excavation
5. Grading
6. Infrastructure Construction
7. Building Construction
8. Establish 70 percent vegetative cover
9. Remove TBMPs

The temporary measures to be used during construction to prevent pollution of surface water, groundwater, and storm water runoff will be the use of silt fencing, inlet protection, and rock berm, as necessary, generally located along the down gradient side of the project area as indicated in the Water Pollution Abatement Plan. The stabilized construction entrance, concrete wash out and equipment staging area will be located as practicable. The equipment staging area and concrete washout should be in the proximity of the construction entrance / exit and not located near a well, floodplain, or other potential sources of contamination. Structural practices, as applicable, will be installed prior to each phase of the project and will be maintained during the construction of that phase. Disturbed areas will be stabilized, re-vegetated if denuded, within 14 days after temporary (21 days) or permanent cessation of construction activities. Any concrete, flatwork, and formwork would also be similarly timed to avoid any occurrence of a rain event.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT F

STRUCTURAL PRACTICES

The structural practices proposed that will limit runoff discharge of pollutants from exposed areas of the site will be the use of silt fences (sediment control rolls may be substituted where appropriate), rock berms or gabions, inlet protection, concrete wash out, equipment staging area, and stabilized construction entrances to prevent the suspended solids and sediments from washing across the site.

1. A stabilized construction entrance with washout pit will be constructed at all locations where vehicular traffic enters and leaves the site. This will reduce tracking of sediments onto adjacent roadways and provide a stable area for entrance or exit from the construction site.

2. An equipment staging area will be established. This should be located in the proximity of the construction entrance / exit. This will provide a controlled and stable area to set-up materials and equipment.

3. Silt fencing will be installed adjacent to any drainage way which receives sheet flow from up gradient-disturbed areas and along the side slope perimeter of disturbed areas when no other TBMPs / Structural Practices are available.

4. Silt fencing will be installed in areas where up gradient flow from disturbed areas is concentrated, Washout of silt fencing may occur and should be monitored. Rock berms or gabions may also be installed along the side slope perimeter of disturbed areas if the up gradient flow is concentrated to prevent washout of silt fencing.

5. Gravel filter bags filled with washed pea gravel will be used at storm drainage inlets prior to stabilization of the drainage areas. Alternative inlet protection may be utilized as appropriate.

6. Rock berms or gabions will be installed at points of concentrated flow to trap sediment prior to exiting the site and prevent down gradient erosion.

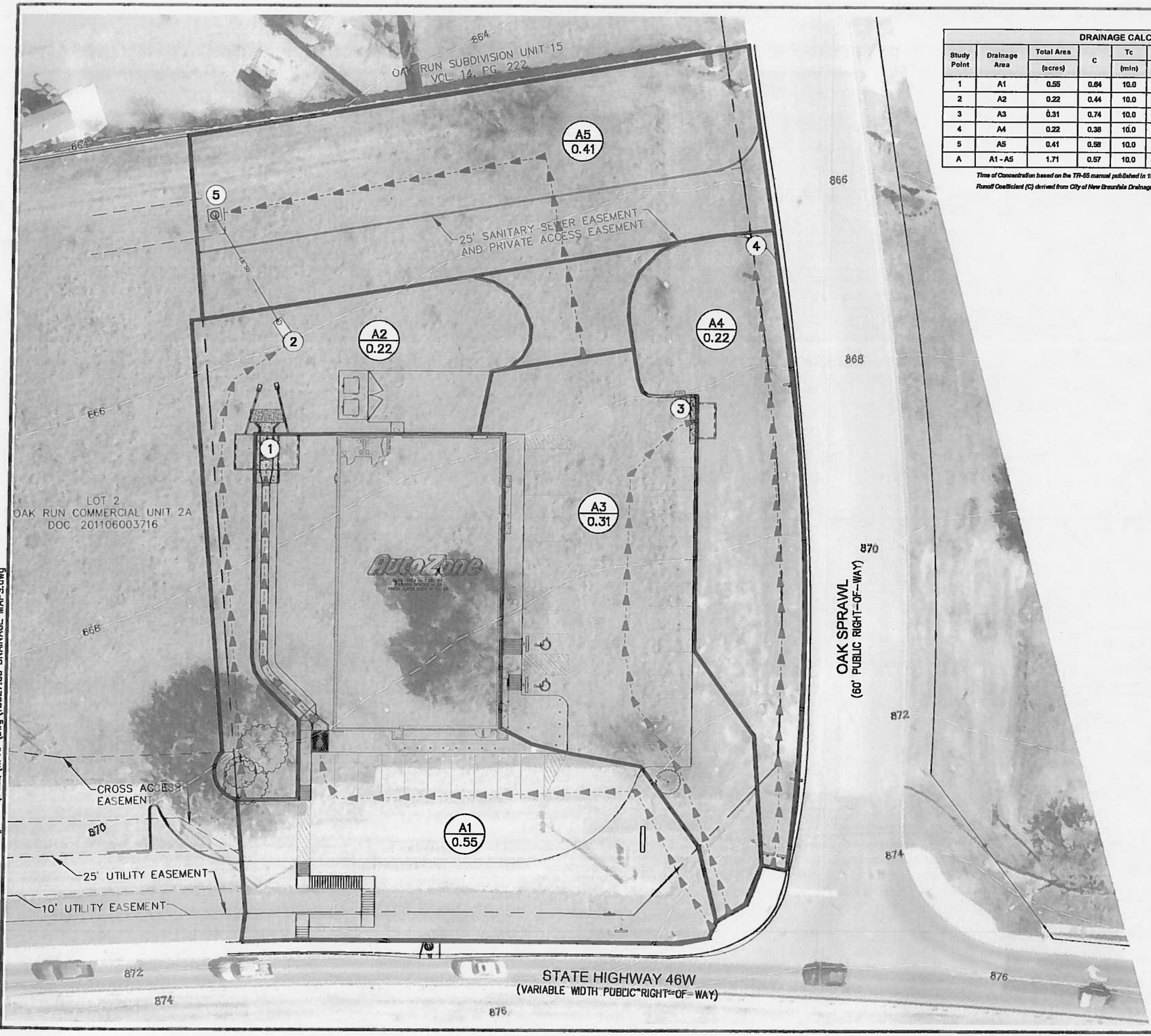
AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT G

DRAINAGE AREA MAP

The drainage area map included with this section shows that the proposed project is divided into multiple drainage areas. The disturbed area which will be under construction and contributing to a specific point at any one time will not exceed 10 acres. Therefore the typical erosion and sedimentation controls will be sufficient to prevent the migration of loose or disturbed soils.

Please review the drainage area map on the following page.



DRAINAGE CALCULATIONS - PROPOSED (ULTIMATE) CONDITIONS

Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr) 2-Yr	10-Yr	25-Yr	100-Yr	Discharge, Q (cfs) 2-Yr (K=1.0)	10-Yr (K=1.0)	25-Yr (K=1.1)	100-Yr (K=1.25)
1	A1	0.55	0.64	10.0	4.92	7.557	9.088	11.941	1.7	2.7	3.5	5.3
2	A2	0.22	0.44	10.0	4.92	7.557	9.088	11.941	0.5	0.7	1.0	1.4
3	A3	0.31	0.74	10.0	4.92	7.557	9.088	11.941	1.1	1.7	2.3	3.4
4	A4	0.22	0.38	10.0	4.92	7.557	9.088	11.941	0.4	0.6	0.8	1.2
5	A5	0.41	0.58	10.0	4.92	7.557	9.088	11.941	1.1	1.7	2.3	3.4
A	A1 - A5	1.71	0.57	10.0	4.92	7.557	9.088	11.941	4.8	7.4	9.7	14.5

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.
Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-7.

SCALE: 1" = 40'

LEGEND

- 1200 — EXISTING CONTOURS
- DRAINAGE AREA
- FLOW PATH
- A1 / 1.00 — AREA / ACREAGE
- (1) — STUDY POINT

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
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www.coursen-koehler.com · TBPE Firm No. F-10747

AUTOZONE TX #3679
NEW BRAUNFELS, TEXAS
PROPOSED DRAINAGE PLAN

RECEIVED
MAR 04 2016
COUNTY ENGINEER

JOB NO.:	15027.00
DATE:	JAN 07, 2016
DRAWN:	AAL

Date: Feb 23, 2016, 8:07am User ID: JVillafana
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 DRAINAGE MAPS.dwg

PERMANENT STORMWATER

TCEQ-0600

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), 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 **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Garth Coursen, P.E.

Date: 2/23/2016

Signature of ~~Customer~~/Agent

Regulated Entity Name: Auto Zone #3679

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

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

   ☐ N/A

2. ☒ 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

3. ☒ 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

4. 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.

5. 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 A - 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.

6. ☒ **Attachment B - 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.

7. ☒ **Attachment C - 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.

8. ☐ **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☒ N/A

9. ☒ The applicant understands that 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.

☒ 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 has not been proposed.

☐ **Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☒ Design calculations (TSS removal calculations)
☒ TCEQ construction notes
☒ All geologic features
☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☒ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☐ Signed by the owner or responsible party
    ☒ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☒ A discussion of record keeping procedures

    ☐ N/A

12. ☐ **Attachment H - 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

13. ☐ **Attachment I -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 results in water quality degradation.

    ☒ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☒ 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.

    ☐ N/A

15. ☒ 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.

    ☐ N/A

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT B

BMPs FOR UPGRADIENT STORMWATER

No surface water or groundwater that originates up gradient from the site will flow across the site. Stormwater that originates up gradient from the site will sheet flow across the site into a proposed parking lot and has been included in Catchment Areas A1 and A3. BMPs for up gradient stormwater treatment are provided for as part of, or in relation to this project. Stormwater from Catchment Areas A1 and A3 will be treated with a proposed Filterra.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT F

CONSTRUCTION PLANS

Following are construction plans and design calculations for the proposed BMPs. Calculations support the removal of the target amount of total suspended solids (TSS). Additional removal and over treatment of TSS has been provided by the Filterra systems. Impervious cover calculations have also been included. Calculations to determine the amount of TSS removed followed the methods shown in the Technical Guidance Manual.

A summary table of proposed Permanent BMPs is included in the calculations.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT F

Impervious Cover

&

TSS Calculations

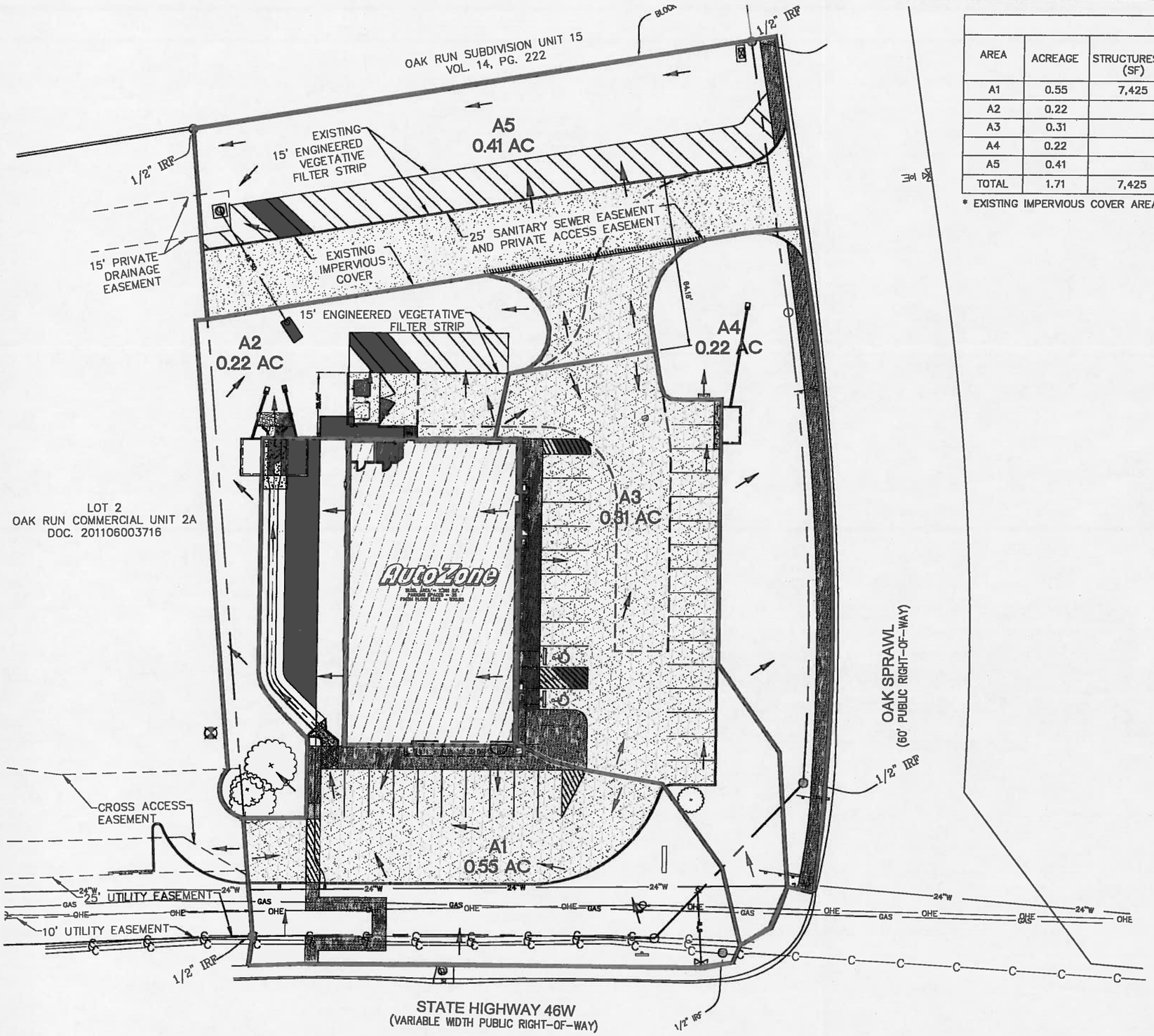
ATTACHMENT F
SUMMARY OF PERMANENT BMPs

PROJECT INFO	
1.71	ACRES
0.84	ACRES OF IC
637	# TSS

WATERSHED / CATCHMENT AREA	PERMANENT BMP	GROSS AREA ACRES	IMP. COVER ACRES	PEAK TREATMENT FLOW REQ. ft^3/s	DESIGN CAPTURE FLOW RATE ft^3/s	MIN. TSS REMOVAL (Lm) lb	DESIGN TSS REMOVAL (Lr) lb
A1*	Filterra	0.55	0.34	0.567	0.590	305	336
A2	VFS	0.22	0.03	-	-	27	27
A3*	Filterra	0.31	0.26	0.285	0.295	233	245
A4	None	0.22	0.03	-	-	27	-
A5**	VFS	0.41	0.18	-	-	45	45
TOTAL		**1.71**	**0.84**			**637**	**653**

An Overall Excess of 16 lb/yr of TSS Removal is provided for the Development

**Area A4 is an Uncaptured Area; Over Treatment is provided by Permanent BMPs designed for A1 & A3*
***Includes treatment of existing impervious cover (0.13 acres)*



IMPERVIOUS COVER SUMMARY							
AREA	ACREAGE	STRUCTURES IC (SF)	PARKING & OTHER IC (SF)	EXISTING IC (SF)	TOTAL POST DEVELOPMENT IC		TOTAL POST DEVELOPMENT IC (%)
					(SF)	(AC)	
A1	0.55	7,425	7,365		14,790	0.34	62%
A2	0.22		1,326		1,326	0.03	14%
A3	0.31		11,467		11,467	0.26	84%
A4	0.22		1,440		1,440	0.03	14%
A5	0.41		1,764	5,870*	7,634	0.18	44%
TOTAL	1.71	7,425	23,362	5,870*	36,657	0.84	49%

* EXISTING IMPERVIOUS COVER AREA 5,870 SF (0.13 AC OF IC TREATED BY EXISTING BMP-VFS)

SCALE: 1" = 40'

LEGEND

- STRUCTURES IC
- PARKING IC
- OTHER IC
- 15' ENGINEERED VEGETATIVE FILTER STRIP
- FLOW ARROW

RECEIVED
MAR 04 2016
COUNTY ENGINEER

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Warfield, Suite 200 · San Antonio, Texas 78216
Tel: 210.807.9030 · Fax: 210.855.5530
www.coursen-koehler.com · TBPE Firm No. F-10747

AUTOZONE TX #3679
NEW BRAUNFELS, TEXAS
IMPERVIOUS COVER EXHIBIT

JOB NO.:	15027.00
DATE:	JAN 07, 2016
DRAWN:	AAL

1 OF 1

Date: Feb 23, 2016, 10:33am User ID: JVillafana
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\Impervious Cover.dwg

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: AutoZone TX # 3679
Date Prepared: 2/22/2016

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = 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 =	**Comal**	
Total project area included in plan * =	**1.71**	acres
Predevelopment impervious area within the limits of the plan * =	**0.13**	acres
Total post-development impervious area within the limits of the plan* =	**0.84**	acres
Total post-development impervious cover fraction * =	**0.49**	
P =	**33**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**637**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**5**	

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

Drainage Basin/Outfall Area No. =	**1**	
Total drainage basin/outfall area =	**0.55**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.34**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.62**	
$L_{M\ THIS\ BASIN}$ =	**305**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**FT**	abbreviation
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:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	**0.55**	acres
A_I =	**0.34**	acres
A_P =	**0.21**	acres
L_R =	**349**	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	**336**	lbs.
F =	**0.96**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.00**	acres
Offsite impervious cover draining to BMP =	**0.00**	acres

Calculations from RG-348
Pages Section 3.2.19

Rainfall Intensity =	**1.80**	inches per hour
Effective Area =	**0.31**	acres
Peak Treatment Flow Required =	**0.567**	cubic feet per second

7. Filterra
Designed as Required in RG-348
Section 3.2.19

Flow Through Filterra Size		
Filterra Size for Flow-Based Configuration =	**(2) 13x7 units**	
Filterra Treatment Flow Rate =	**0.590**	cfs

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone # 3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): Drainage / Catchment Area - A2

Drainage Basin/Outfall Area No. =	A2	
Total drainage basin/outfall area =	0.22	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.03	acres
Post-development impervious fraction within drainage basin/outfall area =	0.14	
$L_{M\ THIS\ BASIN}$ =	27	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.8 + 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 =	0.22	acres
A_I =	0.03	acres
A_P =	0.19	acres
L_R =	32	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 27 lbs.

F = 0.84

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: AutoZone TX # 3679
Date Prepared: 2/22/2016

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = 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 =	**Comal**	
Total project area included in plan * =	**1.71**	acres
Predevelopment impervious area within the limits of the plan * =	**0.13**	acres
Total post-development impervious area within the limits of the plan* =	**0.84**	acres
Total post-development impervious cover fraction * =	**0.49**	
P =	**33**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**637**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**5**	

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

Drainage Basin/Outfall Area No. =	**3**	
Total drainage basin/outfall area =	**0.31**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.26**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.84**	
$L_{M\ THIS\ BASIN}$ =	**233**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**FT**	abbreviation
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:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	**0.31**	acres
A_I =	**0.26**	acres
A_P =	**0.05**	acres
L_R =	**265**	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	**245**	lbs.
F =	**0.92**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.00**	acres
Offsite impervious cover draining to BMP =	**0.00**	acres

Calculations from RG-348
Pages Section 3.2.19

Rainfall Intensity =	**1.20**	inches per hour
Effective Area =	**0.24**	acres
Peak Treatment Flow Required =	**0.285**	cubic feet per second

7. Filterra
Designed as Required in RG-348
Section 3.2.19

Flow Through Filterra Size

Filterra Size for Flow-Based Configuration =	**13x7**	
Filterra Treatment Flow Rate =	**0.295**	cfs

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone # 3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): Drainage / Catchment Area - A4

Drainage Basin/Outfall Area No. =	A4	
Total drainage basin/outfall area =	0.22	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.03	acres
Post-development impervious fraction within drainage basin/outfall area =	0.14	
$L_{M\ THIS\ BASIN}$ =	27	lbs.

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone #3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches

$L_{M\ TOTAL\ PROJECT}$ = 637 lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): Drainage / Catchment Area - A5

Drainage Basin/Outfall Area No. =	A5	
Total drainage basin/outfall area =	0.41	acres
Predevelopment impervious area within drainage basin/outfall area =	0.13	acres
Post-development impervious area within drainage basin/outfall area =	0.18	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	45	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

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

where:

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

A_C =	0.41	acres
A_I =	0.17	acres
A_P =	0.24	acres
L_R =	169	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 45 lbs.

F = 0.27

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

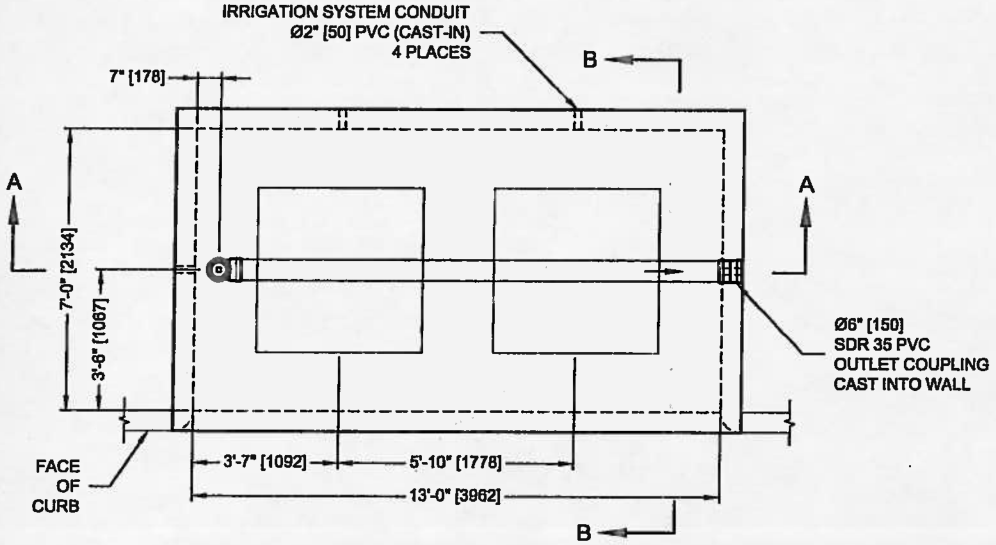
There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT F

Construction Plans

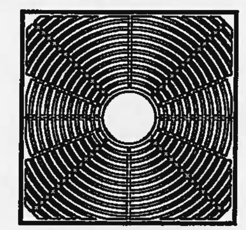


PLAN VIEW

Ø 7" x 8" [178 x 203]

CLEANOUT

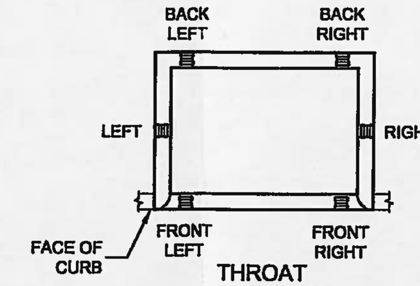
(ACTUAL PRODUCT MAY VARY)
N.T.S.



48" x 48" [1219 x 1219]

TREE GRATE

(ACTUAL PRODUCT MAY VARY)
N.T.S.

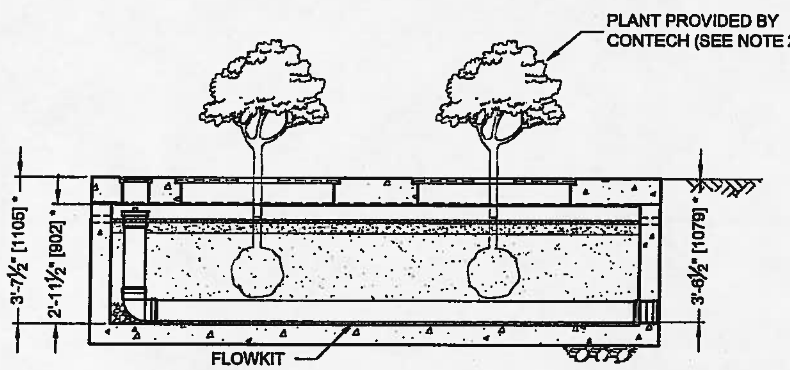


OUTFLOW PIPE ORIENTATION OPTIONS

ORIENTATION REFERENCE IS INLET THROAT

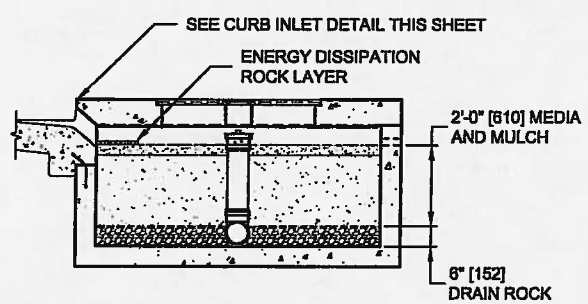
FILTERRA DESIGN NOTES

THE FILTERRA TREATMENT CAPACITY IS DETERMINED BY THE TREATMENT RATE OF THE FILTERRA MEDIA. A SEPARATE INLET STRUCTURE MUST BE INSTALLED DOWNSTREAM OF THE OFFLINE FILTERRA TO CONVEY FLOWS IN EXCESS OF THE SYSTEM DESIGN CAPACITY. SEE THE FILTERRA DESIGN, OPERATION, AND PERFORMANCE GUIDE FOR MORE INFORMATION.

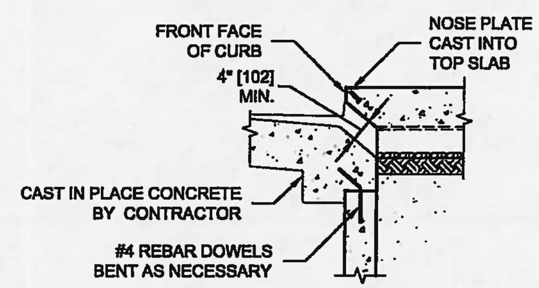


* DIMENSION MAY VARY ± ½" DEPENDING ON PRECASTER BUILD CONFIGURATION.

SECTION A-A



SECTION B-B

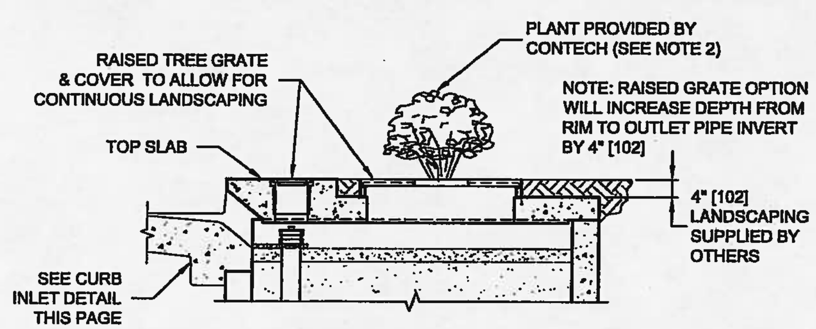


CURB INLET DETAIL

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			A3
SYSTEM TREATMENT CAPACITY (CFS / l/s)			0.295
WATER QUALITY FLOW RATE (CFS / l/s)			0.285
PEAK FLOW RATE (CFS / l/s)			1.10 CFS
RETURN PERIOD OF PEAK FLOW (YRS)			2yr
REQUIRED MEDIA INFILTRATION RATE			100 in/hr
PIPE DATA:	I.E.	MATERIAL	DIAMETER
OUTLET PIPE	*	SDR 35	6"
CURB OPENING ORIENTATION			LONG
TOP OF CURB ELEVATION			870.10
ANTI-FLOTATION BALLAST IF REQUIRED		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD



OPTIONAL RECESSED TOP SLAB DETAIL

(TYPICAL TOP SLAB DETAIL SHOWN IN SECTION B-B)

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. PLANT, MULCH, AND DISSIPATION ROCK ARE SUPPLIED BY CONTECH AND DELIVERED AT TIME OF SYSTEM ACTIVATION. PLANT SELECTION SHALL BE DONE BY THE ENGINEER OF RECORD IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
3. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
4. FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
5. FILTERRA WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
6. STRUCTURE DESIGNED FOR PEDESTRIAN LIVE LOAD WITH H5 (4,000 LBS.) WHEEL LOAD MOUNTING THE CURB AND ADJACENT HS-2 LIVE LOAD SURCHARGE ON THE WALLS ON THE STRUCTURE.
7. FILTERRA STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND ACI-318 LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE FILTERRA VAULT (LIFTING CLUTCHES PROVIDED). SPREADER BAR WITH SUFFICIENT CABLE IS REQUIRED FOR SAFETY AND REDUCTION OF DAMAGE TO CONCRETE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL VAULT SECTIONS AND ASSEMBLE VAULT.
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F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT FILTERRA MEDIA BAY FROM CONSTRUCTION-RELATED EROSION RUNOFF.
G. CONTECH IS RESPONSIBLE FOR ACTIVATION OF THE SYSTEM AND PLANTING OF THE PLANT THAT IS SPECIFIED. ACTIVATION ONLY OCCURS WHEN THE SITE IS FULLY STABILIZED, FINAL PAVEMENT INSTALLED AND SWEPT CLEAN OF CONSTRUCTION SEDIMENT.
H. ALL FILTERRA UNITS MUST BE WATERED BY IRRIGATION LINES OR SPRINKLER SYSTEMS ON A REGULAR BASIS. EACH FILTERRA UNIT INCLUDES IRRIGATION HOLES FOR NEW OR EXISTING IRRIGATION LINES.

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CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA 13x7 OFFLINE STANDARD
LONG SIDE INLET
MODEL: FT1307

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Warfield, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.5530
www.coursen-koehler.com • TBPE Firm No. F-10747

STATE OF TEXAS
GARTH E. COURSEN
94784
LICENSED PROFESSIONAL ENGINEER
02/23/2016

AUTOZONE STORE 3679
NEW BRAUNFELS, TEXAS
WATER POLLUTION ABATEMENT PLAN
WATER QUALITY DETAILS

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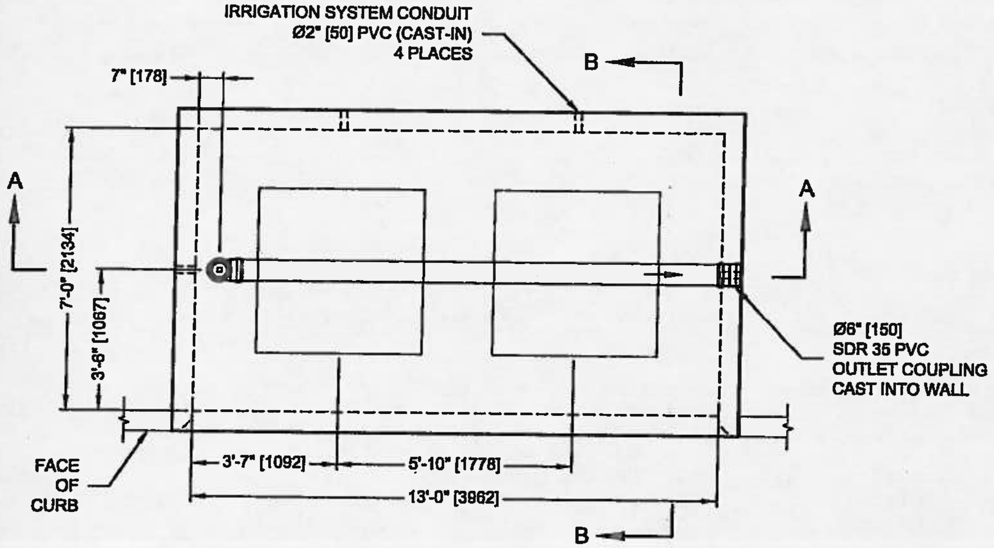
JOB NO.:	15027.00
DATE:	FEB 2016
DRAWN:	AAL
SHEET:	2 OF 2

Date: Feb 23, 2016, 2:12pm User ID: JVillafano
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 WPAP Water Quality Details.dwg



PLAN VIEW

Ø 7" x 8" [178 x 203]
CLEANOUT
(ACTUAL PRODUCT MAY VARY)
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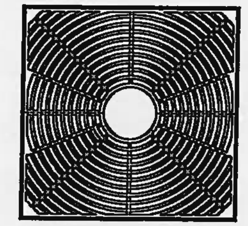

48" x 48" [1219 x 1219]
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(ACTUAL PRODUCT MAY VARY)
N.T.S.

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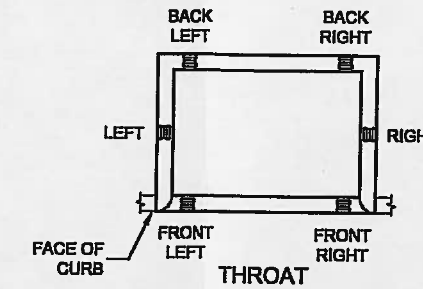

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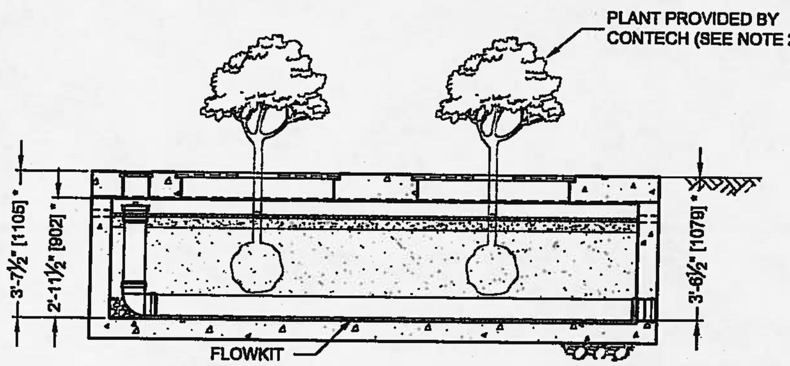
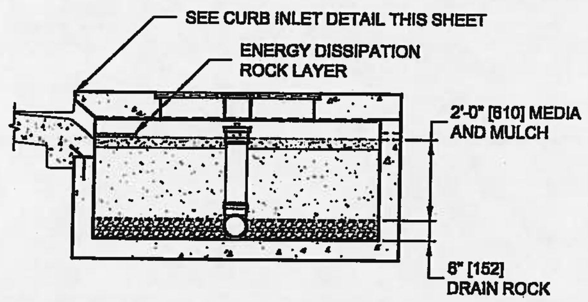
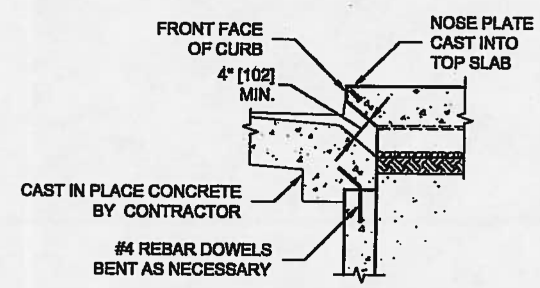


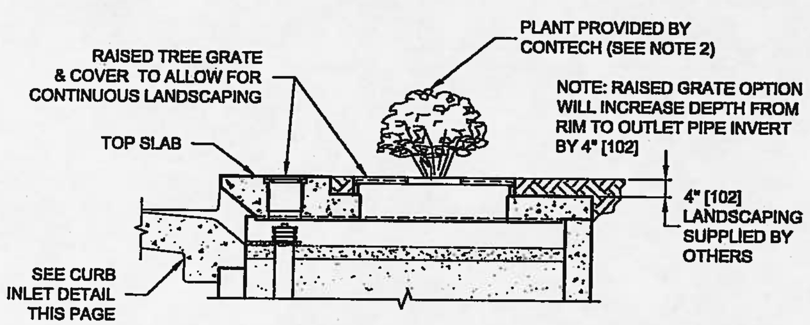
SECTION A-A



SECTION B-B



CURB INLET DETAIL



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www.coursen-koehler.com · TBPE Firm No. F-10747

STATE OF TEXAS
GARTH E. COURSEN
94784
LICENSED
PROFESSIONAL ENGINEER
02/23/2016

AUTOZONE STORE 3679
NEW BRAUNFELS, TEXAS
WATER POLLUTION ABATEMENT PLAN
WATER QUALITY DETAILS

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Date: Feb 23, 2016, 2:12pm User ID: JVillafana
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 WPAP Water Quality Details.dwg

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT G

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

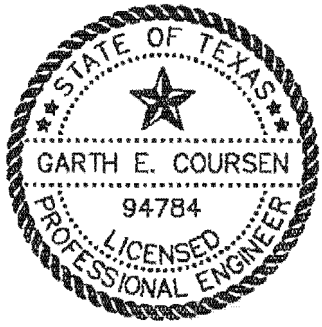
The following sheets include the inspection, maintenance, repair, and retrofit plans for the following:

- Filterra water quality structure
- Engineered Vegetative Filter Strip

It should be noted that the timing and procedures presented herein are general guidelines. Adjustments to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions.

Engineer Certification:

I certify that the suggested inspection, maintenance, repair, and retrofit plans provided within ATTACHMENT G of the PERMANENT STORMWATER SECTION were prepared by the engineer designing the permanent BMPs and measures.



Garth Coursen, P.E.
Print Name of Engineer

, PE

Date 02/23/2016

Signature of Engineer

SUGGESTED MAINTENANCE PLAN & SCHEDULE
VEGETATIVE FILTER STRIPS

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The care and maintenance a vegetated filter strip receives in the first few months are keys to establishing the viability of the filter strips. Once a vegetated area is well established, little additional maintenance is generally necessary, however, all vegetated Best Management Practices (BMPs) require some basic maintenance including:

Pest Management: An Integrated Pest Management Plan (IPM) should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

Seasonal Mowing and Lawn Care: If the filter strip is made of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clipping). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clipping and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum. Healthy grass may be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site may also help assure a dense and healthy vegetative cover.

Inspection: Inspection of filter strips should be done at least twice annually for erosion or damage to vegetation; however, additional inspections after periods of heavy runoff are most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover will be made during the first few years after establishment to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections should be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

Debris and Litter Removal: Any filter strip or filter strip structures (i.e. leveled spreaders) should be kept free of obstructions to reduce floatables from being flushed downstream, and for aesthetic reasons. The need for this practice will be determined through periodic inspection, but will be performed no less than four (4) times per year.

Sediment Removal: Sediment removal is not normally required in filter strips. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand, with flat-bottomed shovels, or light construction equipment.

Grass Re-seeding and Mulching: A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. Flow should be diverted, if possible, from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during dry periods, particularly as the vegetation is initially established.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of San Antonio guidelines (if within jurisdiction of City of San Antonio) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or SAWS officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

Contact Person: Mitch Bramlitt

Entity: AutoZone Development Corporation

Mailing Address: 123 South Front Street

City, State and Zip: Memphis, Tn 38103

Telephone: 901.495.8714 Facsimile: 901.495.8300

Email: Mitch.bramlitt@autozone.com

Signature of Responsible Party

Date

SUGGESTED MAINTENANCE PLAN & SCHEDULE
FILTERRA BIORETENTION SYSTEM

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The Filterra Bioretention System should be inspected at semiannual basis (generally spring and fall servicing) and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend on site specific activities. Typical designs are intended for an semiannual maintenance cycle. The attached manufacturer recommended guidelines are included in the *Suggested Maintenance Plan and Schedule* and should be followed.

Inspections: Inspection of the storage component should occur at a minimum of twice a year. The inspection should be of the structure and media.

Debris and Litter Removal: Debris, silt and mulch must be removed from the filter surface.

Filterra System Sample Inspection & Maintenance Log

Model:							**Location:**	
Date	1	2	3			Maintenance Performed	Maintenance Personnel	Comments

Each Maintenance session should include the following:

1. Inspection of the unit structure and media;
2. Removal of trash, silt and mulch from the inlet and/or filter media;
3. After the removal of trash, silt and mulch, measure the distance from the top of the Filterra engineered media soil to the bottom of the top slab. If this distance is greater than 12 inches, add Filterra media (not top soil or other) to recharge the media to a 9 inch distance;
4. Replace the mulch layer, to the design depth, with mulch that meets the technical specifications;

5. Ensure correct repositioning of the erosion control stones by the Filterra inlet to allow for the entry of trash during a storm event;
6. Pruning of vegetation. If the vegetation is in dead or in poor health, it will require replacement; and;
7. Disposal of all removed items.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of New Braunfels guidelines (if within jurisdiction of City of New Braunfels) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or New Braunfels officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

To ensure Filterra is operating at the design flow rate of 140 inches/hr, the unit should be flow tested every three years by the project owner using a double-ring infiltrometer or other appropriate flow test method. Appropriate maintenance must be provided if the observed rate is less than 140 inches/hr. This might include replacement of the mulch or the surface soil layer. If this does not restore the unit to the design infiltration rate, all of the media may require replacement.

If standing water is observed for more than five to ten minutes within the system after a storm event or after a flow test, the Filterra system will also require investigation.
Trash, debris and mulch should be removed, and the mulch replaced. If this does not resolve the issue then the first few inches of media may need replacement to restore flow rates. Reduction in design flow rate may be caused by fine sediment accumulation from construction sediment, an oil or petroleum spill, grease from food fats, a blockage within or downstream of the discharge pipe, or simply a lack of maintenance for an extended period of time that has resulted in excessive sediment accumulation.

Serious oil, petroleum or hazardous substance spill, or other event that inundates the system beyond the ability to restore the design flow rate, will require removal and replacement of the media, mulch and plant. Media removal and replacement is normally performed with a vacuum truck. Only thoroughly tested. Quality controlled media from Americast (the parent company that developed Filterra) should be used as replacement media to ensure system water quality and flow rate performance. Americast should be contacted for replacement media. Americast, at an additional cost, can perform media replacement, or this can be contracted out.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

Contact Person: Mitch Bramlitt

Entity: AutoZone Development Corporation

Mailing Address: 123 South Front Street

City, State and Zip: Memphis, Tn 38103

Telephone: 901.495.8714 Facsimile: 901.495.8300

Email: Mitch.bramlitt@autozone.com

Signature of Owner/Responsible Party

Date

APPLICATION FEE / CHECK

TCEQ-0574

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: AutoZone #3679
Regulated Entity Location: Northwest corner of HW 46 and Oak Spawl
Name of Customer: New Braunfels Investment Joint Venture
Contact Person: Edward Badouh, III Phone: 830-609-0630
Customer Reference Number (if issued):CN 602512097
Regulated Entity Reference Number (if issued):RN 108955014

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	1.71 Acres	$ 4,000.00
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: 04/22/2016

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 CORE DATA FORM

TCEQ-10400

PARTNERSHIP AUTHORIZATION
(To Sell Real Estate)

Date: **February 6th, 2015**

Partnership Name and Address: **NEW BRAUNFELS INVESTMENT JOINT VENTURE**
P. O. Box 311240
New Braunfels, Texas 78131

The undersigned persons whose signatures appear below hereby certify that the Partnership is a Texas joint venture partnership owned entirely by the undersigned.

The undersigned hereby agree that the Managing Joint Venture Partner, defined below, of the Partnership may sell and convey any and all real property owned by the Partnership, including without limitation, the following described real property, executing proper deeds therefor and any other agreement pertaining to any such sale and conveyance:

> Lot 1, Block 1, OAKRUN COMMERCIAL RESERVE - UNIT 11A, Comal County, Texas, according to plat thereof recorded in Document No. 201506001838, Official Public Records of Comal County, Texas;
>
> TOGETHER WITH those certain non-exclusive reciprocal ingress and egress easements as created and granted in Declaration of Easements dated effective July 10, 2008, recorded under Document No. 200806026830, Official Public Records of Comal County, Texas, as amended.

The undersigned hereby further agree that all persons are authorized and directed, without limitation or inquiry, irrespective of the circumstances, to honor and carry out all orders, directions or instructions of **Edward Badouh, III**, Vice-President of **OAKRUN REALTY, INC.**, a Texas corporation (the "Managing Joint Venture Partner") as to any such transaction.

All parties shall be entitled to act in reliance upon the matters herein contained without further inquiry of any kind, notwithstanding anything contained in the Amended and Restated Joint Venture Agreement of New Braunfels Investment Joint Venture, as amended (the "Partnership Agreement") or any other agreements or documents, it being expressly acknowledged and agreed that in the event of any inconsistencies between this Partnership Authorization and the Partnership Agreement, the terms of this Partnership Authorization shall govern.

The signors hereto declare that no person or persons other than those whose names are affixed to this statement are partners of the Partnership and that all persons executing below are duly authorized to do so and bind themselves or the entity on whose behalf they are acting.

The Partnership is a joint venture partnership duly organized and validly existing and in good standing under the laws of the State of Texas, and has complied with all conditions prerequisite to its doing business in the State of Texas. There are no proceedings or actions pending, threatened or contemplated for the liquidation, termination or dissolution of the Partnership.

[Signature Page to Follow]

Names and Signatures of All Partners:

AML PROPERTIES, LTD.,
a Texas limited partnership

By: AML Management Co., No. II, L.L.C.,
a Texas limited liability company,
its general partner

By: _____
Alcide M. Longoria, Manager

SEGUIN STREET MANAGEMENT, INC.
a Texas corporation

By: _____
Edward Badouh, III, Vice-President

OAKRUN REALTY, INC.,
a Texas corporation

By: _____
Edward Badouh, III, Vice-President

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN
GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL, OR OTHER SENSITIVE FEATURE.

5. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE TEMPORARY STORM WATER SECTION OF THE APPROVED EDWARDS AQUIFER PROTECTION PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS TO WATER QUALITY (E.G., FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).

7. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50% A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

8. 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).

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. 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.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD 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:

A. 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;

B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

AUSTIN REGIONAL OFFICE
2800 S. IH 35, SUITE 100
AUSTIN, TEXAS 78704-5712
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

GENERAL NOTES:

1. THE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST MEET ALL APPLICABLE CRITERIA OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY SET FORTH IN 30 TEXAS ADMINISTRATIVE CODE (TAC) 213.5(B) – WATER POLLUTION ABATEMENT PLAN FOR REGULATED ACTIVITIES UNDERTAKEN ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER.

2. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE REQUIRED DURING CONSTRUCTION. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED. THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSPECTED PERIODICALLY FOR DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES AND FOLLOWING EVERY RAINFALL. DAMAGED OR OBSTRUCTED CONTROLS MUST BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN PROPER OPERATION.

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE OWNER MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE SENSITIVE FEATURE DISCOVERED. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE INFRASTRUCTURE.

4. ANY MODIFICATION TO THE APPROVED WATER POLLUTION ABATEMENT PLAN MUST BE SUBMITTED TO THE APPROPRIATE REGIONAL OFFICE FOR APPROVAL BY THE EXECUTIVE DIRECTOR OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY BEFORE CONSTRUCTION OF THE PROPOSED MODIFICATION MAY COMMENCE.

5. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.

6. CONTRACTOR IS RESPONSIBLE FOR ALL REGULATED AGENCY NOTIFICATIONS. RECORDS AND DOCUMENTATION OF THE SAME MUST BE MADE AVAILABLE UPON REQUEST.

VEGETATIVE FILTER STRIPS:
NATURAL FILTER STRIPS:

1. THE FILTER STRIP SHOULD EXTEND ALONG THE ENTIRE LENGTH OF THE CONTRIBUTING AREA.
2. THE SLOPE SHOULD NOT EXCEED 10%
3. THE MINIMUM DIMENSION (IN THE DIRECTION OF FLOW) SHOULD BE 50 FEET.
4. ALL OF THE FILTER STRIP SHOULD LIE ABOVE THE ELEVATION OF THE 2-YR, 3-HR STORM OF ANY ADJACENT DRAINAGE.
5. THERE IS NO REQUIREMENT FOR VEGETATION DENSITY OR TYPE.

MAINTENANCE:
FILTER STRIPS:
SEASONAL MOWING AND LAWN CARE – IF THE FILTER STRIP IS MADE OF TURF GRASS, IT SHOULD BE MOWED AS NEEDED TO LIMIT VEGETATION HEIGHT TO 18 INCHES, USING A MULCHING MOWER (OR REMOVAL OF CLIPPING). IF NATIVE GRASSES ARE USED, THE FILTER MAY REQUIRE LESS FREQUENT MOWING, BUT A MINIMUM OF TWICE ANNUALLY. GRASS CLIPPING AND BRUSH DEBRIS SHOULD NOT BE DEPOSITED ON VEGETATED FILTER STRIP AREAS. REGULAR MOWING SHOULD ALSO INCLUDE WEED CONTROL PRACTICES, HOWEVER HERBICIDE USE SHOULD BE KEPT TO A MINIMUM. HEALTHY GRASS MAY BE MAINTAINED WITHOUT USING FERTILIZERS BECAUSE RUNOFF USUALLY CONTAINS SUFFICIENT NUTRIENTS. IRRIGATION OF THE SITE MAY ALSO HELP ASSURE A DENSE AND HEALTHY VEGETATIVE COVER. INSPECTION – INSPECTION OF FILTER STRIPS SHOULD BE DONE AT LEAST TWICE ANNUALLY FOR EROSION OR DAMAGE TO VEGETATION; HOWEVER, ADDITIONAL INSPECTIONS AFTER PERIODS OF HEAVY RUNOFF ARE MOST DESIRABLE. THE STRIP SHOULD BE CHECKED FOR UNIFORMITY OF GRASS COVER, DEBRIS AND LITTER, AND AREAS OF SEDIMENT ACCUMULATION. MORE FREQUENT INSPECTIONS OF THE GRASS COVER WILL BE MADE DURING THE FIRST FEW YEARS AFTER ESTABLISHMENT TO DETERMINE IF ANY PROBLEMS ARE DEVELOPING, AND TO PLAN FOR LONG-TERM RESTORATIVE MAINTENANCE NEEDS. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS SHOULD BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CONSTRUCTION OF A LEVEL SPREADER DEVISE MAY BE NECESSARY TO REESTABLISH SHALLOW OVERLAND FLOW.

DEBRIS AND LITTER REMOVAL.
ANY FILTER STRIP OR FILTER STRIP STRUCTURES (I.E. LEVELED SPREADERS) SHOULD BE KEPT FREE OF OBSTRUCTIONS TO REDUCE FLOATABLES FROM BEING FLUSHED DOWNSTREAM, AND FOR AESTHETIC REASONS. THE NEED FOR THIS PRACTICE WILL BE DETERMINED THROUGH PERIODIC INSPECTION, BUT WILL BE PERFORMED NO LESS THAN 4 TIMES PER YEAR.

SEDIMENT REMOVAL.
SEDIMENT REMOVAL IS NOT NORMALLY REQUIRED IN FILTER STRIPS. HOWEVER, SEDIMENT MAY ACCUMULATE ALONG THE UPSTREAM BOUNDARY OF THE STRIP PREVENTING UNIFORM OVERLAND FLOW. EXCESS SEDIMENT SHOULD BE REMOVED BY HAND, WITH FLAT-BOTTOMED SHOVELS, OR LIGHT CONSTRUCTION EQUIPMENT.

GRASS RESEEDING AND MULCHING.
A HEALTHY DENSE GRASS SHOULD BE MAINTAINED ON THE FILTER STRIP. IF AREAS ARE ERODED, THEY SHOULD BE FILLED, COMPACTED AND RESEEDED SO THAT THE FINAL GRADE IS LEVEL. GRASS DAMAGED DURING THE SEDIMENT REMOVAL PROCESS SHOULD BE PROMPTLY REPLACED USING THE SAME SEED MIX USED DURING FILTER STRIP ESTABLISHMENT. FLOW SHOULD BE DIVERTED, IF POSSIBLE, FROM THE DAMAGED AREAS UNTIL THE GRASS IS FIRMLY ESTABLISHED. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS MUST BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CORRECTIVE MAINTENANCE, SUCH AS WEEDING OR REPLANTING SHOULD BE DONE MORE FREQUENTLY IN THE FIRST TWO TO THREE YEARS AFTER INSTALLATION TO ENSURE STABILIZATION. DENSE VEGETATION MAY REQUIRE IRRIGATION IMMEDIATELY AFTER PLANTING, AND DURING DRY PERIODS, PARTICULARLY AS THE VEGETATION IS INITIALLY ESTABLISHED.

MAINTENANCE:
GRASSY SWALES
SEASONAL MOWING AND LAWN CARE
CHANNEL MOWING WILL BE PERFORMED ROUTINELY AS NEEDED THROUGHOUT THE GROWING SEASON. GRASS WILL BE MOWED AS NEEDED TO LIMIT VEGETATION HEIGHT TO 2 INCHES, ABOVE THE DESIGN WATER DEPTH USING A MULCHING MOWER (OR REMOVAL OF CLIPPING). IF NATIVE GRASSES ARE USED, THE SWALE MAY REQUIRE LESS FREQUENT MOWING, BUT A MINIMUM OF TWICE ANNUALLY. GRASS CLIPPING AND BRUSH DEBRIS WILL NOT BE DEPOSITED WITHIN THE CHANNEL. REGULAR MOWING WILL ALSO INCLUDE WEED CONTROL PRACTICES, HOWEVER HERBICIDE USE WILL BE KEPT TO A MINIMUM. HEALTHY GRASS MAY BE MAINTAINED WITHOUT USING FERTILIZERS BECAUSE RUNOFF USUALLY CONTAINS SUFFICIENT NUTRIENTS. IRRIGATION OF THE SITE MAY ALSO HELP ASSURE A DENSE AND HEALTHY VEGETATIVE COVER.

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INSPECTION OF FILTER STRIPS SHOULD BE DONE AT LEAST TWICE ANNUALLY FOR EROSION OR DAMAGE TO VEGETATION; HOWEVER, ADDITIONAL INSPECTIONS AFTER PERIODS OF HEAVY RUNOFF ARE MOST DESIRABLE. THE STRIP SHOULD BE CHECKED FOR UNIFORMITY OF GRASS COVER, DEBRIS AND LITTER, AND AREAS OF SEDIMENT ACCUMULATION. MORE FREQUENT INSPECTIONS OF THE GRASS COVER WILL BE MADE DURING THE FIRST FEW YEARS AFTER ESTABLISHMENT TO DETERMINE IF ANY PROBLEMS ARE DEVELOPING, AND TO PLAN FOR LONG-TERM RESTORATIVE MAINTENANCE NEEDS. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS SHOULD BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CONSTRUCTION OF A LEVEL SPREADER DEVISE MAY BE NECESSARY TO REESTABLISH SHALLOW OVERLAND FLOW.

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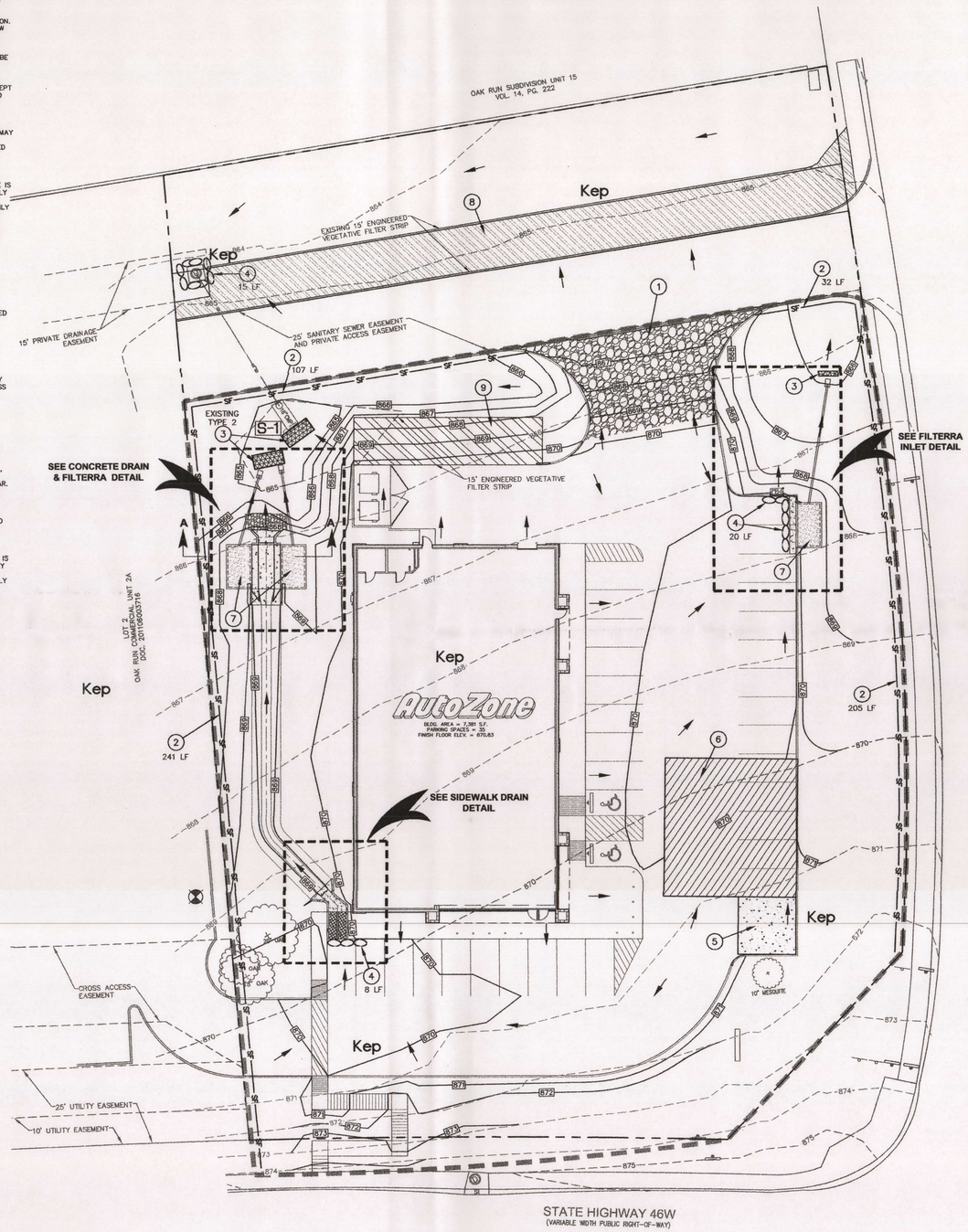
SAN ANTONIO WATER SYSTEM (SAWS)
ENVIRONMENTAL RECOMMENDATIONS

1. MEASURES SHOULD BE TAKEN TO INSURE STORMWATER DOES NOT LEAVE THE PROPERTY UNTREATED.
2. THE CITY OF SAN ANTONIO SHALL INSPECT ALL PENDING CONSTRUCTION OF SEWER MAINS AND SERVICE LATERALS FOR PROPER CONSTRUCTION ACCORDING TO STATE AND CITY REGULATIONS AND CODES.
3. THE STORAGE, HANDLING, USE AND DISPOSAL OF HAZARDOUS MATERIALS WITHIN THIS DEVELOPMENT SHALL BE CONSISTENT WITH THE LABELING OF THOSE MATERIALS, AND APPLICABLE REGULATIONS. FAILURE TO COMPLY WITH THE LABEL WARNINGS MAY CONSTITUTE A VIOLATION OF FEDERAL LAW.
4. LANDSCAPED AREAS SHOULD BE SENSITIVE TO MINIMIZING WATER NEEDS (I.E. USE OF NATIVE PLANTS) AND THAT A MINIMAL AMOUNT OF PESTICIDES, HERBICIDES, OR FERTILIZERS SHOULD BE USED.
5. IF ANY SOLUTION OPENINGS, CAVES, SINKHOLES, OR WELLS ARE DISCOVERED ON THE PROPERTY DURING CONSTRUCTION OR BLASTING, THE OWNER/CONTRACTOR SHOULD NOTIFY THE SAWS AQUIFER PROTECTION AND EVALUATION SECTION AT (210) 233-3522.
6. THE GROUND WATER RESOURCE PROTECTION SECTION SHOULD BE NOTIFIED AT (210) 233-3546 UPON DISCOVERY AND PLUGGING OF WELLS. WELLS THAT ARE NO LONGER IN USE OR ABANDONED SHALL BE PROPERLY PLUGGED IN ACCORDANCE WITH SAWS WATER WELL PLUGGING PROCEDURES.
7. PRIOR TO THE START OF ANY BMP CONSTRUCTION, THE OWNER/CONTRACTOR SHOULD NOTIFY SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 TO SCHEDULE A SITE INSPECTION.
8. AFTER BMP CONSTRUCTION IS COMPLETE AND PRIOR TO THE START OF BUSINESS, THE OWNER/CONTRACTOR SHOULD NOTIFY SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 TO SCHEDULE A SITE INSPECTION.
9. IF THE BMP FAILS TO DRAIN PROPERLY, THE OWNER SHOULD NOTIFY THE SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 PRIOR TO ANY DISCHARGE OF WATER.
10. IF AT ANY TIME THE OWNERSHIP OF THE PROPERTY CHANGES, THE SELLER MUST INFORM THE BUYER OF ALL REQUIREMENTS FOR MAINTENANCE OF THE BMP'S. A SIGNED BMP MAINTENANCE PLAN AND SCHEDULE AGREEMENT, FROM THE NEW OWNER, MUST BE SUBMITTED TO THE AQUIFER PROTECTION AND EVALUATION

NOTE:
SEDIMENTATION AND EROSION CONTROLS SHOWN ARE SCHEMATIC ONLY, CONTROLS MAY BE FIELD LOCATED FOR BEST USE AND REPORTED TO ENGINEER. ADJUSTMENTS SHALL BE INDICATED ON PLAN BY CONTRACTOR.



LEGEND

- EXISTING CONTOURS — 605 —
- FLOW ARROW →
- AREA OF SOIL DISTURBANCE
- APPROXIMATE 100YR WATER SURFACE
- (1) STABILIZED CONSTRUCTION ENTRANCE/EXIT
- (2) SILT FENCE AND/OR APPROPRIATE SUBSTITUTE —SF—SF—
- (3) ROCK BERM OR GABION
- (4) BAGGED GRAVEL INLET FILTER AND/OR APPROPRIATE SUBSTITUTE
- (5) *CONCRETE WASH OUT PIT 4' x 4'
- (6) *EQUIPMENT STAGING AREA
- (7) FILTERRA MEDIA FILTER
- (8) EXISTING 15' WIDE ENGINEERED VEGETATIVE FILTER STRIP
- (9) PROPOSED 15' WIDE ENGINEERED VEGETATIVE FILTER STRIP

*NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/ EXIT AND NOT LOCATED NEAR A WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.

**POTENTIAL RECHARGE FEATURE ● S-1

* NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/ EXIT AND NOT LOCATED NEAR A WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.

** REFER TO GEOLOGIC SITE ASSESSMENT

NOTE:
WATER POLLUTION ABATEMENT CONTROLS SHOWN ARE SCHEMATIC ONLY, CONTROLS MAY BE FIELD LOCATED FOR BEST USE AND REPORTED TO ENGINEER. ADJUSTMENTS SHALL BE INDICATED ON PLAN BY CONTRACTOR.

RECEIVED
MAR 04 2016
COUNTY ENGINEER

STATE OF TEXAS
GARTH E. COURSEN
94784
LICENSED PROFESSIONAL ENGINEER
02/24/2016

OWNER:
AutoZone, Inc.
123 S. FRONT STREET, 3rd FLOOR
MEMPHIS, TENNESSEE 38103

PREPARED FOR: AutoZone STORE DEVELOPMENT
Store No.: 3679 TX-46 NEW BRAUNFELS TEXAS 78132

WPAP SITE PLAN / SWPPP

SCALE: 1" = 20'-0"

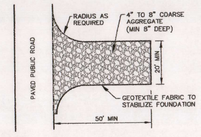
REVISIONS
1. 01/14/2016 ADDED ENGINEERED VEGETATIVE FILTER STRIP
2. 02/19/2016 TCEQ COMMENTS
3.
4.
5.
6.
7.

ENGINEER: RRD
DRAFTSMAN: AAL
CHECKED BY: GC
DATE 02/21/16
PROTOTYPE SIZE

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Wetfield, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.5530
www.coursen-koehler.com • TBPE Firm No. F-10747
CKE JOB NO. - 15082.00

1 of 2

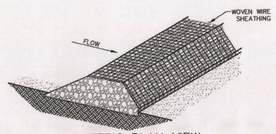
Date: Feb 24, 2016, 8:12am User ID: SVu
File: P:\AutoZone\New Braunfels Store #3679\Design\Drainage\WPAP\150277.00_WPAP_ EC.dwg



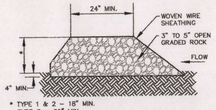
STABILIZED CONSTRUCTION ENTRANCE\EXIT NOTES:

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

(1) STABILIZED CONSTRUCTION ENTRANCE \ EXIT
N.T.S.



ISOMETRIC PLAN VIEW



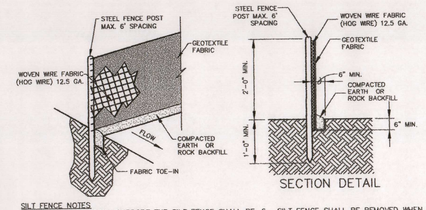
* TYPE 1 & 2 – 18" MIN.
TYPE 3 – 36" MIN.

SECTION DETAIL

ROCK BERM NOTES:

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN DIAGRAM, TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED ON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

(3) ROCK BERM
N.T.S.

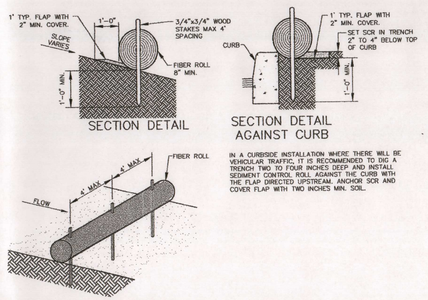


SECTION DETAIL

SILT FENCE NOTES

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.
3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TREATED (e.g. pavement or rock outcrop), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
9. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
10. REPLACE OR REPAIR ANY SECTION CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLE ACCESS POINTS.
11. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

(2) SILT FENCE
N.T.S.



SECTION DETAIL

SECTION DETAIL AGAINST CURB

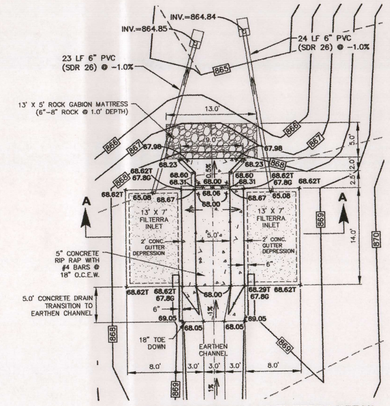
IN A CURBSIDE INSTALLATION WHERE THERE WILL BE VEHICULAR TRAFFIC, IT IS RECOMMENDED TO DIG A TRENCH TWO TO FOUR INCHES DEEP AND INSTALL SEDIMENT CONTROL ROLL AGAINST THE CURB WITH THE FLAP DIRECTED UPSTREAM. ANCHOR SCR AND COVER FLAP WITH TWO INCHES MIN. SOIL.

ISOMETRIC PLAN VIEW

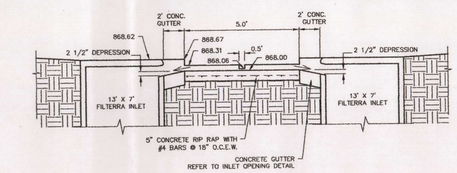
SEDIMENT CONTROL ROLL INSTALLATION NOTES:

1. FOLLOW MANUFACTURER RECOMMENDATIONS.
2. INSTALL FIBER ROLL ALONG A LEVEL CONTOUR.
3. INSTALL A FIBER ROLL NEAR SLOPE WHERE IT TRANSITIONS INTO A STEEPER SLOPE.
4. VERTICAL SPACING MEASURED ALONG THE FACE OF THE SLOPE VARIES BETWEEN 10' AND 20'

(2A) SEDIMENT CONTROL ROLL
N.T.S.

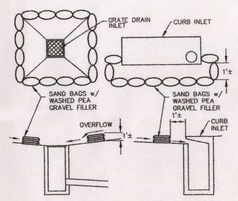


CONCRETE DRAIN AND FILTERRA DETAIL
SCALE: 1" = 10'



CONCRETE DRAIN @ INLET WITH OVERFLOW WEIR

SECTION A-A
NOT TO SCALE



CURB INLET FILTER NOTES:

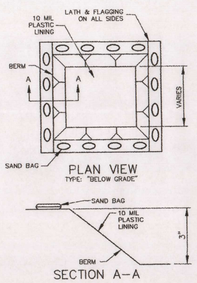
1. GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

GRATE INLET FILTER NOTES:

1. GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

BAGGED GRAVEL INLET FILTER
N.T.S.

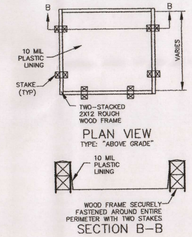
(4)



PLAN VIEW
TYPE: "BELOW GRADE"

SECTION A-A

NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/EXIT AND NOT LOCATED NEAR WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.



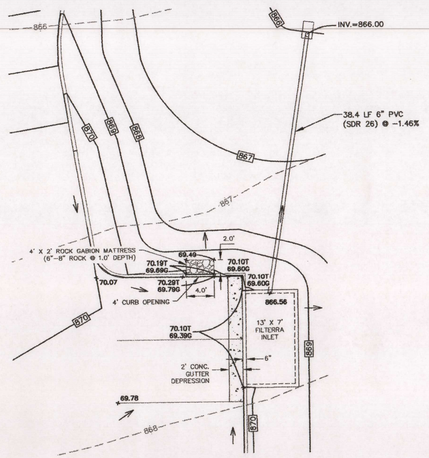
PLAN VIEW
TYPE: "ABOVE GRADE"

SECTION B-B

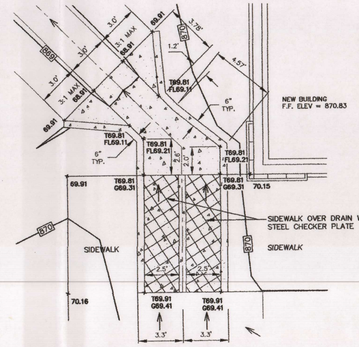
CONCRETE WASH OUT PIT NOTES:

1. DETAIL ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
3. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
4. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
5. DO NOT WASHOUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.

(5) CONCRETE WASH OUT PIT
N.T.S.



FILTERRA INLET DETAIL
SCALE: 1" = 10'



SIDEWALK DRAIN DETAIL
NOTE TO SCALE

GENERAL NOTES:

1. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASHOUT PIT AND CONSTRUCTION EQUIPMENT AND STORAGE AREA ARE TO BE DETERMINED IN THE FIELD. THEY ARE SHOWN ON THIS PLAN FOR ILLUSTRATION PURPOSES ONLY.
2. IF NECESSARY, CONTRACTOR MAY MODIFY STORMWATER CONTROLS TO ACHIEVE THE DESIRED INTENT. ANY CHANGES ARE TO BE NOTED, SIGNED AND DATED BY THE RESPONSIBLE PARTY IN THE TPDES BOOK.
3. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL STORMWATER CONTROLS.
4. REFER TO TPDES BOOK FOR THIS PROJECT FOR MORE INFORMATION/DETAILS.
5. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY QUESTIONS REGARDING THE INTENT OF THIS PLAN.
6. CONTRACTOR IS REQUIRED TO FILE NOI'S (NOTICE OF INTENT) AND NOT'S (NOTICE OF TERMINATION) FOR THIS PROJECT. REFER TO TPDES FOR PROPER POSTING REQUIREMENTS AND DOCUMENTS.
7. A COPY OF THIS PLAN AND THE TPDES BOOK MUST REMAIN AT THE CONSTRUCTION SITE AT ALL TIMES.
8. BARE SOILS SHOULD BE STABILIZED (e.g., HYDRO MULCH), WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.
9. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED FOR TEMPORARY VEGETATIVE COVER. NO AREA SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSUITABLE FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK, OR 1 WEEK AFTER SOIL HAS BEEN DISTURBED, WHICHEVER IS LESS.
10. CONTRACTOR TO PROVIDE A COPY OF THE SIGNED AND CERTIFIED CONSTRUCTION SITE NOTICE TO THE OPERATOR OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEM RECEIVING THE DISCHARGE AT LEAST TWO DAYS PRIOR TO COMMENCING OF CONSTRUCTION ACTIVITY.

OWNER:
AutoZone, Inc.
123 S. FRONT STREET, 3rd FLOOR
MEMPHIS, TENNESSEE 38103

SOUTH

PREPARED FOR: AutoZone STORE DEVELOPMENT
Store No.: 3679 TX-46 NEW BRAUNFELS TEXAS 78132

WPAP SITE PLAN / SWPPP DETAILS

SCALE: 1" = 20'-0"

REVISIONS

1.	01/14/2016 REVISED WITH UPDATED DETAILS
2.	02/19/16 TCEQ COMMENTS
3.	
4.	
5.	
6.	
7.	

ENGINEER: RRD
DRAFTSMAN: AAL
CHECKED BY:
DATE 02/21/16
PROTOTYPE SIZE

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11902 Wurzbach, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9000 • Fax: 210.805.9330
www.coursen-koehler.com • TBPE Firm No. F-10747
CKE JOB NO. - 15002.00

2 of 2

Date: Feb. 24, 2016, 8:03am User ID: SYU
File: P:\AutoZone\New Braunfels Store #3679\Design\Drawings\WPAP\150227.00_WPAP_ EC.dwg

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 15, 2016

Mr. Thomas H. Hornseth, P.E.
Comal County Engineer
195 David Jonas Drive
New Braunfels TX 78132-3710

Re: Edwards Aquifer, Comal County
PROJECT NAME: AutoZone No.: 3679, located in the 21000 block of Hwy 46, New Braunfels, Texas

PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan (WPAP) 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program

Dear Mr. Hornseth:

The referenced application is being forwarded to you pursuant to the Edwards Aquifer Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval. More information regarding this project may be obtained from the TCEQ Central Registry website at http://www.tceq.state.tx.us/permitting/central_registry/.

Please forward your comments to this office by February 15, 2016.

The Texas Commission on Environmental Quality appreciates your assistance in this matter and your compliance efforts to ensure protection of the State's environment. If you or members of your staff have any questions regarding these matters, please feel free to contact the San Antonio Region Office at (210) 490-3096.

Sincerely

Todd Jones

Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

LSO
It's all in the delivery.

Airbill No. ZT335629

Lone Star Overnight
1-800-800-8984
www.lso.com

RECEIVED
JAN 20 2016
COUNTY ENGINEER

SHIP TO:
ENGINEERS OFFICE
COMAL COUNTY ROAD DEPT
195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
2104903096

From:
CYNTHIA VEGA
TCEQ REG 13
14250 JUDSON RD
SAN ANTONIO, TX 78233
2104034003

W SAT **LSO GROUND**
END OF BUSINESS DAY DELIVERY

PRINT DATE: 1/19/2016
QUICKCODE: COMAL CO RD DEP WEIGHT: 2.00LBS
REF 1: ELAINE GROSENHEIDER 1D00V.0000

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.
This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

WATER POLLUTION ABATEMENT PLAN

AutoZone #3679

21000 Block of HW 46
New Braunfels Texas 78132
Comal County

Submitted to:

Texas Commission on Environmental Quality
San Antonio Division

Prepared by:

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES

11802 Warfield, Suite 200
San Antonio, Texas 78216-3213
TBPE # F-10747

December 10, 2015
Job No. 10017.00

Customer Number: **CN 602512097**

Regulated Entity Number: **RN**

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 if not withdrawn the application will be denied and the application fee will be forfeited.

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

Mid-Review Modifications

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

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

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

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

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

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

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

1. Regulated Entity Name: RD AutoZone #3679						**2. Regulated Entity No.:** RD RN 108955014				
3. Customer Name: New Braunfels Investment Joint Venture						**4. Customer No.: 602512097**				
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):**	1.57	
9. Application Fee:	$4,000.00		**10. Permanent BMP(s):**					Two Filtera		
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**							
13. County:	Comal		**14. Watershed:**					Blieders 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.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	X	___	___	___
Region (1 req.)	___	X	___	___	___
County(ies)	___	X	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	X 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 X_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.

Robert R Delgado

Print Name of Customer/Authorized Agent

Signature of Customer/Authorized Agent Date 01/06/16

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):	

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) 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.

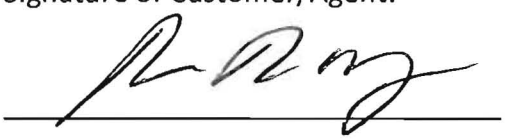
Signature

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 **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Robert R. Delgado, P.E.

Date: 01/04/16

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Auto Zone #3679
2. County: Comal
3. Stream Basin: Blieders Creek
4. Groundwater Conservation District (If applicable): Comal Trinity
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

Contact Person: Edward Badouh, III
Entity: New Braunfels Investment Joint Venture
Mailing Address: 2501 Oakrun Parkway
City, State: New Braunfels, Texas Zip: 78132
Telephone: 830-609-0630 FAX: _____
Email Address: bobadouh@gmail.com

8. Agent/Representative (If any):

Contact Person: Robert R. Delgado, P.E.
Entity: Coursen-Koehler Engineering and Associates
Mailing Address: 11802 Warfield Street, Suite 200
City, State: San Antonio, Texas Zip: 78216
Telephone: 210-853-0307 FAX: 210-855-5530
Email Address: bdelgado@ckcivil.com/projects@ckcivil.com

9. Project Location:

☒ The project site is located inside the city limits of New Braunfels.
☐ 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.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

_____

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

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

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).
☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: TCEQ to give date and staking will be done

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. 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

15. 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/Uncleared)
- ☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(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).

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

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; 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.

Administrative Information

18. The fee for the plan(s) is based on:

- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ 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.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

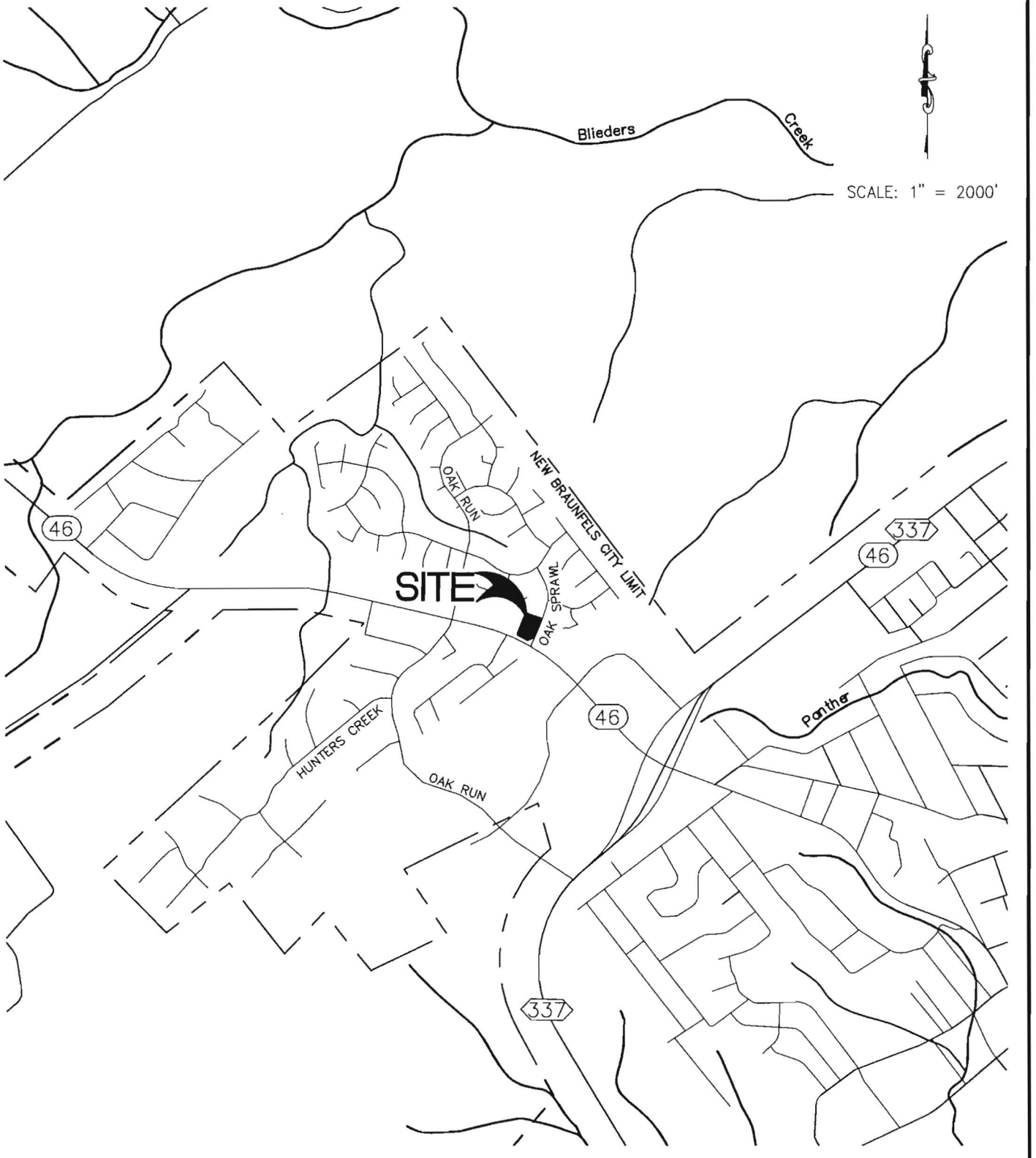
AUTO ZONE #3679
GENERAL INFORMATION FORM

ATTACHMENTS

ATTACHMENT A – ROAD MAP

ATTACHMENT B – USGS QUADRANGLE MAP

ATTACHMENT C – PROJECT DESCRIPTION



COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Warfield, Suite 200 · San Antonio, Texas 78216
Tel: 210.807.9030 · Fax: 210.855.5530
www.coursen-koehler.com · TBPE Firm No. F-10747

AutoZone
STORE NO. 3679

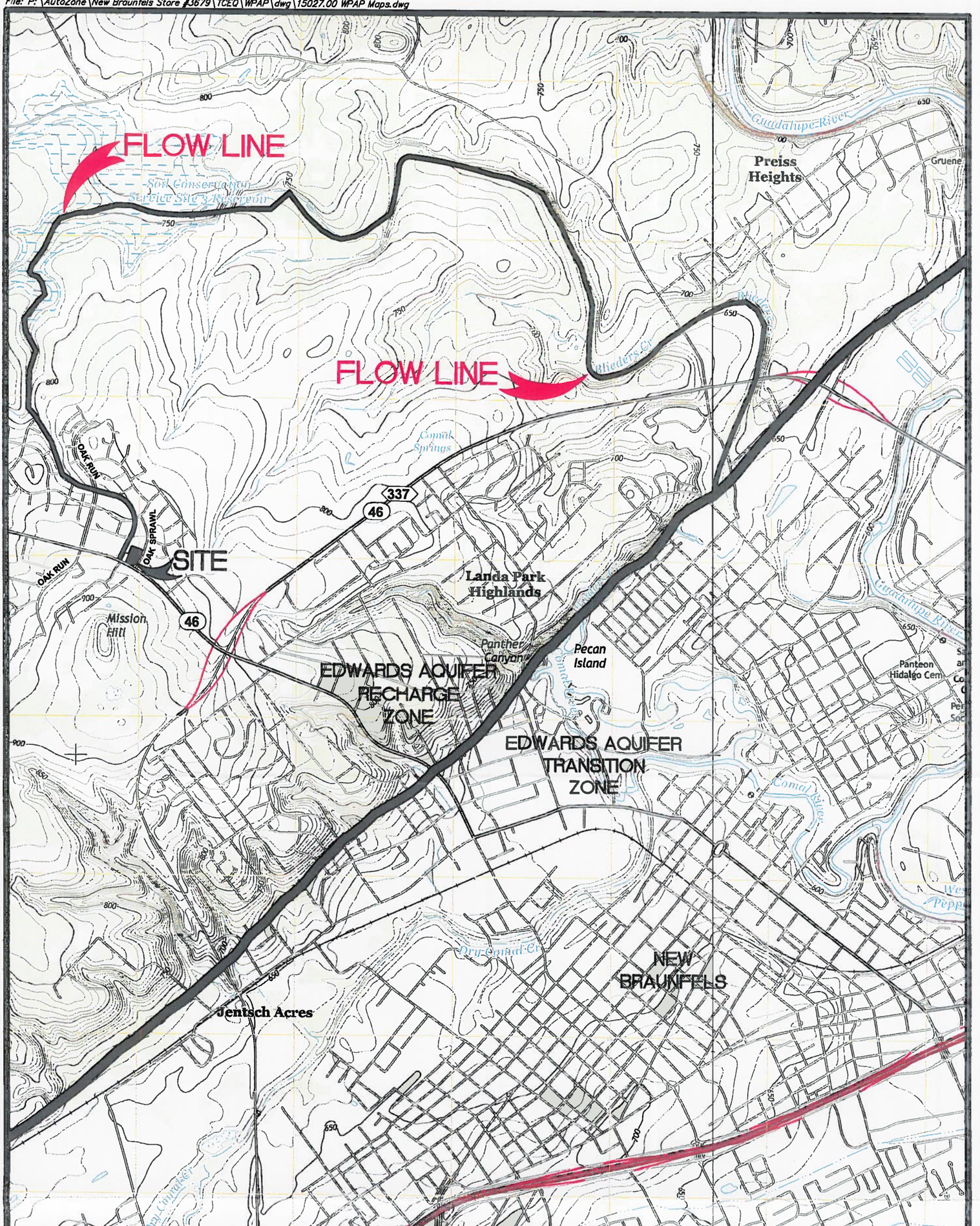
ROAD MAP

JOB NO.:	15027.00
DATE:	DEC 10, 2015
DRAWN:	AAL

ATTACHMENT A

P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 WPAP Maps.dwg

Date: Jan 14, 2016, 3:12pm User ID: TLimon
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 WPAP Maps.dwg



SCALE: 1" = 2000'

AUTOZONE STORE 3679
NEW BRAUNFELS, TEXAS

USGS / EDWARDS RECHARGE ZONE MAP

JOB NO.: 15027.00
DATE: JAN 14, 2016
DRAWN: AAL
REVISIONS:

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Warfield, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.5530
www.coursen-koehler.com • TBPE Firm No. F-10747

General Information Form

ATTACHMENT C

PROJECT DISCRIPTION

The 1.539 acre tract development consists of a AutoZone constructed in one phase. The project is located in Comal County, inside the city limits of New Braunfels, at the northwest corner of HW 46 and Oak Sprawl Road.

The proposed development is a AutoZone with 36 parking spaces and loading area. An average of 34,815 sf of impervious cover is anticipated for this development.

The proposed overall impervious cover for the development is approximately 50%, therefore permanent Best Management Practices (BMP'S) are required. The tract generally slopes to the north to a existing drainage system built with the overall property.

There are two major drainage areas and the runoff is to be conveyed in parking lot then drainage channel and the other is just though parking lot into the 3 Filtera Water Quality Structure BMP's to control the discharge of pollutants after the competition of construction. The tract currently has a driveway that is treated by vegetative filter strip. The three filtera's will over treat so that the loading area will not be treated.

Sanitary sewer service will be provided by an underground sewage collection sewage collection system. The onsite system will tie into an existing sanitary sewer lateral.

Geologic Site Assessment (WPAP)

for Regulated Activities / Development
on the Edwards Aquifer Recharge / Transition Zone

AutoZone #3679
Unit 2C, 1.539 Acres
Texas Highway 46
New Braunfels, Texas

FROST GEOSCIENCES CONTROL # FGS-E15207

October 16, 2015

Prepared exclusively for

Coursen-Koehler Engineering & Associates
11802 Warfield, Suite 200
San Antonio, Texas 78216

Frost GeoSciences

Geotechnical ▪ Construction Materials
Forensics ▪ Environmental

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www.frostgeosciences.com
SDVOSB VBE DIBE SBE
TBPE Firm Registration # F-9227
TBPG Firm Registration # 50040

October 16, 2015

Coursen-Koehler Engineering & Associates
11802 Warfield, Suite 200
San Antonio, Texas 78216

Attn: Mr. Garth Coursen, P.E.

Re: Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
The AutoZone #3679
Unit 2B, 2.986 Acres
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-E15207

Dear Sir:

Attached is a copy of the Geologic Assessment Report completed for the above referenced project site as it relates to 30 TAC §213.5(b)(3), effective June 1, 1999. Our investigation was conducted and this report was prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The results of our investigation, along with any recommendations for Best Management Practices (BMP's), are provided in the following report.

If you have any questions regarding this report, or if Frost GeoSciences, Inc. may be of additional assistance to you on this project, please feel free to call our office. It has been a pleasure to work with you and we wish to thank you for the opportunity to be of service to you on this project. We look forward to being of continued service.

Sincerely,
Frost GeoSciences, Inc.

Steve Frost, C.P.G., P.G
President, Senior Geologist

Distribution: (5) Coursen-Koehler Engineering & Associates

Table of Contents

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Steve Frost, C.P.G., P.G. Telephone: (210) 372-1315

Date: October 16, 2015 Fax: (210) 372-1318

Representing: Frost GeoSciences, Inc., TBPE #F-9227, TBPG # 50040

Signature of Geologist:

Regulated Entity Name: AutoZone # 3679

Project Information

1. Date(s) Geologic Assessment was performed: August 5, 2015
2. Type of Project:
   - ☑ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☑ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☑ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☑ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
RuD	D	0 to 1

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☑ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☑ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☑ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 20 '
   Site Geologic Map Scale: 1" = 20 '
   Site Soils Map Scale (if more than 1 soil type): 1" = 500 '

9. Method of collecting positional data:

   ☑ Global Positioning System (GPS) technology.
   ☑ Other method(s). Please describe method of data collection: 2014 Aerial Photograph

10. ☑ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☑ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☑ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☑ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

    ☑ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

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

Stratigraphic Column

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations, and members modified from Rose (1972); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970). CU, confining unit; AQ, aquifer]

Hydrogeologic subdivision			Group, formation, or member			Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/ permeability type
Upper Cretaceous	Upper confining units		Eagle Ford Group			CU	30 - 50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/ low permeability
			Buda Limestone			CU	40 – 50	Buff, light gray, dense mudstone	Porcelaneous limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability
			Del Rio Clay			CU	40 – 50	Blue-green to yellow-brown clay	Fossiliferous; *Ilymatogyra arietina*	None	None/primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			Karst AQ; not karst CU	2 20	Reddish-brown, gray to light tan marly limestone	Marker fossil; *Waconella wacoensis*	None	Low porosity/low permeability
	II		Edwards Group	Person Formation	Cyclic and marine members, undivided	AQ	80 90	Mudstone to packstone; *miliolid* grainstone; chert	Thin graded cycles; massive beds to relatively thin beds; crossbeds	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III				Leached and collapsed members, undivided	AQ	70 – 90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable
	IV				Regional dense member	CU	20 – 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V			Kainer Formation	Grainstone member	AQ	50 - 60	*Miliolid* grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/ recrystallization reduces permeability
	VI				Kirschberg evaporite member	AQ	50 – 60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric/one of the most permeable
	VII				Dolomitic member	AQ	110 - 130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, *Toucasia* abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane-fabric/water-yielding
	VIII				Basal nodular member	Karst AQ; not karst CU	50 - 60	Shaly, nodular limestone; mudstone and *miliolid* grainstone	Massive, nodular and mottled, *Exogyra texana*	Large lateral caves at surface; a few caves near Ciboto Creek	Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350 – 500	Yellowish tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/relatively impermeable

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: AutoZone # 3679, FGS-E15207

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT²)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						< 40	≥ 40	<1.6	≥1.6	
S-1	N29° 43.185'	W98° 9.778'	MB	30	Kep	30	40	2	-	-	-	-	F	5	35	35			Yes	Hillside

* DATUM 1983 North American Datum (NAD83)

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution Cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow Hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field. My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

Signature Steve M. Frost Date October 16, 2015 Sheet 1 of 1

STATE OF TEXAS — Steve M. Frost — Geology License No. 315 — LICENSED PROFESSIONAL GEOSCIENTIST

LOCATION

The project site consists of 1.539 acres of land located along and north of Texas Highway 46 in New Braunfels, Texas. An overall view of the area is shown on copies of the site plan, a street map, the USGS Topographic Map, the Official Edwards Aquifer Recharge Zone Map, the Flood Insurance Rate Map (FIRM), a USDA Soil Survey Map, a geologic map, a 2014 aerial photograph at a scale of 1"=500', and a 2014 aerial photograph at a scale of 1"=200', Plates 1 through 9 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Mr. Steve Frost, C.P.G., P.G, President and Senior Geologist with Frost GeoSciences, Inc. Mr. Frost is a Licensed Professional Geoscientist in the State of Texas (License # 315) and is a Certified Professional Geologist with the American Institute of Professional Geologist (Certification # 10176).

Frost GeoSciences, Inc. researched the geology of the area in the immediate vicinity of the project site. The research included, but was not limited to a review of the Geologic Atlas of Texas, San Antonio Sheet, FIRM maps, Edwards Aquifer Recharge Zone Maps, USGS 7.5 Minute Quadrangle Maps, the Geologic Map of the Bulverde, Texas 30 X 60 Minute Quadrangle, the USGS Water-Resources Investigations Report 94-4117 and the USDA Soil Survey of Comal & Hays County, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 50 feet or less, depending on vegetation thickness, was used to inspect the project site. A 2014 aerial photograph, in conjunction with a hand held Garmin 72H Global Positioning System with an Estimated Potential Error ranging from 8 to 10 feet, was used to navigate around the property and identify the locations of potential recharge features, as recommended in the "Instructions to Geologists", TCEQ-

0585-Instructions (Rev. 10-1-04). The locations of any potential recharge features noted in the field were identified with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map in Appendix C of this report. The Site Geologic Map indicating the limits of the project site is included in Appendix C. A copy of a 2014 aerial photograph at an approximate scale of 1"=200', indicating the locations of the potential recharge features, is included on Plate 9 in Appendix A. The Geologic Assessment Form (TCEQ-0585, Revised 10-01-10), Stratigraphic Column and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included on pages 1-5 of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988), the elevation of the project site is approximately 870 feet. This elevation is calculated above mean sea level (AMSL). The surface runoff from the project site flows to the west and northwest into an unnamed tributary of Blieders Creek. State Highway 46 is located immediately south of the project site. Oak Sprawl is located immediately east of the project site. A copy of the above referenced USGS 7.5 Minute Quadrangle Map , indicating the location of the project site, is included in this report on Plate 3 in Appendix A.

Recharge / Transition Zone

According to Official Edwards Aquifer Recharge Zone Map, New Braunfels West, Texas Sheet (2014), the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of Official Edwards Aquifer Recharge Zone Map, indicating the location of the project site, is included on Plate 4 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Comal County, Texas, Community Panel Number 48091C0435F (Revised 9/02/09) was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned panel indicates that no portion of the project site is located within the 100 year floodplain. The project site is located within Zone X. According to the panel legend, Zone X represents areas determined to be outside the 0.2% annual chance floodplain. A copy of the Comal County, Texas, FIRM map, indicating the location of the project site, is included in this report on Plate 5 in Appendix A.

Soils

According to the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Comal & Hays County, Texas (1982), the project site is located on the Rumple-Comfort Association (RUD). A copy of the 1973 aerial photograph (approximate scale: 1"=500') from the USDA Soil Survey of Comal & Hays County, Texas indicating the location of the project site and the soil types is included on Plate 9 in Appendix A.

The Rumple-Comfort Association (RuD) consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. The surface layer of the Rumple Soil is dark reddish brown very cherty clay loam about 10 inches thick. Rounded chert and limestone cobbles and gravel cover about 20 percent of the surface. The subsoil to a depth of 14 inches is dark reddish-brown very cherty clay, and to a depth of 28 inches it is dark reddish-brown extremely stony clay. The underlying material is indurated fractured limestone. The Comfort Soil is dark brown, neutral, extremely stony clay about 7 inches thick. The subsoil to a depth of 12 inches is dark reddish-brown, mildly alkaline, extremely stony clay. The underlying material is indurated fractured limestone. The soil is noncalcareous throughout. The soils in this association are well drained. Surface runoff is medium, but varies due to the occurrence of caves, fracture zones, and sinks. Permeability is moderately slow. Water erosion is a moderate hazard.

Narrative Description of the Site Geology

The project site exists as undeveloped land. The site was mowed and supported only minor amounts of vegetative cover with a thick stand of cut native grasses with sparse live oaks. No areas of natural rock outcrops were noted during the on-site inspection. The site appears to support a thick soil cover. The variations in the vegetative cover across the project site are visible in the 2014 aerial photographs on Plates 8 and 9 in Appendix A and in the site visit photographs included in Appendix B. One PRF was identified during our site inspection.

S-1 consists of a manmade feature in bedrock (MB) located in the northwestern portion of the project site. This feature is a storm drain collector consisting of an area of internal drainage approximately 30 feet wide and 40 feet long. The feature is approximately 2 feet deep and empties into a storm drain pipe. The feature is lined with course boulder rubble to prevent erosion into the storm drain collector. This feature is not considered sensitive by FGS. This feature scores a 35 on the feature assessment table on page 5.

According to the USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988), the elevation of the project site is approximately 870 feet. This elevation is calculated above mean sea level (AMSL). According to topographic data obtained from Coursen-Koehler Engineering & Associates, Inc. the elevations on the project site range from 864 near the northwestern property corner to 874 feet near the southeastern property corner. A copy of the site plan, indicating the boundary of the project site and the elevations, is included on Plate 1 in Appendix A and on the Site Geologic Map in Appendix C of this report.

According to the WRI 94-4117 Geologic Map of Comal County, Texas, and the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the project site is covered by the Cyclic and Marine Member of the Cretaceous Edwards Person Limestone.

The Cyclic and Marine Member of the Cretaceous Edwards Person Limestone consists of mudstone to packstone and miliolid grainstone with chert. The member is characterized by massive beds of limestone to relatively thin beds of limestone with some

crossbedding. The Cyclic and Marine Member forms a few caves some that are laterally extensive. Overall thickness ranges from 80 to 90 feet thick.

A copy of the WRI 94-4117 Geologic Map, indicating the location of the project site, is included on Plate 6a in Appendix A. A copy of the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, indicating the location of the project site, is included on Plate 6b in Appendix A.

BEST MANAGEMENT PRACTICE (BMP)

Based on a visual inspection of the ground surface the overall potential for fluid flow from the project site into the Edwards Aquifer appears to be low. The potential always exists to encounter subsurface features that lack a surface expression. Frost GeoSciences, Inc. recommends that we be included in the pre-construction meeting to inform construction personnel of the potential to encounter subsurface karst features during excavating activities. Construction personnel should also be informed of the proper protocol to follow in the event that a solution cavity and/or cave is encountered during the excavation and development of the property.

DISCLAIMER

This report has been prepared in general accordance with the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04) by a Licensed Texas Professional Geoscientist. All areas of the project site were carefully inspected for features that could contribute to the recharge of the Edwards Aquifer, however, this survey cannot preclude the presence of subsurface karst features that lack surface expression. This report is not intended to be a definitive investigation of all possible geologic or karst features at this site. All conclusions, opinions and recommendations for Best Management Practices (BMP's) in this report are based on information obtained while researching the project and on the site conditions at the time of our field investigation.

This report has been prepared for and may be relied upon by Coursen-Koehler Engineering

& Associates. This report is based on available known records, a visual inspection of the project site and the work generally accepted for a Geologic Assessment TAC §213.5(b)(3), effective June 1, 1999.

REFERENCES

1) USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988).

2) Official Edwards Aquifer Recharge Zone Map, New Braunfels West, Texas Sheet (2014).

3) Small T.A. and Hanson J.A., 1994, Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Comal County, Texas. U.S. Geological Survey Water Resources Investigations 94-4117.

4) Collins, Edward, W., 2000, Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle.

5) Federal Emergency Management Agency (FEMA), Bexar County, Texas and Incorporated Areas, Flood Insurance Rate Map (FIRM), Panel 48091C0435F (9/02/09) FEMA, Washington D.C.

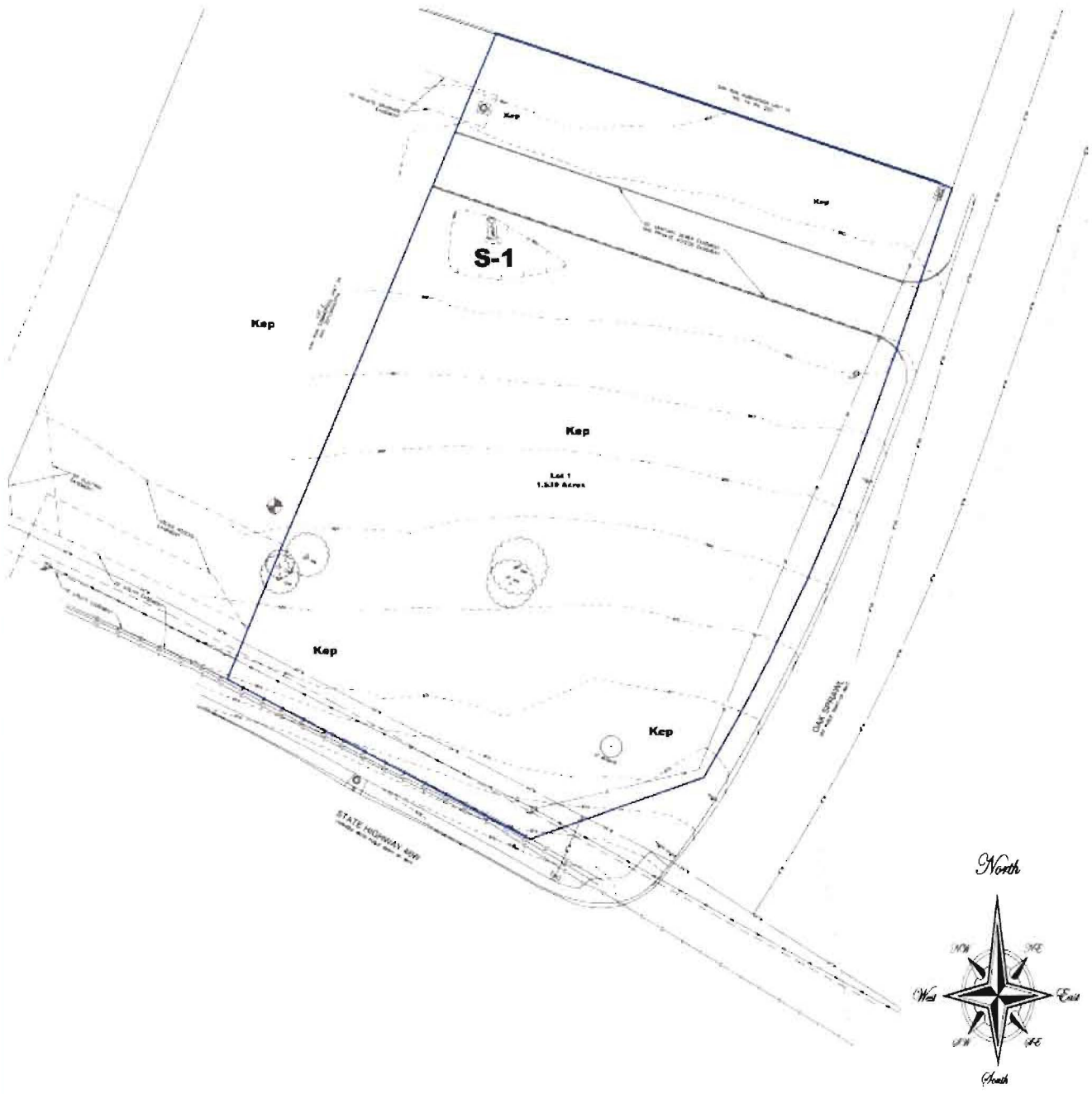
7) USDA Soil Conservation Service, Soil Survey of Comal & Hays Counties, Texas (1982).

8) TCEQ-0585-Instructions (Rev. 10-1-04). "Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone".

Appendix A

Site Location Plates

Frost GeoSciences



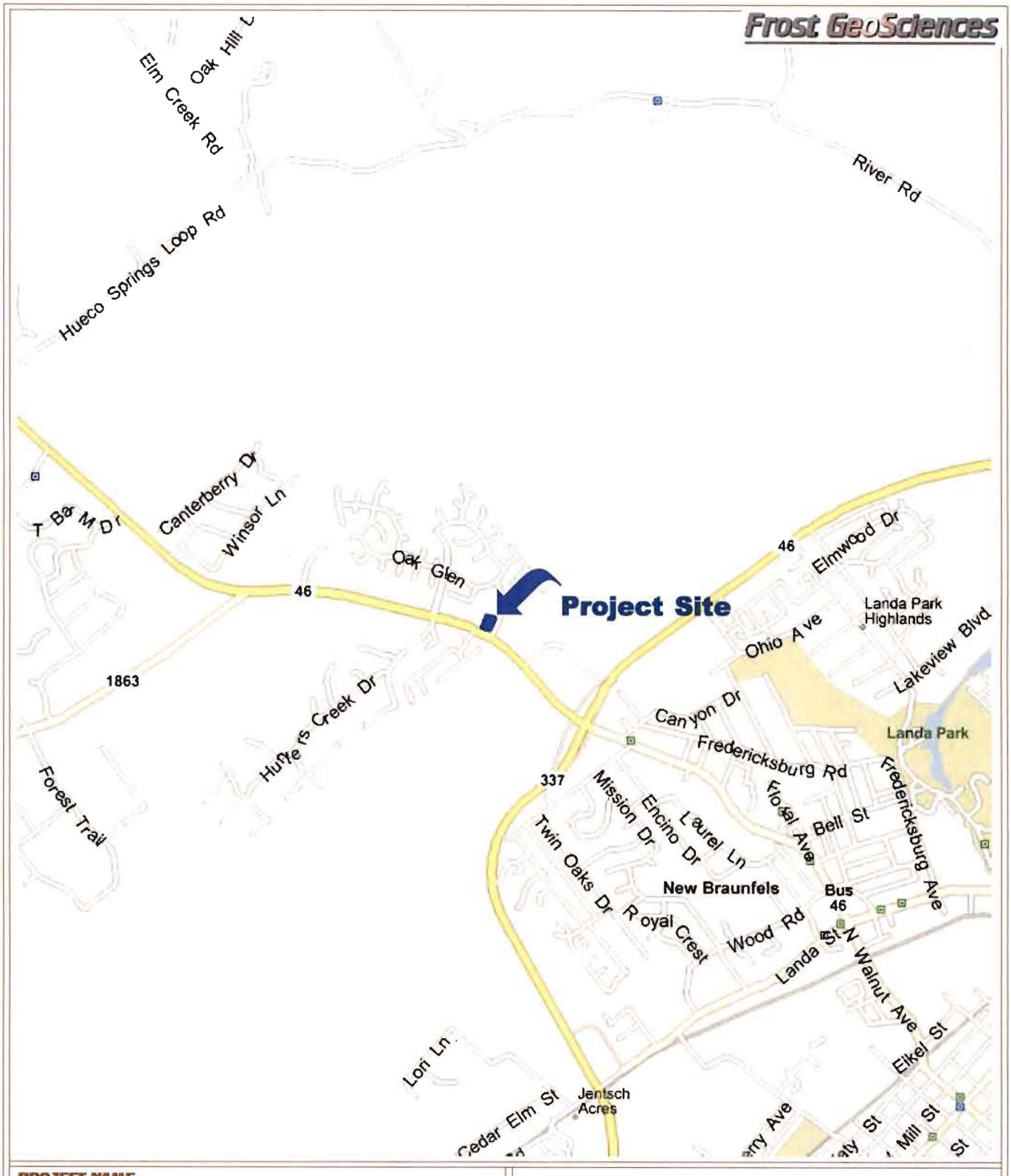
PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
AutoZone # 3679
New Braunfels, Texas

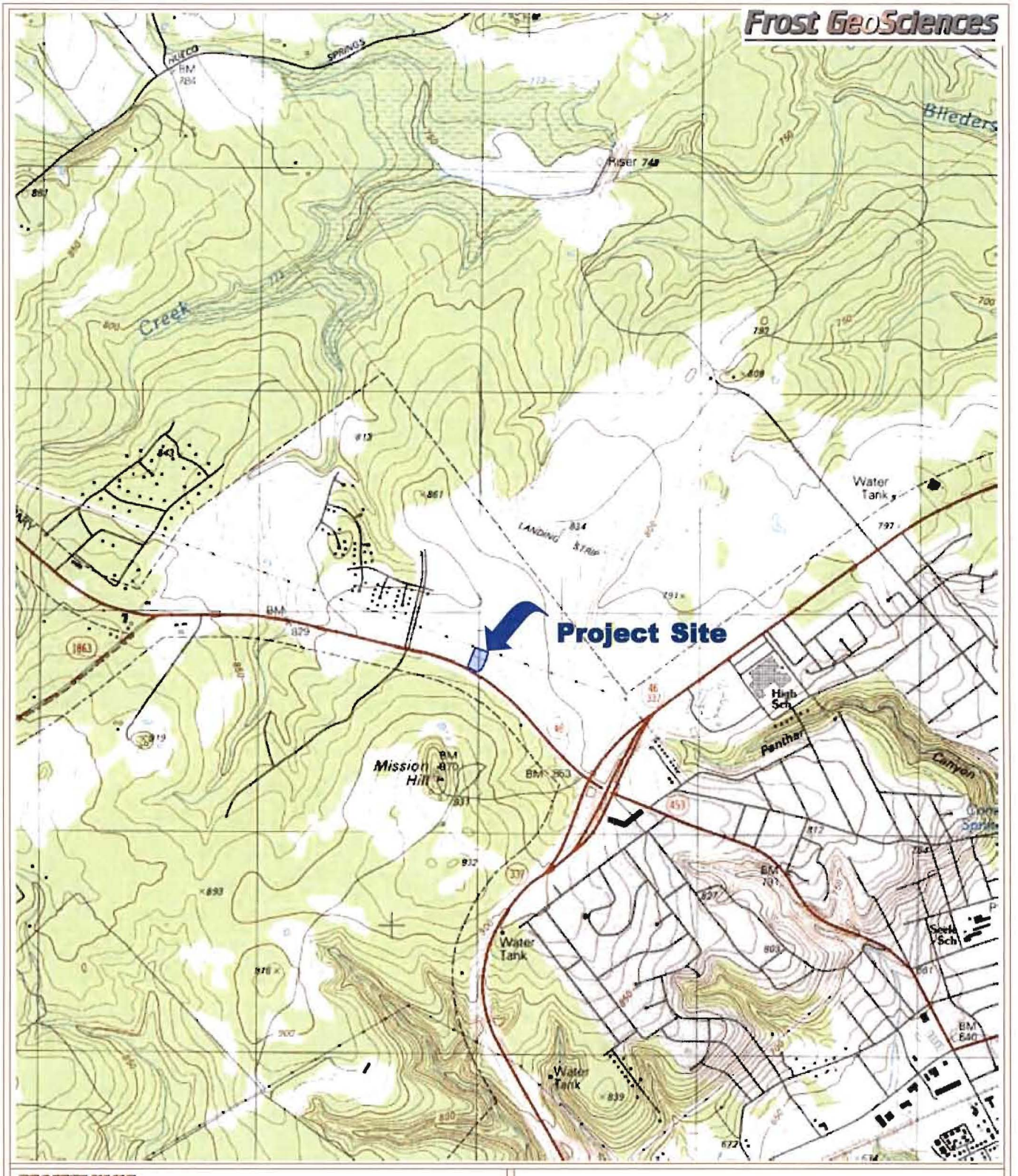
Site Plan

PROJECT NO.:	DATE:
FGS-E15207	October 16, 2015

Frost GeoSciences



PROJECT NAME:	Street Map	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone AutoZone # 3679 New Braunfels, Texas	PROJECT NO.: FGS-E15207	DATE: October 16, 2015

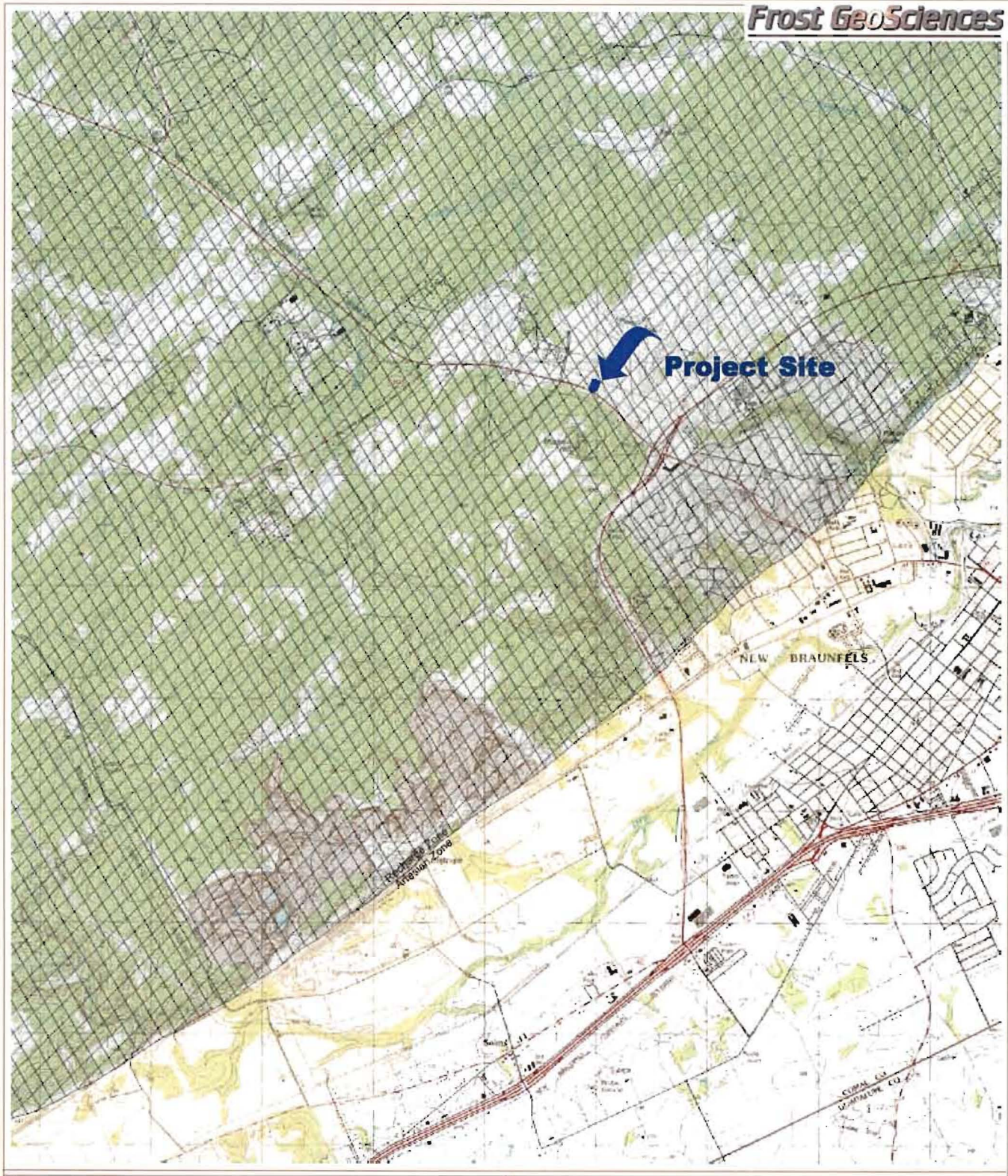


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
AutoZone # 3679
New Braunfels, Texas

U.S.G.S. 7.5 Minute Quadrangle Map
New Braunfels West, Texas Sheet (1988)

PROJECT NO.:	DATE:
FGS-E15207	October 16, 2015

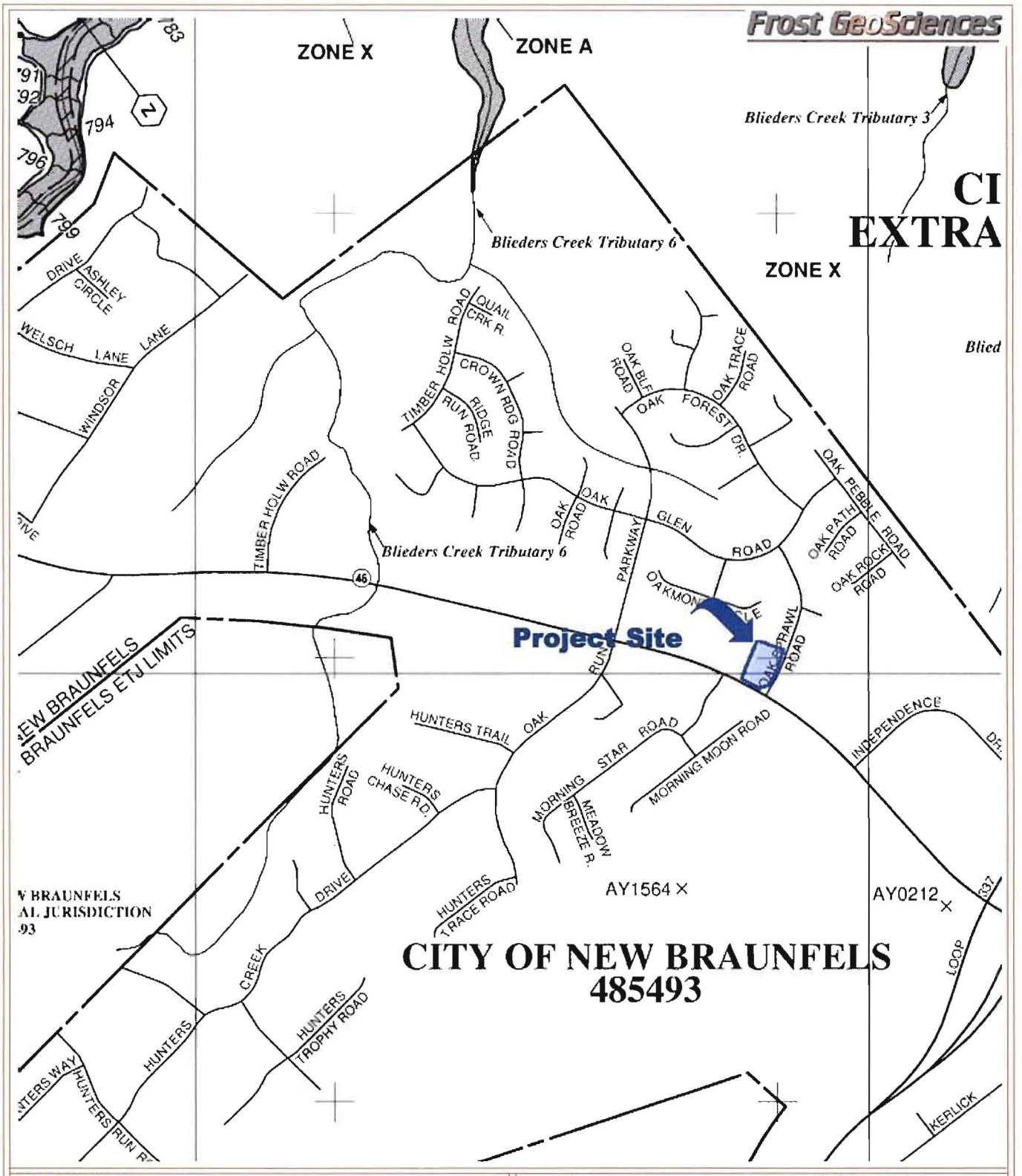
Frost GeoSciences



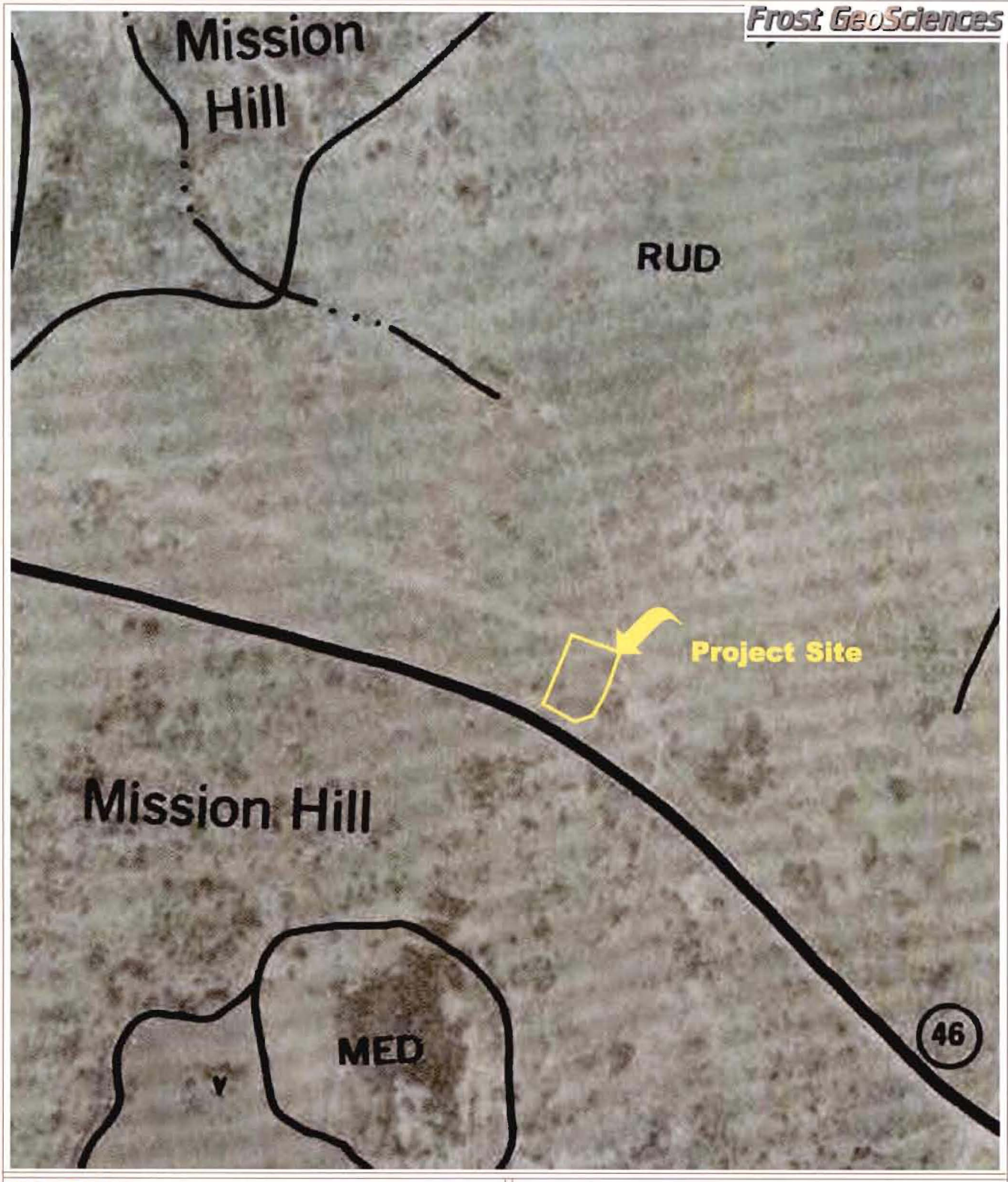
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
AutoZone # 3679
New Braunfels, Texas

Official Edwards Aquifer
Recharge Zone Map
New Braunfels West, Texas Sheet (2014)

PROJECT NO.:	DATE:
FGS-E15207	October 16, 2015



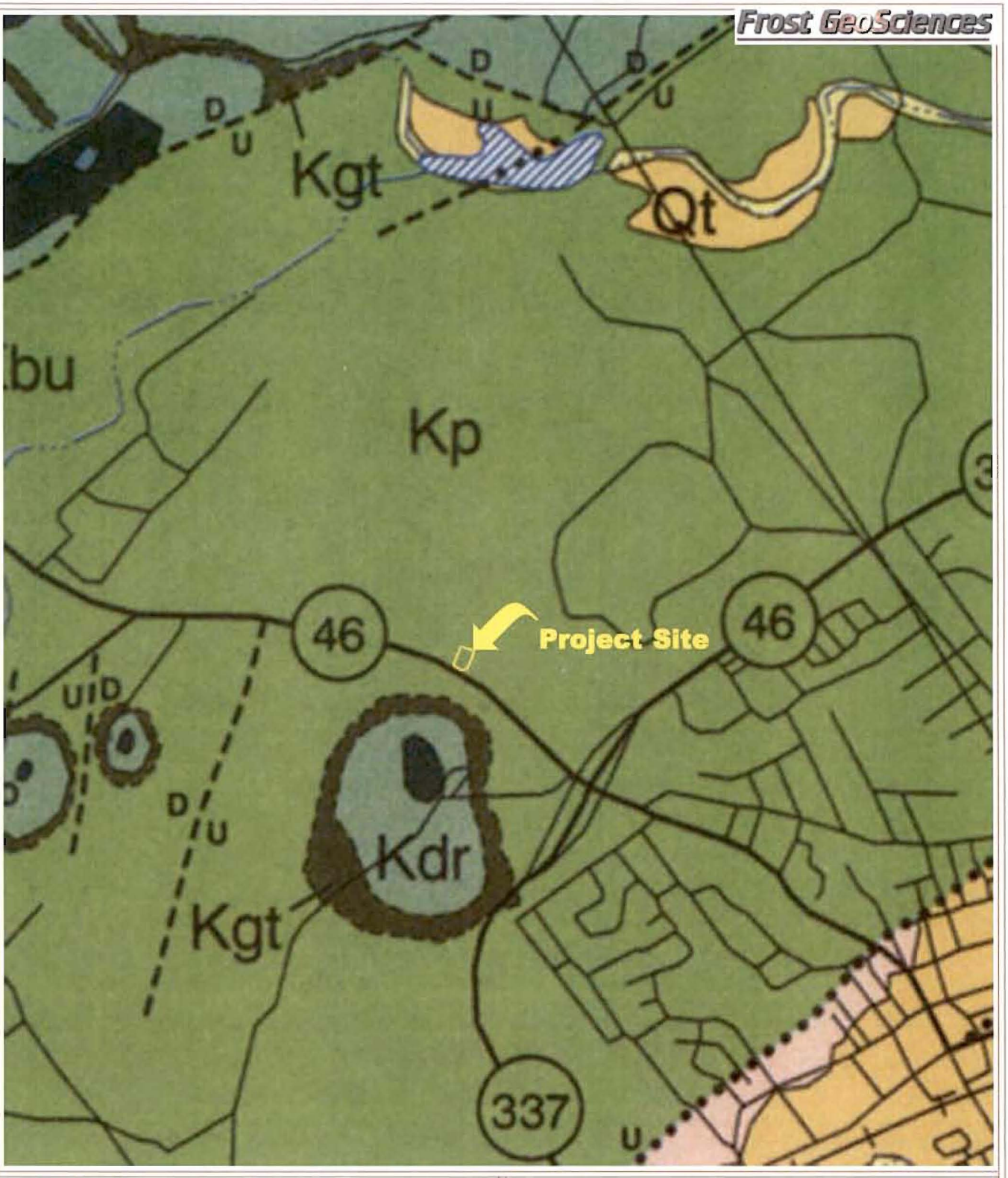
PROJECT NAME:	Flood Insurance Rate Map (FIRM)
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone AutoZone # 3679 New Braunfels, Texas	Community Panel # 48091C0435F (Revised 9/02/09)
	PROJECT NO.: FGS-E15207 / DATE: October 16, 2015



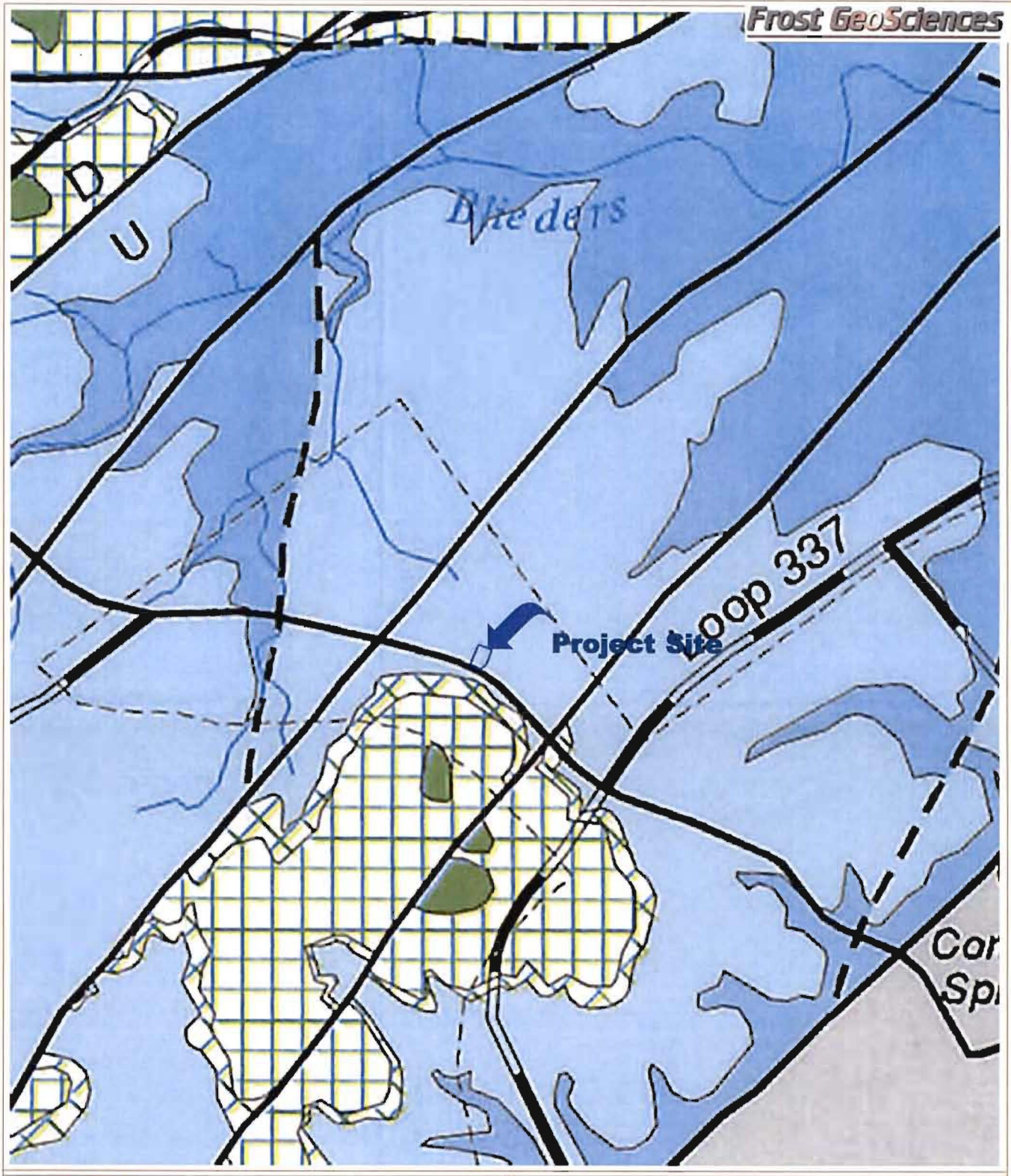
PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
AutoZone # 3679
New Braunfels, Texas

1973 Aerial Photograph
Soil Survey of Comal & Hays County, Texas
United States Department of Agriculture

PROJECT NO.:	DATE:
FGS-E15207	October 16, 2015



PROJECT NAME:	Bureau of Economic Geology Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone AutoZone # 3679 New Braunfels, Texas	PROJECT NO.: FGS-E15207	DATE: October 16, 2015



PROJECT NAME:	United States Geologic Survey Water Resources Investigations #94-4117 Geologic Map of Comal County, Texas (1994)	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone AutoZone # 3679 New Braunfels, Texas	PROJECT NO.: FGS-E15207	DATE: October 16, 2015

PROJECT NAME:	2014 Aerial Photograph National Agricultural Imagery Program	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone AutoZone # 3679 New Braunfels, Texas	PROJECT NO.: FGS-E15207	DATE: October 16, 2015

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
AutoZone # 3679
New Braunfels, Texas

2014 Aerial Photograph with PRF's
National Agricultural Imagery Program

PROJECT NO.:	DATE:
FGS-E15207	October 16, 2015

Appendix B

Site Inspection Photographs

View to the east, of the project site along the southern property line.

View to the west, of the project site along the southern property line.

View to the north, of the project site along the western property line.

View to the northwest, of the project site from the southeastern property corner.

View to the north, of the project site along the eastern property line.

View to the south, of the project site along the eastern property line.

View to the southwest, of the project site from the northeastern property corner.

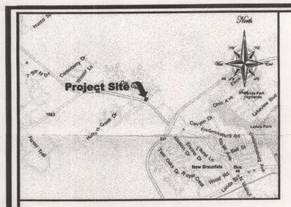
View to the west, of the project site along the northern property line.

View to the southeast, of the project site from the northwestern property corner.

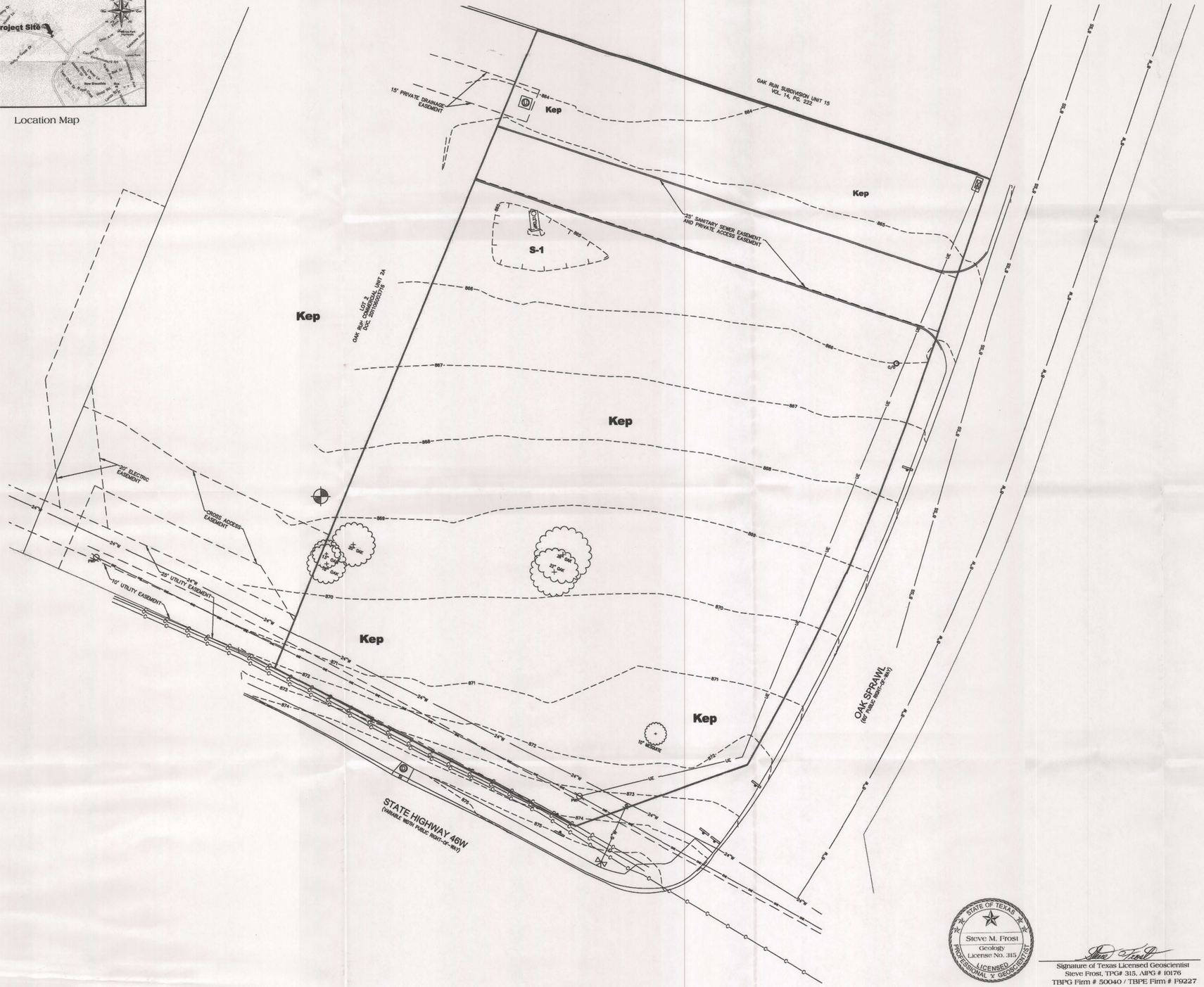
View of Potential Recharge Feature # S-1.

Appendix C

Site Geologic Map



Location Map



Frost GeoSciences
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Environmental & Geologic Consulting
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JAN 20 2016
COUNTY ENGINEER

Site Geologic Map

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
for
AutoZone # 3679
Texas Highway 46 - 1.539 Acres
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-E15207

Legend

- Fill - Fill Material
- Qal - Alluvium
- Kau - Austin Chalk
- Kef - Eagle Ford Shale
- Kbu - Buda Limestone
- Kdr - Del Rio Clay
- Kgt - Georgetown Limestone
- Kep - Edwards Person Limestone
- Kek - Edwards Kainer Limestone
- Kgr - Glen Rose Formation

- S-# - Potential Recharge Feature (PRF)
- Formation Contact

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Comal County, Texas: Panel # 48091C0435F, Revised 9/02/09

Fault Information Obtained From:
Bureau of Economic Geology, Geologic Atlas of Texas, San Antonio Sheet (1983)
U.S. Geological Survey, Water Resources Investigations Report 94-4117 (1994)
Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)

North
NW NE West East SW SE South

Graphic Scale
20 0 10 20 40
(In Feet)

1 inch = 20 feet
Representative Fraction 1:240

Contour Interval - 1 foot

STATE OF TEXAS
Steve M. Frost
Geology
License No. 315
LICENSED PROFESSIONAL GEOSCIENTIST

Signature of Texas Licensed Geoscientist
Steve Frost, TPG# 315, AIPG # 10176
TBPG Firm # 50040 / TBPE Firm # F9227

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), 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 **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Robert R. Delgado, P.E.

Date: 01/06/16

Signature of Customer/Agent:

Regulated Entity Name: Auto Zone #3679

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property):1.539

3. Estimated projected population:10

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	7,425	÷ 43,560 =	0.17
Parking	20,930	÷ 43,560 =	0.48
Other paved surfaces	8130	÷ 43,560 =	0.19
Total Impervious Cover	34,815	÷ 43,560 =	0.84

Total Impervious Cover 0.84 ÷ **Total Acreage** 1.6 **X 100 =** 53**% Impervious Cover**

5. ☒ **Attachment A - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

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

For Road Projects Only

Complete questions 7 - 12 if this application is exclusively for a road project.

7. 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.

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

9. Length of Right of Way (R.O.W.): _____ feet.

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

10. 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.

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

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

12. ☐ 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

13. ☒ **Attachment B - 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 the 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

14. The character and volume of wastewater is shown below:

100 % Domestic	240 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 240	

15. Wastewater will be disposed of by:

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

☐ **Attachment C - 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):

☒ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

☐ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

☒ The SCS was previously submitted on_____.

☐ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Gruene Wastewater Treatment Facility (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☐ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

17. ☒ The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 20'.

18. 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): _____

19. ☒ 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, open space, etc. are shown on the plan.

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

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

☒ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

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

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

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

26. ☐ Surface waters (including wetlands).

☐ N/A

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

☒ There will be no discharges to surface water or sensitive features.

28. ☐ Legal boundaries of the site are shown.

Administrative Information

29. ☒ 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.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENTS

ATTACHMENT A – FACTORS AFFECTING WATER QUALITY

ATTACHMENT B – VOLUME & CHARACTER OF STORM WATER

ATTACHMENT C – SUITABILITY LETTER FROM AUTHORIZED AGENT

ATTACHMENT D – EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

ATTACHMENT E – SITE PLAN

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT A

FACTORS AFFECTING WATER QUALITY

The major factors which may affect water quality during construction are:

- Sediment from disturbed soil;
- Sediment from stock piled material;
- Mechanical fluids from construction equipment;
- Trash from workers and material packaging;
- Rinse water from concrete trucks.

The major factors which may affect water quality once development is complete are:

- Automotive fluids;
- Landscape products including fertilizers and herbicides;
- Pest control products.

This is to be dealt with by installing the appropriate temporary/permanent best management practices including silt fencing, curb inlet protection, concrete washout pits, rock berms, permanent sediment basin, trash cans and construction dumpsters. If fuel or a hazardous substance spill occurs, the contaminated soil will be removed and placed in an impervious container to be disposed offsite at an approved disposal location. The placement of excavated materials will have appropriately sized erosion and sedimentation controls placed down gradient and trench spoils will be placed on the up gradient side of the trench.

In addition to the above measures, the following recommended measures from the Edwards Aquifer Technical Guidance Manual (RG-348, 2005), Chapters; *1.4.16, Significant/Hazardous Spills, Section 2.3 Pesticide and Fertilizer Management, 2.4 Housekeeping Practices, and 2.5 Landscaping and Vegetative Practices* should also be followed.

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT B

VOLUME AND CHARACTER OF STORM WATER

Storm water runoff generated from the proposed site will come from roof tops, driveways and landscaped areas. Runoff will be treated by 3 Filterra Water Quality Structure, and an existing natural vegetative filter strip down gradient of existing driveway. No unusual contaminants other than those typical with commercial development are expected.

The storm water runoff for the preconstruction conditions of the approximate 1.5 acres of Oak Run Commercial Unit-2C would be with native vegetation consisting of grasses, brush and trees and an existing natural vegetative filter strip. The site consists of 2 drainage/catchment areas, A and B on the Drainage Master included in ATTACHMENT G in the TEMPORARY STORMWATER SECTION. A small amount of storm water from up gradient drainage areas will be accepted by the property within catchment areas A and B.

The characteristic of the storm water generated onsite will be influenced by site features that generate non-point sources of pollution. Non-point sources will include: oil and grease from the pavement areas, suspended solids, sedimentation, nutrients for landscape care and maintenance along with the possible use of pesticides, and herbicides. The storm water runoff would discharge into a existing detention pond.

The rational Method (Q=CIA) was used to compute the flow volumes generated by each drainage area. The following methods or values were applied:

Time of concentration (Tc) → SCS TR-55 Method (sheet flow, shallow concentrated flow, and open channel flow).

Intensity (I) → Analysis of areas and flows generated involved the use of the City of New Braunfels rainfall intensity curves from the Drainage and Erosion Control Manual.

Runoff Coefficient (C) → Runoff coefficients were taken from the City of New Braunfels runoff coefficients from the Drainage and Erosion Control Manual.

A summary of the pre-development and ultimate development hydrology is shown on the following page.

HYDROLOGIC CALCULATIONS SUMMARY

DRAINAGE CALCULATIONS - EXISTING CONDITIONS												
Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr)				Discharge, Q (cfs)			
					2-Yr	10-Yr	25-Yr	100-Yr	2-Yr (K=1.0)	10-Yr (K=1.0)	25-Yr (K=1.1)	100-Yr (K=1.25)
1	EX1	0.38	0.47	18.8	3.69	5.650	6.811	8.924	0.7	1.0	1.3	2.0
2	EX2	1.33	0.38	18.1	3.76	5.760	6.940	9.095	1.9	2.9	3.9	5.7
A	EX1 + EX2	1.71	0.40	18.8	3.69	5.650	6.811	8.924	2.5	3.9	5.1	7.6

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.

Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-2.

Rainfall Intensities (I) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 4-1.

DRAINAGE CALCULATIONS - PROPOSED (ULTIMATE) CONDITIONS												
Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr)				Discharge, Q (cfs)			
					2-Yr	10-Yr	25-Yr	100-Yr	2-Yr (K=1.0)	10-Yr (K=1.0)	25-Yr (K=1.1)	100-Yr (K=1.25)
1	A1	0.53	0.65	10.0	4.92	7.557	9.068	11.941	1.7	2.6	3.4	5.1
2	A2	0.24	0.43	10.0	4.92	7.557	9.068	11.941	0.5	0.8	1.0	1.5
3	A3	0.32	0.72	10.0	4.92	7.557	9.068	11.941	1.1	1.7	2.3	3.4
4	A4	0.22	0.38	10.0	4.92	7.557	9.068	11.941	0.4	0.6	0.8	1.2
5	A5	0.42	0.55	10.0	4.92	7.557	9.068	11.941	1.1	1.7	2.3	3.4
A	A1 - A5	1.71	0.57	10.0	4.92	7.557	9.068	11.941	4.8	7.4	9.7	14.5

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.

Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-7.

12.8

Values Appied to C				
Description	2-Yr	10-Yr	25-Yr	100-Yr
Kn	**1.00**	**1.00**	**1.10**	**1.25**

RUNOFF COEFFICIENTS (C)

DRAINAGE CALCULATIONS - EXISTING CONDITIONS

STUDY POINT	TOTAL ACRES	BUSINESS OR COMMERCIAL, EXISTING PVM'T./BUILDINGS				CLOSELY BUILT RESIDENTIAL/SCHOOLS				UNDEVELOPED ULTIMATE USE UNKNOWN				LARGE LOT RESIDENTIAL				AVERAGE RESIDENTIAL				UNDEVELOPED CULTIVATED (<50% COVER)				COMPOSITE RUNOFF COEFFICIENT
		slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				
		< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 2	2-7	>7		
		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
		0.80	0.80	0.80	0.80	0.67	0.67	0.67	0.67	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.60	0.60	0.60	0.60	0.30	0.38	0.42		
1	0.38		0.13																			0.25				0.47
2	1.33																						1.33			0.38
A	1.71		0.13																			0.25	1.33			0.40

Reference Drainage and Erosion Control Design Manual Table 5-2 for Runoff Coefficients (C)

DRAINAGE CALCULATIONS - EXISTING/PROPOSED (ULTIMATE) CONDITIONS

STUDY POINT	TOTAL ACRES	BUSINESS OR COMMERCIAL, EXISTING PVM'T./BUILDINGS				CLOSELY BUILT RESIDENTIAL/SCHOOLS				UNDEVELOPED ULTIMATE USE UNKNOWN				LARGE LOT RESIDENTIAL				AVERAGE RESIDENTIAL				UNDEVELOPED CULTIVATED (<50% COVER)				COMPOSITE RUNOFF COEFFICIENT
		slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				slope (%)				
		< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 1	1-3	3-5	> 5	< 2	2-7	>7		
		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
		0.80	0.80	0.80	0.80	0.67	0.67	0.67	0.67	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.53	0.60	0.60	0.60	0.60	0.30	0.38	0.42		
1	0.53		0.34																				0.19			0.65
2	0.24		0.03																				0.21			0.43
3	0.32		0.26																				0.06			0.72
4	0.22																						0.22			0.38
5	0.42		0.17																				0.25			0.55
A	1.71		0.79																				0.92			0.57

Reference Drainage and Erosion Control Design Manual Table 5-7 for Runoff Coefficients (C)

TIME OF CONCENTRATIONS (Tc)

DRAINAGE CALCULATIONS - EXISTING CONDITIONS

STUDY POINT	Overland				Shallow Concentrated (Unpaved)				Shallow Concentrated (Paved)				Channel			Tc (min)
	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Velocity (fps)	travel time (min)	
1	200	0.20	0.040	15.9	120	0.20	0.020	2.8	0	0.02	0.005	0.0	0	5.000	0.0	**18.8**
2	50	0.20	0.010	9.1	190	0.20	0.005	9.0	0	0.02	0.005	0.0	0	5.000	0.0	**18.1**
A	200	0.20	0.040	15.9	120	0.20	0.020	2.8	0	0.02	0.005	0.0	0	5.000	0.0	**18.8**

* *from "Design" by Elwyn E. Seelye*

** *Tr-55, Figure 3-1. - Average Velocities for Estimating Travel Time for Shallow Concentrated Flow*

DRAINAGE CALCULATIONS - EXISTING/PROPOSED (ULTIMATE) CONDITIONS

STUDY POINT	Overland				Shallow Concentrated (Unpaved)				Shallow Concentrated (Paved)				Channel			Tc (min)
	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Manning (n)	slope (ft/ft)	travel time (min)	length (ft)	Velocity (fps)	travel time (min)	
1	65	0.20	0.083	4.8	0	0.30	0.010	0.0	130	0.020	0.010	0.4	110	2.2	0.8	**10.0**
2	100	0.20	0.034	9.8	85	0.02	0.020	0.2	1	0.020	0.005	0.0	0	1.0	0.0	**10.0**
3	65	0.20	0.083	4.8	1	0.20	0.015	0.0	145	0.200	0.010	4.8	0	1.0	0.0	**10.0**
4	95	0.20	0.050	8.0	130	0.20	0.050	1.9	1	0.020	0.010	0.0	1	1.0	0.0	**10.0**
5	65	0.02	0.062	0.9	150	0.20	0.005	7.1	1	0.020	0.010	0.0	0	3.0	0.0	**10.0**
A	100	0.20	0.034	9.8	85	0.02	0.020	0.2	1	0.020	0.005	0.0	0	1.0	0.0	**10.0**

* *from "Design" by Elwyn E. Seelye*

** *Tr-55, Figure 3-1. - Average Velocities for Estimating Travel Time for Shallow Concentrated Flow*

Table 5-1
Values of Antecedent Precipitation Coefficient "K"

Frequency	Value of K
10-year or less	1.0
25-year	1.1
100-year	1.25

Table 5-2
Runoff Coefficients

Area (Developed)	"C"	Area (Undeveloped)	"C"
Grass (Lawns, Parks) Poor<50% cover		Cultivated	
Flat 0-2%	0.37	Flat 0-2%	0.36
Average 2-7%	0.43	Average 2-7%	0.41
Steep, >7%	0.45	Steep, >7%	0.41
Grass (Lawns, Parks) Fair 50%-75% cover		Pasture/Range	
Flat 0-2%	0.30	Flat 0-2%	0.30
Average 2-7%	0.38	Average 2-7%	0.38
Steep, >7%	0.42	Steep, >7%	0.42
Grass (Lawns, Parks) Good>50% cover		Forest/Woodlands	
Flat 0-2%	0.25	Flat 0-2%	0.28
Average 2-7%	0.35	Average 2-7%	0.36
Steep, >7%	0.40	Steep, >7%	0.41
Asphaltic	0.81		
Concrete/Roof	0.83		

Drainage and Erosion Control Manual - Table 4-1, New Braunfels Rainfall Intensity Constants

	FREQUENCY					
MINUTES	2-YEAR	5-YEAR	10-YEAR	25-YEAR	50-YEAR	100-YEAR
1						
2						
3						
4						
5.0	6.139	7.930	9.599	11.509	13.297	15.323
5.1	6.108	7.889	9.545	11.444	13.219	15.231
5.2	6.078	7.849	9.491	11.380	13.142	15.140
5.3	6.048	7.808	9.438	11.316	13.067	15.051
5.4	6.018	7.769	9.387	11.254	12.992	14.963
5.5	5.988	7.730	9.335	11.192	12.919	14.876
5.6	5.959	7.691	9.285	11.132	12.846	14.791
5.7	5.930	7.652	9.235	11.072	12.774	14.706
5.8	5.902	7.615	9.185	11.013	12.704	14.623
5.9	5.874	7.577	9.137	10.954	12.634	14.541
6.0	5.846	7.540	9.088	10.896	12.566	14.461
6.1	5.818	7.504	9.041	10.839	12.498	14.381
6.2	5.791	7.467	8.994	10.783	12.431	14.302
6.3	5.764	7.432	8.948	10.728	12.365	14.225
6.4	5.737	7.396	8.902	10.673	12.300	14.148
6.5	5.710	7.361	8.857	10.619	12.236	14.073
6.6	5.684	7.327	8.812	10.565	12.172	13.998
6.7	5.658	7.292	8.768	10.513	12.110	13.925
6.8	5.632	7.258	8.724	10.460	12.048	13.853
6.9	5.607	7.225	8.681	10.409	11.987	13.781
7.0	5.582	7.192	8.639	10.358	11.927	13.710
7.1	5.557	7.159	8.597	10.308	11.867	13.641
7.2	5.532	7.126	8.555	10.258	11.808	13.572
7.3	5.507	7.094	8.514	10.209	11.750	13.504
7.4	5.483	7.062	8.473	10.160	11.693	13.437
7.5	5.459	7.031	8.433	10.112	11.636	13.370
7.6	5.435	7.000	8.393	10.065	11.580	13.305
7.7	5.411	6.969	8.354	10.018	11.525	13.240
7.8	5.388	6.938	8.315	9.971	11.470	13.176
7.9	5.365	6.908	8.277	9.926	11.416	13.113
8.0	5.342	6.878	8.239	9.880	11.363	13.051
8.1	5.319	6.849	8.201	9.835	11.310	12.989
8.2	5.297	6.819	8.164	9.791	11.258	12.928
8.3	5.274	6.790	8.127	9.747	11.206	12.868
8.4	5.252	6.762	8.091	9.704	11.155	12.808
8.5	5.230	6.733	8.055	9.661	11.105	12.749
8.6	5.208	6.705	8.019	9.618	11.055	12.691
8.7	5.187	6.677	7.984	9.576	11.005	12.634
8.8	5.166	6.649	7.949	9.535	10.957	12.577
8.9	5.144	6.622	7.914	9.494	10.908	12.521
9.0	5.123	6.595	7.880	9.453	10.861	12.465
9.1	5.103	6.568	7.846	9.413	10.813	12.410
9.2	5.082	6.541	7.813	9.373	10.767	12.356
9.3	5.062	6.515	7.780	9.333	10.721	12.302
9.4	5.041	6.489	7.747	9.294	10.675	12.249
9.5	5.021	6.463	7.714	9.256	10.630	12.196
9.6	5.001	6.437	7.682	9.218	10.585	12.144
9.7	4.982	6.412	7.650	9.180	10.541	12.093
9.8	4.962	6.387	7.619	9.142	10.497	12.042
9.9	4.943	6.362	7.588	9.105	10.453	11.991
10.0	4.923	6.337	7.557	9.068	10.410	11.941
10.1	4.904	6.312	7.526	9.032	10.368	11.892
10.2	4.885	6.288	7.496	8.996	10.326	11.843
10.3	4.867	6.264	7.466	8.960	10.284	11.795
10.4	4.848	6.240	7.436	8.925	10.243	11.747
10.5	4.830	6.217	7.407	8.890	10.202	11.699
10.6	4.811	6.193	7.377	8.855	10.162	11.652
10.7	4.793	6.170	7.349	8.821	10.122	11.606
10.8	4.775	6.147	7.320	8.787	10.082	11.560
10.9	4.757	6.124	7.292	8.753	10.043	11.515
11.0	4.740	6.101	7.263	8.720	10.004	11.469
11.1	4.722	6.079	7.236	8.687	9.965	11.425

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT C

SUITABILITY LETTER FROM AUTHORIZED AGENT

Not Applicable - No on-site sewer facility (OSSF/Septic) is proposed for this project.

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT D

EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

No exception to geologic assessment is request. Please see previous section, "Geologic Assessment" Form (TCEQ-0585) for a complete assessment of the site geology.

AUTO ZONE #3679
Water Pollution Abatement Plan Application

ATTACHMENT E

SITE PLAN

A 1"=20' scaled site plan on 24" x 36" sheet is provided in the following pocket.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN
GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL, OR OTHER SENSITIVE FEATURE.

5. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE TEMPORARY STORM WATER SECTION OF THE APPROVED EDWARDS AQUIFER PROTECTION PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS TO WATER QUALITY (E.G., FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).

7. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

8. 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).

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. 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.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD 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:

A. 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;

B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN

AUSTIN REGIONAL OFFICE
2800 S. IH 35, SUITE 100
AUSTIN, TEXAS 78704-5712
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

GENERAL NOTES:
1. THE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST MEET ALL APPLICABLE CRITERIA OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY SET FORTH IN 30 TEXAS ADMINISTRATIVE CODE (TAC) 213.5(B) - WATER POLLUTION ABATEMENT PLAN FOR REGULATED ACTIVITIES UNDERTAKEN ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER.

2. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE REQUIRED DURING CONSTRUCTION. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED. THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSPECTED PERIODICALLY FOR DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES AND FOLLOWING EVERY RAINFALL. DAMAGED OR OBSTRUCTED CONTROLS MUST BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN PROPER OPERATION.

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE OWNER MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE SENSITIVE FEATURE DISCOVERED. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE INFRASTRUCTURE.

4. ANY MODIFICATION TO THE APPROVED WATER POLLUTION ABATEMENT PLAN MUST BE SUBMITTED TO THE APPROPRIATE REGIONAL OFFICE FOR APPROVAL BY THE EXECUTIVE DIRECTOR OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY BEFORE CONSTRUCTION OF THE PROPOSED MODIFICATION MAY COMMENCE.

5. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.

6. CONTRACTOR IS RESPONSIBLE FOR ALL REGULATED AGNECY NOTIFICATIONS. RECORDS AND DOCUMENTATION OF THE SAME MUST BE MADE AVAILABLE UPON REQUEST.

VEGETATIVE FILTER STRIPS:
NATURAL FILTER STRIPS:
1. THE FILTER STRIP SHOULD EXTEND ALONG THE ENTIRE LENGTH OF THE CONTRIBUTING AREA.
2. THE SLOPE SHOULD NOT EXCEED 10%
3. THE MINIMUM DIMENSION (IN THE DIRECTION OF FLOW) SHOULD BE 50 FEET.
4. ALL OF THE FILTER STRIP SHOULD LIE ABOVE THE ELEVATION OF THE 2-YR, 3-HR STORM OF ANY ADJACENT DRAINAGE.
5. THERE IS NO REQUIREMENT FOR VEGETATION DENSITY OR TYPE.

MAINTENANCE:
FILTER STRIPS.
SEASONAL MOWING AND LAWN CARE - IF THE FILTER STRIP IS MADE OF TURF GRASS, IT SHOULD BE MOWED AS NEEDED TO LIMIT VEGETATION HEIGHT TO 18 INCHES, USING A MULCHING MOWER (OR REMOVAL OF CLIPPING). IF NATIVE GRASSES ARE USED, THE FILTER MAY REQUIRE LESS FREQUENT MOWING, BUT A MINIMUM OF TWICE ANNUALLY. GRASS CLIPPING AND BRUSH DEBRIS SHOULD NOT BE DEPOSITED ON VEGETATED FILTER STRIP AREAS. REGULAR MOWING SHOULD ALSO INCLUDE WEED CONTROL PRACTICES, HOWEVER HERBICIDE USE SHOULD BE KEPT TO A MINIMUM. HEALTHY GRASS MAY BE MAINTAINED WITHOUT USING FERTILIZERS BECAUSE RUNOFF USUALLY CONTAINS SUFFICIENT NUTRIENTS. IRRIGATION OF THE SITE MAY ALSO HELP ASSURE A DENSE AND HEALTHY VEGETATIVE COVER. INSPECTION - INSPECTION OF FILTER STRIPS SHOULD BE DONE AT LEAST TWICE ANNUALLY FOR EROSION OR DAMAGE TO VEGETATION; HOWEVER, ADDITIONAL INSPECTIONS AFTER PERIODS OF HEAVY RUNOFF ARE MOST DESIRABLE. THE STRIP SHOULD BE CHECKED FOR UNIFORMITY OF GRASS COVER, DEBRIS AND LITTER, AND AREAS OF SEDIMENT ACCUMULATION. MORE FREQUENT INSPECTIONS OF THE GRASS COVER WILL BE MADE DURING THE FIRST FEW YEARS AFTER ESTABLISHMENT TO DETERMINE IF ANY PROBLEMS ARE DEVELOPING, AND TO PLAN FOR LONG-TERM RESTORATIVE MAINTENANCE NEEDS. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS SHOULD BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CONSTRUCTION OF A LEVEL SPREADER DEVISE MAY BE NECESSARY TO REESTABLISH SHALLOW OVERLAND FLOW.

DEBRIS AND LITTER REMOVAL.
ANY FILTER STRIP OR FILTER STRIP STRUCTURES (I.E. LEVELED SPREADERS) SHOULD BE KEPT FREE OF OBSTRUCTIONS TO REDUCE FLOATABLES FROM BEING FLUSHED DOWNSTREAM, AND FOR AESTHETIC REASONS. THE NEED FOR THIS PRACTICE WILL BE DETERMINED THROUGH PERIODIC INSPECTION, BUT WILL BE PERFORMED NO LESS THAN 4 TIMES PER YEAR.

SEDIMENT REMOVAL.
SEDIMENT REMOVAL IS NOT NORMALLY REQUIRED IN FILTER STRIPS. HOWEVER, SEDIMENT MAY ACCUMULATE ALONG THE UPSTREAM BOUNDARY OF THE STRIP PREVENTING UNIFORM OVERLAND FLOW. EXCESS SEDIMENT SHOULD BE REMOVED BY HAND, WITH FLAT-BOTTOMED SHOVELS, OR LIGHT CONSTRUCTION EQUIPMENT.

GRASS RESEEDING AND MULCHING.
A HEALTHY DENSE GRASS SHOULD BE MAINTAINED ON THE FILTER STRIP. IF AREAS ARE ERODED, THEY SHOULD BE FILLED, COMPACTED AND RESEEDED SO THAT THE FINAL GRADE IS LEVEL. GRASS DAMAGED DURING THE SEDIMENT REMOVAL PROCESS SHOULD BE PROMPTLY REPLACED USING THE SAME SEED MIX USED DURING FILTER STRIP ESTABLISHMENT. FLOW SHOULD BE DIVERTED, IF POSSIBLE, FROM THE DAMAGED AREAS UNTIL THE GRASS IS FIRMLY ESTABLISHED. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS MUST BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CORRECTIVE MAINTENANCE, SUCH AS WEEDING OR REPLANTING SHOULD BE DONE MORE FREQUENTLY IN THE FIRST TWO TO THREE YEARS AFTER INSTALLATION TO ENSURE STABILIZATION. DENSE VEGETATION MAY REQUIRE IRRIGATION IMMEDIATELY AFTER PLANTING, AND DURING DRY PERIODS, PARTICULARLY AS THE VEGETATION IS INITIALLY ESTABLISHED.

MAINTENANCE:
GRASSY SWALES
SEASONAL MOWING AND LAWN CARE
CHANNEL MOWING WILL BE PERFORMED ROUTINELY AS NEEDED THROUGHOUT THE GROWING SEASON. GRASS WILL BE MOWED AS NEEDED TO LIMIT VEGETATION HEIGHT TO 2 INCHES, ABOVE THE DESIGN WATER DEPTH USING A MULCHING MOWER (OR REMOVAL OF CLIPPING). IF NATIVE GRASSES ARE USED, THE SWALE MAY REQUIRE LESS FREQUENT MOWING, BUT A MINIMUM OF TWICE ANNUALLY. GRASS CLIPPING AND BRUSH DEBRIS WILL NOT BE DEPOSITED WITHIN THE CHANNEL. REGULAR MOWING WILL ALSO INCLUDE WEED CONTROL PRACTICES, HOWEVER HERBICIDE USE WILL BE KEPT TO A MINIMUM. HEALTHY GRASS MAY BE MAINTAINED WITHOUT USING FERTILIZERS BECAUSE RUNOFF USUALLY CONTAINS SUFFICIENT NUTRIENTS. IRRIGATION OF THE SITE MAY ALSO HELP ASSURE A DENSE AND HEALTHY VEGETATIVE COVER.

INSPECTION
INSPECTION OF FILTER STRIPS SHOULD BE DONE AT LEAST TWICE ANNUALLY FOR EROSION OR DAMAGE TO VEGETATION; HOWEVER, ADDITIONAL INSPECTIONS AFTER PERIODS OF HEAVY RUNOFF ARE MOST DESIRABLE. THE STRIP SHOULD BE CHECKED FOR UNIFORMITY OF GRASS COVER, DEBRIS AND LITTER, AND AREAS OF SEDIMENT ACCUMULATION. MORE FREQUENT INSPECTIONS OF THE GRASS COVER WILL BE MADE DURING THE FIRST FEW YEARS AFTER ESTABLISHMENT TO DETERMINE IF ANY PROBLEMS ARE DEVELOPING, AND TO PLAN FOR LONG-TERM RESTORATIVE MAINTENANCE NEEDS. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS SHOULD BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS. CONSTRUCTION OF A LEVEL SPREADER DEVISE MAY BE NECESSARY TO REESTABLISH SHALLOW OVERLAND FLOW.

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SAN ANTONIO WATER SYSTEM (SAWS)
ENVIRONMENTAL RECOMMENDATIONS
1. MEASURES SHOULD BE TAKEN TO INSURE STORMWATER DOES NOT LEAVE THE PROPERTY UNTREATED.

2. THE CITY OF SAN ANTONIO SHALL INSPECT ALL PENDING CONSTRUCTION OF SEWER MAINS AND SERVICE LATERALS FOR PROPER CONSTRUCTION ACCORDING TO STATE AND CITY REGULATIONS AND CODES.

3. THE STORAGE, HANDLING, USE AND DISPOSAL OF HAZARDOUS MATERIALS WITHIN THIS DEVELOPMENT SHALL BE CONSISTENT WITH THE LABELING OF THOSE MATERIALS, AND APPLICABLE REGULATIONS. FAILURE TO COMPLY WITH THE LABEL WARNINGS MAY CONSTITUTE A VIOLATION OF FEDERAL LAW.

4. LANDSCAPED AREAS SHOULD BE SENSITIVE TO MINIMIZING WATER NEEDS (I.E. USE OF NATIVE PLANTS) AND THAT A MINIMAL AMOUNT OF PESTICIDES, HERBICIDES, OR FERTILIZERS SHOULD BE USED.

5. IF ANY SOLUTION OPENINGS, CAVES, SINKHOLES, OR WELLS ARE DISCOVERED ON THE PROPERTY DURING CONSTRUCTION OR BLASTING, THE OWNER/CONTRACTOR SHOULD NOTIFY THE SAWS AQUIFER PROTECTION AND EVALUATION SECTION AT (210) 233-3522.

6. THE GROUND WATER RESOURCE PROTECTION SECTION SHOULD BE NOTIFIED AT (210) 233-3546 UPON DISCOVERY AND PLUGGING OF WELLS. WELLS THAT ARE NO LONGER IN USE OR ABANDONED SHALL BE PROPERLY PLUGGED IN ACCORDANCE WITH SAWS WATER WELL PLUGGING PROCEDURES.

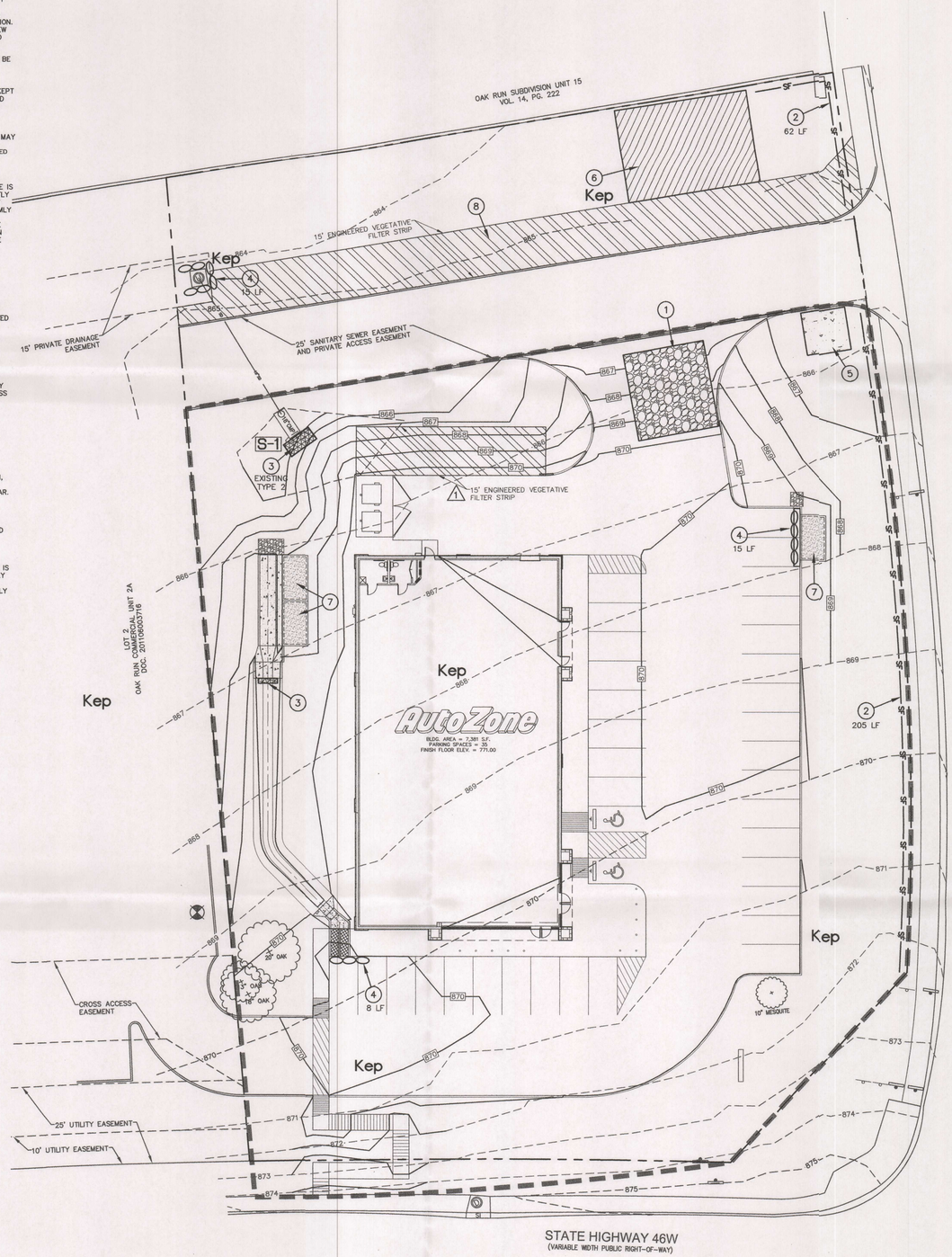
7. PRIOR TO THE START OF ANY BMP CONSTRUCTION, THE OWNER/CONTRACTOR SHOULD NOTIFY SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 TO SCHEDULE A SITE INSPECTION.

8. AFTER BMP CONSTRUCTION IS COMPLETE AND PRIOR TO THE START OF BUSINESS, THE OWNER/CONTRACTOR SHOULD NOTIFY SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 TO SCHEDULE A SITE INSPECTION.

9. IF THE BMP FAILS TO DRAIN PROPERLY, THE OWNER SHOULD NOTIFY THE SAWS CONSTRUCTION MONITORING SECTION AT (210) 233-3515 PRIOR TO ANY DISCHARGE OF WATER.

10. IF AT ANY TIME THE OWNERSHIP OF THE PROPERTY CHANGES, THE SELLER MUST INFORM THE BUYER OF ALL REQUIREMENTS FOR MAINTENANCE OF THE BMP'S. A SIGNED BMP MAINTENANCE PLAN AND SCHEDULE AGREEMENT, FROM THE NEW OWNER, MUST BE SUBMITTED TO THE AQUIFER PROTECTION AND EVALUATION

NOTE:
SEDIMENTATION AND EROSION CONTROLS SHOWN ARE SCHEMATIC ONLY, CONTROLS MAY BE FIELD LOCATED FOR BEST USE AND REPORTED TO ENGINEER. ADJUSTMENTS SHALL BE INDICATED ON PLAN BY CONTRACTOR.



LEGEND

EXISTING CONTOURS	605
FLOW ARROW	
AREA OF SOIL DISTURBANCE	
APPROXIMATE 100YR WATER SURFACE	
STABILIZED CONSTRUCTION ENTRANCE/EXIT	1
SILT FENCE AND/OR APPROPRIATE SUBSTITUTE	2 -SF-
ROCK BERM OR GABION	3
BAGGED GRAVEL INLET FILTER AND/OR APPROPRIATE SUBSTITUTE	4
*CONCRETE WASH OUT PIT	5
*EQUIPMENT STAGING AREA	6
FILTERRA MEDIA FILTER	7
EXISTING 15' WIDE ENGINEERED VEGETATIVE FILTER STRIP	8

*NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/ EXIT AND NOT LOCATED NEAR A WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.

**POTENTIAL RECHARGE FEATURE S-1

* NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/ EXIT AND NOT LOCATED NEAR A WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.

** REFER TO GEOLOGIC SITE ASSESSMENT

NOTE:
WATER POLLUTION ABATEMENT CONTROLS SHOWN ARE SCHEMATIC ONLY, CONTROLS MAY BE FIELD LOCATED FOR BEST USE AND REPORTED TO ENGINEER. ADJUSTMENTS SHALL BE INDICATED ON PLAN BY CONTRACTOR.

TOTAL DISTURBED AREA - 1.37 ACRES
PAVED AND CONCRETE - 0.63 ACRES
ROOF - 0.17 ACRES
SODDED AND SEEDED - 0.80 ACRES

RECEIVED
JAN 20 2016
COUNTY ENGINEER

STATE OF TEXAS
ROBERT R. DELGADO
95644
LICENSED
PROFESSIONAL ENGINEER
01/14/16

OWNER:
AutoZone, Inc.
123 S. FRONT STREET, 3rd FLOOR
MEMPHIS, TENNESSEE 38103

NORTH

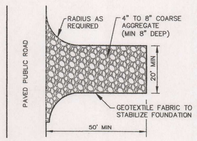
PREPARED FOR: AutoZone STORE DEVELOPMENT
Store No.: 3679 TX-46 NEW BRAUNFELS TEXAS 78132
WPAP SITE PLAN / SWPPP

SCALE: 1" = 20'-0"

REVISIONS
1. 01/14/2016 ADDED ENGINEERED VEGETATIVE FILTER STRIP
2.
3.
4.
5.
6.
7.

ENGINEER: RRD
DRAFTSMAN: AAL
CHECKED BY:
DATE 01/06/16
PROTOTYPE SIZE

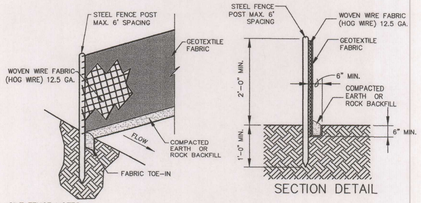
COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11602 Warfield, Suite 200 - San Antonio, Texas 78216
Tel: 210.807.9030 - Fax: 210.855.5930
www.coursen-koehler.com - TBPE Firm No. F-10747
CKE JOB NO. - 15002.00



STABILIZED CONSTRUCTION ENTRANCE\EXIT NOTES:

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

1 STABILIZED CONSTRUCTION ENTRANCE \ EXIT
N.T.S.

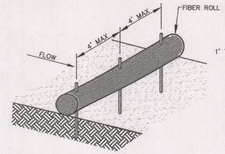


SECTION DETAIL

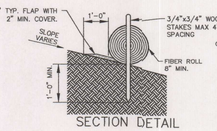
SILT FENCE NOTES

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT DEEP AND SPACED NOT MORE THAN 6 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.
3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TREATED (e.g. pavement or rock outcrop), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
9. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
10. REPLACE OR REPAIR ANY SECTION CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLE ACCESS POINTS.
11. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

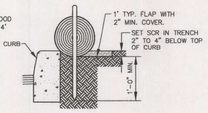
2 SILT FENCE
N.T.S.



ISOMETRIC PLAN VIEW



SECTION DETAIL



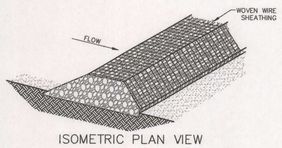
SECTION DETAIL AGAINST CURB

IN A CURBSIDE INSTALLATION WHERE THERE WILL BE VEHICULAR TRAFFIC, IT IS RECOMMENDED TO DIG A TRENCH TWO TO FOUR INCHES DEEP AND INSTALL SEDIMENT CONTROL ROLL AGAINST THE CURB WITH THE FLAP DIRECTED UPSTREAM. ANCHOR SOR AND COVER FLAP WITH TWO INCHES MIN. SOIL.

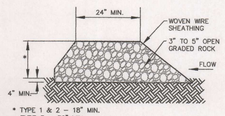
SEDIMENT CONTROL ROLL INSTALLATION NOTES:

1. FOLLOW MANUFACTURER RECOMMENDATIONS.
2. INSTALL FIBER ROLL ALONG A LEVEL CONTOUR.
3. INSTALL A FIBER ROLL NEAR SLOPE WHERE IT TRANSITIONS INTO A STEEPER SLOPE.
4. VERTICAL SPACING MEASURED ALONG THE FACE OF THE SLOPE VARIES BETWEEN 10' AND 20'

2A SEDIMENT CONTROL ROLL
N.T.S.



ISOMETRIC PLAN VIEW



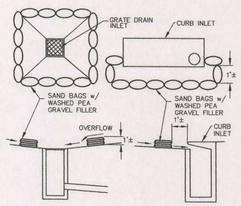
* TYPE 1 & 2 – 18" MIN.
TYPE 3 – 36" MIN.

SECTION DETAIL

ROCK BERM NOTES:

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN DIAGRAM, TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED ON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

3 ROCK BERM
N.T.S.



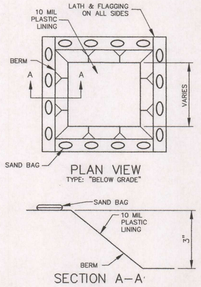
CURB INLET FILTER NOTES:

1. GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

GRATE INLET FILTER NOTES:

1. GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

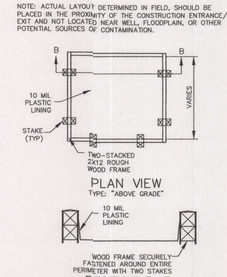
4 BAGGED GRAVEL INLET FILTER
N.T.S.



PLAN VIEW
TYPE: "BELOW GRADE"

SECTION A–A

NOTE: ACTUAL LAYOUT DETERMINED IN FIELD, SHOULD BE PLACED IN THE PROXIMITY OF THE CONSTRUCTION ENTRANCE/EXIT AND NOT LOCATED NEAR WELL, FLOODPLAIN, OR OTHER POTENTIAL SOURCES OF CONTAMINATION.



PLAN VIEW
TYPE: "ABOVE GRADE"

SECTION B–B

CONCRETE WASH OUT PIT NOTES:

1. DETAIL ILLUSTRATES MINIMUM DIMENSIONS; PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
3. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
4. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
5. DO NOT WASHOUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.

5 CONCRETE WASH OUT PIT
N.T.S.

GENERAL NOTES:

1. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASHOUT PIT AND CONSTRUCTION EQUIPMENT AND STORAGE AREA ARE TO BE DETERMINED IN THE FIELD. THEY ARE SHOWN ON THIS PLAN FOR ILLUSTRATION PURPOSES ONLY.
2. IF NECESSARY, CONTRACTOR MAY MODIFY STORMWATER CONTROLS TO ACHIEVE THE DESIRED INTENT. ANY CHANGES ARE TO BE NOTED, SIGNED AND DATED BY THE RESPONSIBLE PARTY IN THE TPDES BOOK.
3. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL STORMWATER CONTROLS.
4. REFER TO TPDES BOOK FOR THIS PROJECT FOR MORE INFORMATION/DETAILS.
5. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY QUESTIONS REGARDING THE INTENT OF THIS PLAN.
6. CONTRACTOR IS REQUIRED TO FILE NOI'S (NOTICE OF INTENT) AND NOT'S (NOTICE OF TERMINATION) FOR THIS PROJECT. REFER TO TPDES FOR PROPER POSTING REQUIREMENTS AND DOCUMENTS.
7. A COPY OF THIS PLAN AND THE TPDES BOOK MUST REMAIN AT THE CONSTRUCTION SITE AT ALL TIMES.
8. BARE SOILS SHOULD BE STABILIZED (e.g., HYDRO MULCH), WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS.
9. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED FOR TEMPORARY VEGETATIVE COVER. NO AREA SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSUITABLE FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK, OR 1 WEEK AFTER SOIL HAS BEEN DISTURBED, WHICHEVER IS LESS.
10. CONTRACTOR TO PROVIDE A COPY OF THE SIGNED AND CERTIFIED CONSTRUCTION SITE NOTICE TO THE OPERATOR OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEM RECEIVING THE DISCHARGE AT LEAST TWO DAYS PRIOR TO COMMENCING OF CONSTRUCTION ACTIVITY.

RECEIVED
JAN 20 2016
COUNTY ENGINEER

STATE OF TEXAS
ROBERT R. DELGADO
95644
LICENSED PROFESSIONAL ENGINEER
01/14/16

OWNER:
AutoZone, Inc.
123 S. FRONT STREET, 3rd FLOOR
MEMPHIS, TENNESSEE 38103

NORTH

PREPARED FOR: AutoZone STORE DEVELOPMENT
Store No.: 3679
TX-46
NEW BRAUNFELS
TEXAS 78132

WPAP SITE PLAN / SWPPP DETAILS

SCALE: 1" = 20'-0"

REVISIONS

1.	01/14/2016 REVISED WITH UPDATED DETAILS
2.	
3.	
4.	
5.	
6.	
7.	

ENGINEER: RRD
DRAFTSMAN: AAL
CHECKED BY:
DATE 01/06/16
PROTOTYPE SIZE

COURSEN-KOEHLER ENGINEERING & ASSOCIATES
11802 Wurzbach, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.5530
www.coursen-koehler.com • TBPE Firm No. F-10747
CKE JOB NO. - 15002.00

2 of 2

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

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

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

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

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

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

Sequence of Construction

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

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

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

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

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENTS

ATTACHMENT A – SPILL RESPONSE ACTIONS

ATTACHMENT B – POTENTIAL SOURCES OF CONTAMINATION

ATTACHMENT C – SEQUENCE OF MAJOR ACTIVITIES

ATTACHMENT D – TEMPORARY BEST MANAGEMENT PRACTICES & MEASURES

ATTACHMENT E – REQUEST TO TEMPORARILY SEAL A FEATURE

ATTACHMENT F – STRUCTURAL PRACTICES

ATTACHMENT G – DRAINAGE AREA MAP

ATTACHMENT H – TEMPORARY SEDIMENT POND(S) PLANS & CALCULATIONS

ATTACHMENT I – INSPECTION AND MAINTENANCE FOR BMPs

ATTACHMENT J – SCHEDULE OF INTERIM & PERMANENT SOIL STABILIZATION

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT A

SPILL RESPONSE ACTIONS

Site Specific Measures that will be taken to contain any spill of hydrocarbons or hazardous substances will include:

1. Immediate isolation of the substance source to keep additional spill or possible infiltration from occurring. Action will be taken to block the down gradient side using native earth material, absorbent blankets or absorbent socks.

2. The substance and contaminated materials will be excavated and placed within an impervious container or impervious-lined area that is protected from storm water runoff. Excavated materials will be covered to protect against rain.

3. The hazardous substance will be positively identified.

4. The spill area, after the excavation, will be sampled to verify that the hazardous substance has been properly and adequately remediated.

5. The excavated materials will be disposed of at an approved facility licensed to accept the substance identified. All transporting and disposal will follow State requirements for hazardous substances.

6. Fuels and Hazardous Substances are not to be stored on site.

7. Contractor shall become familiar with the Site Plan and confine activities with fuels and hazardous substances to locations that are adequate for the isolation and prevention of contamination in the event of a spill.

In addition to the above site specific measures, the following recommended measures from the Edwards Aquifer Technical Guidance Manual (RG-348, 2005); Section 1.4.16, Significant/Hazardous Spills section should also be followed and are provided herein. These measures are to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the storm water impacts of leaks and spills:

Education

1. Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.
2. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

3. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
4. Establish a continuing education program to indoctrinate new employees.
5. Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

1. To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
2. Store hazardous materials and wastes in covered containers and protect from vandalism.
3. Place a stockpile of spill cleanup materials where it will be readily accessible.
4. Train employees in spill prevention and cleanup.
5. Designate responsible individuals to oversee and enforce control measures.
6. Spills should be covered and protected from storm water run-on during rainfall to the extent that it doesn't compromise cleanup activities.
7. Do not bury or wash spills with water.
8. Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
9. Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
12. Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

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

Minor Spills

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

Semi-Significant Spills

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

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

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

1. Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
3. Notification should first be made by telephone and followed up with a written report.
4. The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

1. If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of storm water and the runoff of spills.
2. Regularly inspect onsite vehicles and equipment for leaks and repair immediately
3. Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
5. Place drip pans or absorbent materials under paving equipment when not in use.
6. Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

7. Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
8. Oil filters disposed of in trashcans or dumpsters can leak oil and pollute storm water. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
9. Store cracked batteries in a non- leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

1. If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the run-on of storm water and the runoff of spills.
2. Discourage "topping off" of fuel tanks.
3. Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT B

POTENTIAL SOURCES OF CONTAMINATION

1. Contaminants and fluids may be dropped from the use of construction equipment
2. Contaminants and fluids may be dropped from vehicles entering the site during construction
3. Contaminants and fluids may be dropped or spilled by workers during construction
4. Mud or dirt may be tracked onto streets from construction areas
5. Fine particles may be washed from non-stabilized areas
6. Contaminants and fluids may be spilled with the use of chemical / portable toilets during construction
7. Contaminants and fluids may be spilled during the connection to the existing SCS

During construction of the infrastructure contamination could come from oil, grease and fuel drippings from construction equipment and also from the process of excavating materials and grading. Additionally, the use of chemical / portable toilets and the tie to the existing SCS are a potential source of contamination.

If fuel or a hazardous substance spill occurs, the contaminants and contaminated soil will be removed and placed in an impervious container to be disposed of off-site at an approved disposal site. The placement of excavated materials will have appropriately sized erosion and sedimentation controls placed down gradient to prevent debris from the construction activity from washing down gradient of the site. The construction site will be cleaned of materials and debris at the end of each workday and/or at the completion of the infrastructure. The application of the prime coat and/or tack coat will be timed to avoid any occurrence of a rain event before placement of the HMAC, which would provide permanent soil stabilization for the street areas. Any concrete structures, flatwork, and formwork would also be similarly timed to avoid any occurrence of a rain event.

In any case of a spill or contamination, the Spill Response Actions identified in ATTACHMENT A of this section should be followed.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT C

SEQUENCE OF MAJOR ACTIVITIES

1. Grubbing & Clearing – Underbrush & Trees removed as necessary: ROWs, utility easements, and drains. Disturbed area is approximately 1.3 acres

2. Excavation - The Parking lots, and drainage areas will be cut to sub grade and flow line elevations. Disturbed area is approximately 0.9 acres

3. The utility lines, sanitary sewer lines, and water lines will be trenched. The trenches will be backfilled. Disturbed area is approximately 0.2 acres

4. Grading of lot, landscape areas, drainage infrastructure, and utility easements. Disturbed area is approximately 1.3 acres

5. After all the sanitary sewer service and water service have been trenched, the trenches will be re-excavated and the sewer lines will be installed to proper grade. Disturbed area is approximately 0.1 acres

6. Infrastructure Construction – Parking lot, drainage, and supporting infrastructure construction. Disturbed area is approximately 0.9 acres

7. AutoZone building construction. Disturbed area is approximately 0.17 acres

*Most of the acreage that is disturbed is within the approximately 1.3 acres of Parking lot and landscape areas.

Note: The excavated material from the trenches will be placed on the up gradient side of the trench. The trench would serve as a temporary sedimentation and erosion control measure.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT D

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

The Temporary Best Management Practices (TBMPs) and Measures that will be used:

Silt Fences (Sediment Control Rolls may be substituted where appropriate)
Stabilized Construction Entrances
Equipment Staging Area
Concrete Wash Out
Inlet Protection
Rock Berm or Gabion
Natural Vegetative Filter Strips (As Practicable)
Preservation of Natural Areas
Placement of Excavated Material on Up Gradient Side of Trench (Except in Floodplain)
Permanent Planting, Sodding, and/or Re-seeding
Regular Inspection & Maintenance
Stabilization

All structural TBMPs will be installed prior to the beginning of construction as per the Sedimentation & Erosion Control Plan and Storm Water Pollution Prevention Plan. The TBMPs will remain in place and will be maintained until all construction has ceased and perennial vegetative cover with a density of 70 percent has occurred.

1. Install stabilized construction entrance; Establish equipment staging area and concrete wash out
2. Installation of TBMPs - rock berm, inlet protection and silt fences as appropriate
3. Grubbing & Clearing
4. Excavation
5. Grading
6. Infrastructure Construction
7. Building Construction
8. Establish 70 percent vegetative cover
9. Remove TBMPs

The temporary measures to be used during construction to prevent pollution of surface water, groundwater, and storm water runoff will be the use of silt fencing, inlet protection, and rock berm, as necessary, generally located along the down gradient side of the project area as indicated in the Water Pollution Abatement Plan. The stabilized construction entrance, concrete wash out and equipment staging area will be located as practicable. The equipment staging area and concrete washout should be in the proximity of the construction entrance / exit and not located near a well, floodplain, or other potential sources of contamination. Structural practices, as applicable, will be installed prior to each phase of the project and will be maintained during the construction of that phase. Disturbed areas will be stabilized, re-vegetated if denuded, within 14 days after temporary (21 days) or permanent cessation of construction activities. In addition, natural vegetative filter strips will remain undisturbed along the down gradient perimeter of the property. No loose excavated material should be left within the floodplain at the end of a workday. The weather will need to be monitored and the application of the prime coat and/or tack coat emulsions will be timed to avoid any occurrence of a rain event before placement of the HMAC on the streets. Any concrete, flatwork, and formwork would also be similarly timed to avoid any occurrence of a rain event.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT E

REQUEST TO TEMPORARILY SEAL A FEATURE

Not applicable. There will be no temporary sealing of naturally-occurring sensitive features on-site.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT F

STRUCTURAL PRACTICES

The structural practices proposed that will limit runoff discharge of pollutants from exposed areas of the site will be the use of silt fences (sediment control rolls may be substituted where appropriate), rock berms or gabions, inlet protection, concrete wash out, equipment staging area, and stabilized construction entrances to prevent the suspended solids and sediments from washing across the site. Placement of structural practices in floodplains has been avoided as practicable. The protection of existing vegetation should be used in lieu of structural practices wherever possible, i.e. the Natural Vegetative Filter Strip along the down gradient perimeter of property.

1. A stabilized construction entrance with washout pit will be constructed at all locations where vehicular traffic enters and leaves the site. This will reduce tracking of sediments onto adjacent roadways and provide a stable area for entrance or exit from the construction site.

2. An equipment staging area will be established. This should be located in the proximity of the construction entrance / exit. This will provide a controlled and stable area to set-up materials and equipment.

3. Silt fencing will be installed adjacent to any drainage way which receives sheet flow from up gradient-disturbed areas and along the side slope perimeter of disturbed areas when no other TBMPs / Structural Practices are available.

4. Excavation for the permanent pond will be used to trap sediment until completion and acceptance of permanent storm drain piping.

5. Silt fencing will be installed in areas where up gradient flow from disturbed areas is concentrated, Washout of silt fencing may occur and should be monitored. Rock berms or gabions may also be installed along the side slope perimeter of disturbed areas if the up gradient flow is concentrated to prevent washout of silt fencing.

6. Sandbags filled with washed pea gravel will be used at storm drainage inlets prior to stabilization of the drainage areas. Alternative inlet protection may be utilized as appropriate.

7. Rock berms or gabions will be installed at points of concentrated flow to trap sediment prior to exiting the site and prevent down gradient erosion.

8. Although not anticipated, earthen berm/dikes may be constructed in some areas to divert up gradient flows around disturbed areas and onto natural drainage ways.

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT G

DRAINAGE AREA MAP

The drainage area map included with this section shows that the proposed project is divided into multiple drainage areas. The disturbed area which will be under construction and contributing to a specific point at any one time will not exceed 10 acres. Therefore the typical erosion and sedimentation controls will be sufficient to prevent the migration of loose or disturbed soils.

Please review the drainage area map on the following page.

DRAINAGE CALCULATIONS - EXISTING/PROPOSED (ULTIMATE) CONDITIONS										
Study Point	Drainage Area	Total Area (acres)	C	Tc (min)	Intensity, I (in/hr)			Discharge, Q (cfs)		
					5-Yr	25-Yr	100-Yr	5-Yr	25-Yr	100-Yr
1	A-1	0.53	0.67	10.0	6.34	9.07	11.94	2.2	3.5	5.3
2	A-2	0.24	0.47	10.0	6.34	9.07	11.94	0.7	1.1	1.7
3	A-3	0.32	0.73	10.0	6.34	9.07	11.94	1.5	2.3	3.5
4	A-4	0.22	0.42	10.0	6.34	9.07	11.94	0.6	0.9	1.4
5	A-5	0.42	0.58	10.0	6.34	9.07	11.94	1.5	2.4	3.6

Time of Concentration based on the TR-55 manual published in 1986 by the Soils Conservation Service.
Runoff Coefficient (C) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 5-6.
Rainfall Intensities (I) derived from City of New Braunfels Drainage and Erosion Control Design Manual Table 4-1.

LEGEND

- 1200 — EXISTING CONTOURS
- DRAINAGE AREA
- FLOW PATH
- A1 / 1.00 — AREA / ACREAGE
- 1 — STUDY POINT

RECEIVED
JAN 30 2016
COUNTY ENGINEER

STATE OF TEXAS
ROBERT R. DELGADO
95644
LICENSED PROFESSIONAL ENGINEER
01/05/16

OWNER:
AutoZone, Inc.
123 S. FRONT STREET, 3rd FLOOR
MEMPHIS, TENNESSEE 38103

NORTH

PREPARED FOR:
AutoZone STORE DEVELOPMENT
Store No.: 3679
TX-46
NEW BRAUNFELS
TEXAS 78132

DRAINAGE PLAN

SCALE: 1" = 20'-0"

REVISIONS
1.
2.
3.
4.
5.
6.
7.

ENGINEER: RRD
DRAFTSMAN: AAL
CHECKED BY:
DATE 01/07/16
PROTOTYPE SIZE

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Wurzbach, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.9530
www.coursen-koehler.com • TBPE Firm No. F-10747
CKE JOB NO. - 15002.00

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT H

TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

No temporary sediment ponds or traps are required

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT I

INSPECTION AND MAINTENANCE FOR BMPs

Following are recommended minimum site specific inspection and maintenance measures for the BMPs proposed with this project. The recommended measures are derived from the Edwards Aquifer Technical Guidance Manual (RG-348, 2005); *Section 1.3, Temporary Erosion Control BMPs* and *Section 1.4, Temporary Sediment Control BMPs.* More detailed guidance is contained within the sections referenced.

The following steps will help prevent or reduce the sediment transported by storm water runoff in areas of disturbance:

General

1. Silt fences (sediment control rolls may be substituted where appropriate), rock berms, gabions, inlet protection, and stabilized construction entrances must be in place prior to the start of construction and will remain in place until construction has been completed and the site stabilized from further erosion.

2. The contractor will keep a record of the inspections, noting the condition of the BMPs and any corrective action taken to maintain the erosion control structures. In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on site. In particular the following information should be kept:

    - The dates when major grading activities occur in a particular area.
    - The dates when construction activity ceases in an area, temporarily or permanently.
    - The dates when an area is stabilized, temporarily or permanently.

3. All soil, sand, gravel, and excavated material stockpiled on-site will have appropriately sized silt fencing placed up gradient and down gradient.

Inspection

1. A qualified E & S inspector (representing the discharger) shall inspect the following items once every seven (7) days, and within 24 hours after storm event of a ½-inch or greater rainfall:

    - Disturbed areas of the construction site that have not been finally stabilized
    - Areas used for storage of materials that are exposed to precipitation
    - Structural and stabilization control measures
    - Construction entrance/exits

2. The E & S inspector shall have authority to require immediate action on the part of the Contractor to correct any nonconforming items found during inspections or to require revisions to the E & S controls if appropriate. If revisions are needed, they shall be implemented within 7 calendar days after the date of inspection.

3. The E & S inspector will provide written reports covering all items/areas inspected and outlining corrective measures if any.

Maintenance

1. All erosion and sedimentation (E & S) measures/controls shall be maintained in good working order by the Contractor. Written maintenance reports shall be prepared covering all inspections and maintenance affecting E & S controls. If repair(s) are necessary, they shall be initiated within 24 hours after report.

2. The construction entrance shall be maintained in a condition which will prevent/minimize tracking or flowing of sediments onto public roadways. Sediments spilled, dropped, washed or tracked onto public roadways must be removed.

3. Temporary and permanent seeding and planting shall be maintained to insure the following:

    - Bare spots are filled in
    - Wash-outs are filled in
    - Healthy growth is promoted

4. For silt fence and rock berms, when silt reaches a depth equal to 6", the silt shall be removed and mixed with other soil materials to be placed within the embankment areas of the project site.

5. Silt fences shall be maintained to insure the following:

    - Torn fabric is replaced
    - Loose fabric is properly re-secured
    - Loose post supports are plumbed and strengthened
    - Fabric bottom is anchored

6. Rock berms shall be maintained / cleaned by lifting, dropping and reshaping stones as required.

7. Diversion dykes, swales or berms shall be maintained to insure the following:

    - Positive drainage to an outlet
    - Any breaks promptly repaired.

8. Trash receptacles will be placed onsite for the use of workmen.

9. Documentation of maintenance/inspection activities will be kept on site.

An example log sheet for the inspection, maintenance and repair of the BMPs follows. The sample document is as provided by the Environmental Protection Agency (EPA). The sample can be found and is available for download at www.epa.gov/. It should be modified for the project specific conditions and BMPs. At a minimum, the Inspection Log / Report utilized by the qualified E&S inspector should provide details related to the inspection, maintenance and repair of the BMPs including observations on the site conditions.

Appendix B: **Sample Inspection Report**

Instructions

This sample inspection report has been developed as a helpful tool to aid you in completing your site inspections. This sample inspection report was created consistent with EPA's Developing Your Stormwater Pollution Prevention Plan. You can find both the guide and the sample inspection report (formatted in Microsoft Word) at www.epa.gov/npdes/swpppguide

This inspection report is provided in Microsoft Word format to allow you to easily customize it for your use and the conditions at your site. You should also customize this form to help you meet the requirements in your construction general permit related to inspections. **If your permitting authority provides you with an inspection report, please use that form.**

For more information on inspections, please see Developing Your Stormwater Pollution Plan Chapters 6 and 8.

Using the Inspection Report
This inspection report is designed to be customized according to the BMPs and conditions at your site. For ease of use, you should take a copy of your site plan and number all of the stormwater BMPs and areas of your site that will be inspected. A brief description of the BMP or area should then be listed in the site-specific section of the inspection report. For example, specific structural BMPs such as construction site entrances, sediment ponds, or specific areas with silt fence (e.g., silt fence along Main Street; silt fence along slope in NW corner, etc.) should be numbered and listed. You should also number specific non-structural BMPs or areas that will be inspected (such as trash areas, material storage areas, temporary sanitary waste areas, etc).

You can complete the items in the "General Information" section that will remain constant, such as the project name, NPDES tracking number, and inspector (if you only use one inspector). Print out multiple copies of this customized inspection report to use during your inspections.

When conducting the inspection, walk the site by following your site map and numbered BMPs/areas for inspection. Also note whether the overall site issues have been addressed (customize this list according to the conditions at your site). Note any required corrective actions and the date and responsible person for the correction in the Corrective Action Log.

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications	Insert qualifications or add reference to the SWPPP. (See Section 5 of the SWPPP Template)		
Describe present phase of construction			

Type of Inspection:
❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

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."

Print name and title: _____

Signature: _____ **Date:** _____

AUTO ZONE #3679
Temporary Stormwater Section

ATTACHMENT J

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

The schedule of interim and permanent soil stabilization will be as follows:

1. Interim/permanent stabilization will be performed on denuded and/or disturbed areas within 14 days after temporary (21 days) or permanent cessation of construction activities.

2. Permanent stabilization will be done with the completion of the infrastructure construction and with the completion of the construction of the main building structure.

Refer to ATTACHMENT D in the TEMPORARY STORMWATER SECTION for a schedule summary.

The soil stabilization practices for this project may include: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, and preservation of mature vegetation. Use of drought resistant wildflowers should be considered as a supplement to existing vegetation in appropriate areas. Permanent stabilization of the soil within the roadway is completed with the final pavement course and completion of the sidewalks.

The primary practice will be the establishment of vegetation and the protection of existing vegetation including trees. Seeding and/or sod will be done in areas ready for final landscaping, areas to final grade, and in areas that are otherwise practicable. Areas where final grading is not complete will either be re-vegetated or allowed to re-vegetate naturally. Blankets and matting along with mulch may be used to aid in the establishment of vegetation and/or provide erosion stops.

The Edwards Aquifer Technical Guidance Manual (RG-348, 2005); *Section 1.2, General Guidelines* recommends the following practice for soil stabilization in periods of drought or when vegetation cannot be established.

"During times of year when vegetation cannot be established, soil mulching should be applied to moderate slopes and soils that are not highly erodible. On steep slopes or highly erodible soils, multiple mulching treatments should be used. Interlocking ceramic materials, filter fabric, and netting are available for this purpose..."

"Because of the hardy drought-resistant nature of wildflowers, they may be more beneficial as an erosion control practice than turf grass. While not as dense as turfgrass wildflower thatches and associated grasses are expected to be as effective in erosion control and contaminant absorption. Because thatches of wildflowers do not need fertilizers, pesticides, or herbicides, and the need for watering is minimal, implementation of this practice may result in cost savings... A wildflower stand requires several years to become established; however, maintenance requirements are minimal once the area is established."

The recommended soil stabilization practices are derived from the Edwards Aquifer Technical Guidance Manual (RG-348, 2005); *Section 1.2, General Guidelines*, *Section 1.3, Temporary Erosion Control BMPs, Section 1.4, Temporary Sediment Control BMPs, and Section 2.5, Landscaping and Vegetative Practices.* More detailed guidance is contained within the sections referenced.

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), 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 **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Robert R. Delgado, P.E.

Date: 01/04/16

Signature of Customer/Agent

Regulated Entity Name: Auto Zone #3679

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

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

   ☐ N/A

2. ☒ 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

3. ☒ 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

4. 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.

5. 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 A - 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.

6. ☒ **Attachment B - 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.

7. ☒ **Attachment C - 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.

8. ☐ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☒ N/A

9. ☒ The applicant understands that 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.

☒ 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 has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☒ Design calculations (TSS removal calculations)
☒ TCEQ construction notes
☒ All geologic features
☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☒ Signed by the owner or responsible party
    ☐ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☐ A discussion of record keeping procedures

    ☐ N/A

12. ☐ **Attachment H - 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

13. ☐ **Attachment I -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 results in water quality degradation.

    ☒ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☒ 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.

    ☐ N/A

15. ☒ 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.

    ☐ N/A

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENTS

ATTACHMENT A – 20% OR LESS IMPERVIOUS COVER WAIVER

ATTACHMENT B – BMPs FOR UPGRADIENT STORMWATER

ATTACHMENT C – BMPs FOR ON-SITE STORMWATER

ATTACHMENT D – BMPs FOR SURFACE STREAMS

ATTACHMENT E – REQUEST TO SEAL FEATURES

ATTACHMENT F – CONSTRUCTION PLANS

ATTACHMENT G – INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

ATTACHMENT H – PILOT-SCALE FIELD TESTING PLAN

ATTACHMENT I – MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT A

20% OR LESS IMPERVIOUS COVER WAIVER

Not Applicable – The commercial development will exceed 20% impervious cover; therefore no waiver will be requested.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT B

BMPs FOR UPGRADIENT STORMWATER

No surface water or groundwater that originates up gradient from the site will flow across the site. Stormwater that originates up gradient from the site will sheet flow across the site into a proposed parking lot and has been included in Catchment Area 1. BMPs for up gradient stormwater treatment are provided for as part of, or in relation to this project. Stormwater from Catchment Area 1 will be treated with a proposed Filterra.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT C

BMPs FOR ON-SITE STORMWATER

The permanent best management practices (BMPs) proposed for the on-site storm water runoff from the site area combination of Filterra Water Quality Structure and Engineered Vegetative Filter Strips. The anticipated pollutants would be fuel, oil and grease from vehicles including the suspended solids and sediments brought on-site by the vehicles, landscape products, and pest control products. The permanent BMPs proposed for this site are designed according to the TCEQ Technical Guidance Manual (TGM). The property owner must notify the TCEQ if the land use changes from the described use.

Design calculations for the permanent BMPs proposed for this site are provided within ATTACHMENT F of the PERMANENT STORMWATER SECTION.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT D

BMPs FOR SURFACE STREAMS

Runoff does not directly outfall into a surface stream, but flows across natural vegetative filters or through a Filterra water quality structure to prevent pollutants from being conveyed and entering any down gradient streams. Therefore, no additional water pollution abatement is required. Moreover, no sensitive features were identified in the geologic assessment.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT E

REQUEST TO SEAL FEATURES

Not Applicable - Requests to permanently seal any "sensitive" or "possibly sensitive" features are not being proposed.

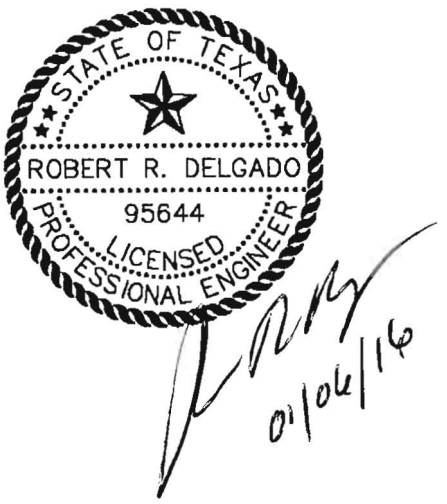
AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT F

Impervious Cover

&

TSS Calculations



ATTACHMENT F
SUMMARY OF PERMANENT BMPs

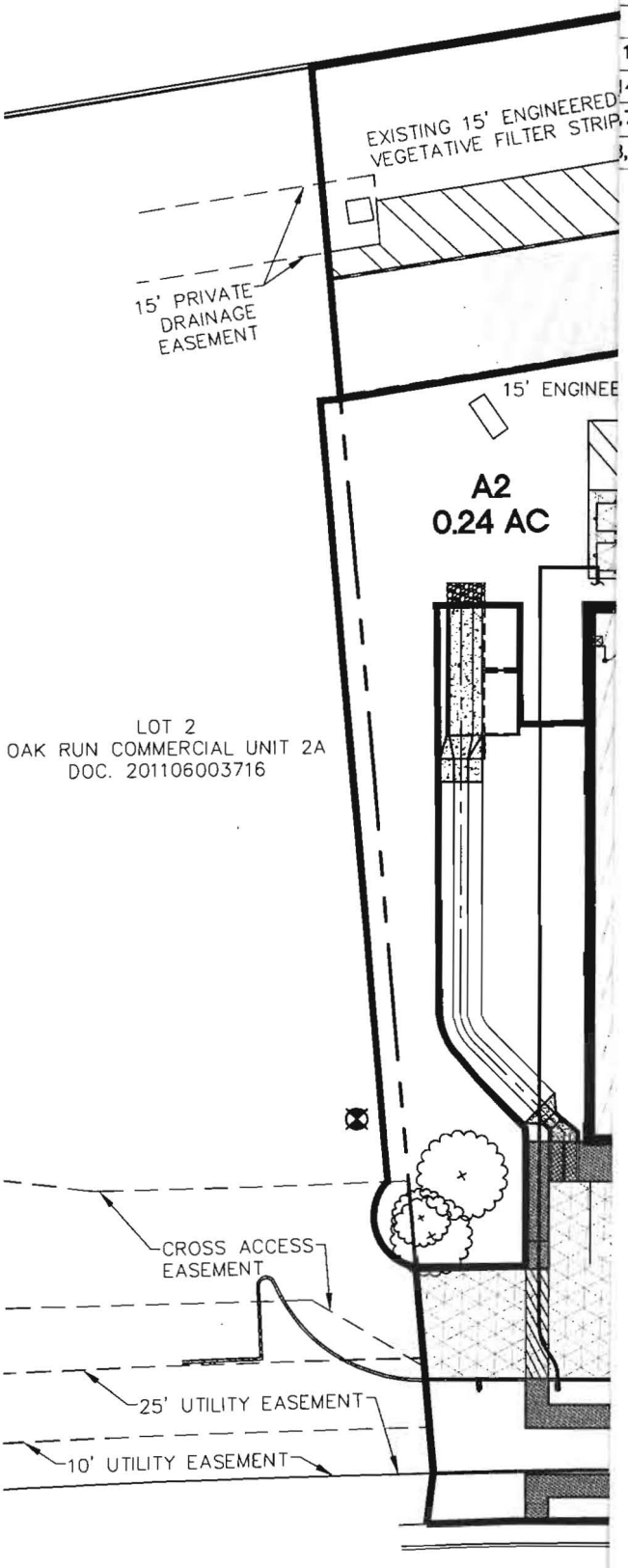
PROJECT INFO

1.71	**ACRES**
0.84	**ACRES OF IC**
637	**# TSS**

WATERSHED / CATCHMENT AREA	PERMANENT BMP	GROSS AREA ACRES	IMP. COVER ACRES	PEAK TREATMENT FLOW REQ. ft^3/S	DESIGN CAPTURE FLOW RATE ft^3/S	MIN. TSS REMOVAL (Lm) lb	DESIGN TSS REMOVAL (Lr) lb
A1	Filtera	0.53	0.34	0.566	0.690	305	336
A2*	None	0.24	0.03	-	-	27	27
A3	Filtera	0.31	0.26	0.285	0.295	233	245
A4*	None	0.22	0.03	-	-	27	-
A5	VFS	0.41	0.18	-	-	45	45
TOTAL		**1.71**	**0.84**			**637**	**653**

Areas A1 & A4 are Uncaptured Areas - Over Treatment Provided by Permanent BMPs
An Excess of 49 lb/yr of TSS Removal is Provided
** Includes Off-Site Up Gradient Area*

UMMARY			
HER IC (SF)	TOTAL IC		IC (%)
	(SF)	(AC)	
800	14,790	0.34	64%
	1,295	0.03	12%
110	11,325	0.26	84%
1440	1440	0.03	14%
780*	7,635	0.18	44%
3,130	34,815	0.84	49%



SCALE: 1" = 40'

LEGEND

- STRUCTURES IC
- PARKING IC
- OTHER IC
- 15' ENGINEERED VEGETATIVE FILTER STRIP

COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
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www.coursen-koehler.com · TBPE Firm No. F-10747

AUTOZONE TX #3679
NEW BRAUNFELS, TEXAS
IMPERVIOUS COVER EXHIBIT

JOB NO.:	15027.00
DATE:	JAN 07, 2016
DRAWN:	AAL

1 OF 1

Date: Jan 14, 2016, 11:41am User ID: TLimon
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\Impervious Cover.dwg

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bulverde Oaks - Tract 4&5
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): **Drainage / Catchment Area - A1**

Drainage Basin/Outfall Area No. =	**A1**		**Filterra Bioretention**
Total drainage basin/outfall area =	0.53	acres	
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	0.34	acres	
Post-development impervious fraction within drainage basin/outfall area =	0.64		
$L_{M\ THIS\ BASIN}$ =	305	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Bioretention**
Removal efficiency = **89** percent

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

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

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

where:

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

A_C =	0.53	acres
A_I =	0.34	acres
A_P =	0.19	acres
L_R =	349	lbs

ATTACHMENT F
TSS CALCULATIONS

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

Desired $L_{M\ THIS\ BASIN}$ =	**336**	lbs.
F =	**0.96**	

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 =	**2.80**	inches
Post Development Runoff Coefficient =	**0.45**	
On-site Water Quality Volume =	**2437**	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 =	**487**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**2925**	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.

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: AutoZone TX # 3679
Date Prepared: 1/14/2016

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = 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 =	**Comal**	
Total project area included in plan * =	**1.71**	acres
Predevelopment impervious area within the limits of the plan * =	**0.13**	acres
Total post-development impervious area within the limits of the plan* =	**0.84**	acres
Total post-development impervious cover fraction * =	**0.49**	
P =	**33**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**637**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**5**	

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

Drainage Basin/Outfall Area No. =	**1**	
Total drainage basin/outfall area =	**0.53**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.34**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.64**	
$L_{M\ THIS\ BASIN}$ =	**305**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**FT**	abbreviation
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:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	**0.53**	acres
A_I =	**0.34**	acres
A_P =	**0.19**	acres
L_R =	**349**	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	**336**	lbs.
F =	**0.96**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.00**	acres
Offsite impervious cover draining to BMP =	**0.00**	acres

Calculations from RG-348
Pages Section 3.2.19

Rainfall Intensity =	**1.80**	inches per hour
Effective Area =	**0.31**	acres
Peak Treatment Flow Required =	**0.566**	cubic feet per second

7. Filterra
Designed as Required in RG-348
Section 3.2.19

Flow Through Filterra Size

Filterra Size for Flow-Based Configuration =	**(2) 13x7 units**	
Filterra Treatment Flow Rate =	**0.590**	cfs

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone # 3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): **Drainage / Catchment Area - A2**

Drainage Basin/Outfall Area No. =	A2	
Total drainage basin/outfall area =	0.24	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	ecres
Post-development impervious area within drainage basin/outfall area =	0.03	acres
Post-development impervious fraction within drainage basin/outfall area =	0.13	
$L_{M\ THIS\ BASIN}$ =	27	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (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 =	0.24	acres
A_I =	0.03	acres
A_P =	0.21	acres
L_R =	32	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 27 lbs.

F = 0.84

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone # 3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = A3

2. Drainage Basin Parameters (This information should be provided for each basin): **Drainage / Catchment Area - A3**

Drainage Basin/Outfall Area No. =	3	
Total drainage basin/outfall area =	0.32	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.26	acres
Post-development impervious fraction within drainage basin/outfall area =	0.81	
$L_{M\ THIS\ BASIN}$ =	233	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Bioretention
Removal efficiency = 89 percent

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

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

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

where:

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

A_C =	0.32	acres
A_I =	0.26	acres
A_P =	0.06	acres
L_R =	265	lbs

ATTACHMENT F
TSS CALCULATIONS

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

Desired $L_{M\ THIS\ BASIN}$ =	**245**	lbs.
F =	**0.92**	

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

Rainfall Depth =	**2.00**	inches
Post Development Runoff Coefficient =	**0.64**	
On-site Water Quality Volume =	**1490**	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 =	**298**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**1788**	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.

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: AutoZone TX # 3679
Date Prepared: 1/14/2016

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = 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 =	**Comal**	
Total project area included in plan * =	**1.71**	acres
Predevelopment impervious area within the limits of the plan * =	**0.13**	acres
Total post-development impervious area within the limits of the plan* =	**0.83**	acres
Total post-development impervious cover fraction * =	**0.49**	
P =	**33**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**628**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**5**	

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

Drainage Basin/Outfall Area No. =	**3**	
Total drainage basin/outfall area =	**0.32**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.26**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.81**	
$L_{M\ THIS\ BASIN}$ =	**233**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**FT**	abbreviation
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:
$LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

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

A_C =	**0.32**	acres
A_I =	**0.26**	acres
A_P =	**0.06**	acres
L_R =	**265**	lbs.

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

Desired $L_{M\ THIS\ BASIN}$ =	**245**	lbs.
F =	**0.92**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.00**	acres
Offsite impervious cover draining to BMP =	**0.00**	acres

Calculations from RG-348
Pages Section 3.2.19

Rainfall Intensity =	**1.20**	inches per hour
Effective Area =	**0.24**	acres
Peak Treatment Flow Required =	**0.285**	cubic feet per second

7. Filterra
Designed as Required in RG-348
Section 3.2.19

Flow Through Filterra Size

Filterra Size for Flow-Based Configuration =	**13x7**	
Filterra Treatment Flow Rate =	**0.295**	cfs

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone # 3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): Drainage / Catchment Area - A4

Drainage Basin/Outfall Area No. =	A4	
Total drainage basin/outfall area =	0.22	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.03	acres
Post-development impervious fraction within drainage basin/outfall area =	0.14	
$L_{M\ THIS\ BASIN}$ =	27	lbs.

ATTACHMENT F
TSS CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: AutoZone #3679
Date Prepared: January 6, 2016

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 =	Comal	
Total project area included in plan * =	1.71	acres
Predevelopment impervious area within the limits of the plan * =	0.13	acres
Total post-development impervious area within the limits of the plan* =	0.84	acres
Total post-development impervious cover fraction * =	0.49	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	637	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 5

2. Drainage Basin Parameters (This information should be provided for each basin): **Drainage / Catchment Area - A5**

Drainage Basin/Outfall Area No. =	**A5**	
Total drainage basin/outfall area =	0.41	acres
Predevelopment impervious area within drainage basin/outfall area =	0.13	acres
Post-development impervious area within drainage basin/outfall area =	0.18	acres
Post-development impervious fraction within drainage basin/outfall area =	0.44	
$L_{M\ THIS\ BASIN}$ =	45	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

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

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

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

where:

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

A_C =	0.41	acres
A_I =	0.18	acres
A_P =	0.23	acres
L_R =	178	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 45 lbs.

F = 0.25

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

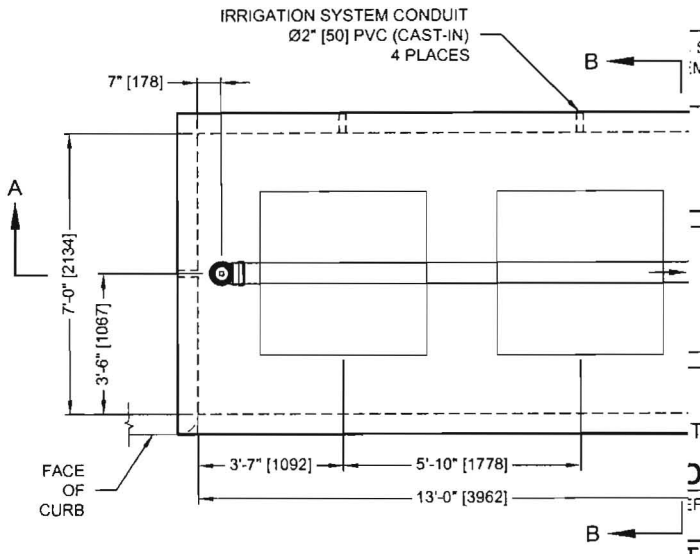
There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

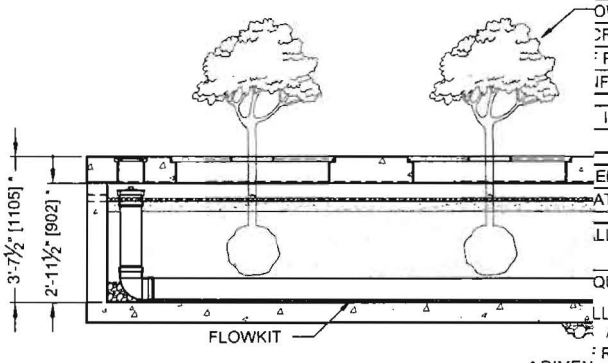
AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT F

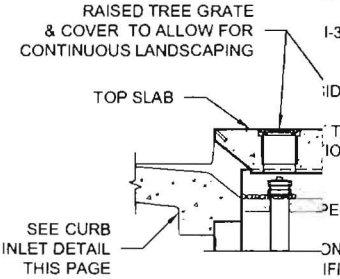
Construction Plans



PLAN VIEW



SECTION A-A



OPTIONAL REC

(TYPICAL TOP S

SEPARATE INLET STRUCTURE
M DESIGN CAPACITY. SEE THE

ORIENTATION OPTIONS

FERENCE IS INLET THROAT

TE SPECIFIC REQUIREMENTS

	A1
T CAPACITY (CFS / l/s)	0.295
OW RATE (CFS / l/s)	0.283
FS / l/s)	*
PEAK FLOW (YRS)	*
IFILTRATION RATE	100 in/hr

I.E.	MATERIAL	DIAMETER
*	SDR 35	6"

ENTATION	LONG
ATION	868.62

LLAST	WIDTH	HEIGHT
	*	*

QUIREMENTS:
LL BE USED
ABOVE ARE FOR ONE FILTERRA
RECORD

* DIMEN
DEPEND
BUILD C

ACTIVATION. PLANT SELECTION SHALL
S.

R CONTECH REPRESENTATIVE.

TION CONTAINED IN THIS DRAWING.
RB AND ADJACENT HS-2 LIVE LOAD

I-318 LOAD FACTOR DESIGN METHOD.

IDERATIONS AND SHALL BE SPECIFIED

THE FILTERRA VAULT (LIFTING
ION OF DAMAGE TO CONCRETE

E CONNECTION.

ON-RELATED EROSION RUNOFF.
IFIED. ACTIVATION ONLY OCCURS WHEN
MENT.
ASIS. EACH FILTERRA UNIT INCLUDES

NE STANDARD
NLET
307

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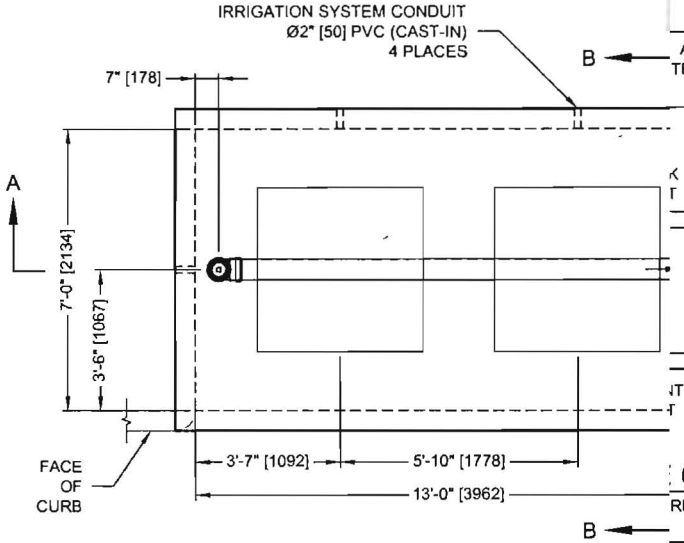
STATE OF TEXAS
ROBERT R. DELGADO
95644
LICENSED
PROFESSIONAL ENGINEER
01/06/16

AUTOZONE STORE 3679
NEW BRAUNFELS, TEXAS
WATER POLLUTION ABATEMENT PLAN
WATER QUALITY DETAILS

JOB NO.: 15027.00
DATE: DECEMBER 11, 2015
DRAWN: AAL
SHEET:

1 OF 3

Date: Dec 14, 2015, 5:37pm User ID: TLimon
File: P:\AutoZone\New Braunfels Store #3679\TCEQ\WPAP\dwg\15027.00 WPAP Maps.dwg



PLAN VIEW

ORIENTATION OPTIONS

REFERENCE IS INLET THROAT

A SEPARATE INLET STRUCTURE
TEM DESIGN CAPACITY. SEE THE

ITE SPECIFIC
REQUIREMENTS

	A3
ENT CAPACITY (CFS / l/s)	0.295
FLOW RATE (CFS / l/s)	0.285
(CFS / l/s)	*
OF PEAK FLOW (YRS)	*
INFILTRATION RATE	100 in/hr

I.E.	MATERIAL	DIAMETER
*	SDR 35	6"

RIENTATION	LONG
EVATION	869.55

BALLAST	WIDTH	HEIGHT
	*	*

REQUIREMENTS:

OF RECORD

* DIME
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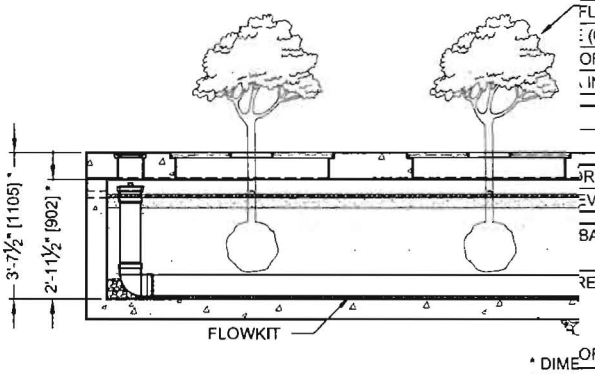

SECTION A-A

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OUR CONTECH REPRESENTATIVE.

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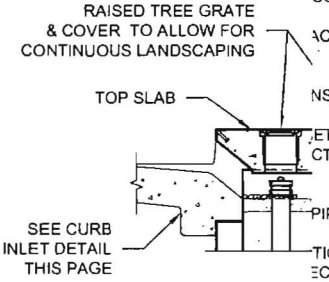

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COURSEN-KOEHLER
ENGINEERING & ASSOCIATES
11802 Warfield, Suite 200 • San Antonio, Texas 78216
Tel: 210.807.9030 • Fax: 210.855.5530
www.coursen-koehler.com • TBPE Firm No. F-10747

STATE OF TEXAS
ROBERT R. DELGADO
95644
LICENSED
PROFESSIONAL ENGINEER
01/06/16

AUTOZONE STORE 3679
NEW BRAUNFELS, TEXAS
WATER POLLUTION ABATEMENT PLAN
WATER QUALITY DETAILS

JOB NO.: 15027.00
DATE: DECEMBER 11, 2015
DRAWN: AAL
SHEET:
2 OF 3

Date: Dec 14, 2015, 5:38pm User ID: TLimon
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A SEPARATE INLET STRUCTURE
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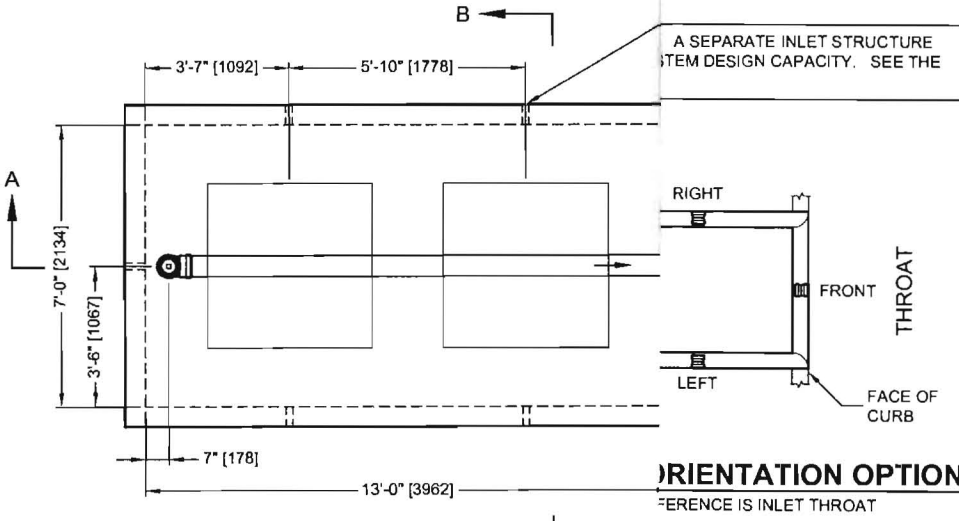

ORIENTATION OPTIONS

FERENCE IS INLET THROAT

PLAN VIEW

SITE SPECIFIC A REQUIREMENTS

PL	*
CMENT CAPACITY (CFS / l/s)	*
/ FLOW RATE (CFS / l/s)	*
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	I.E.	MATERIAL	DIAMETER
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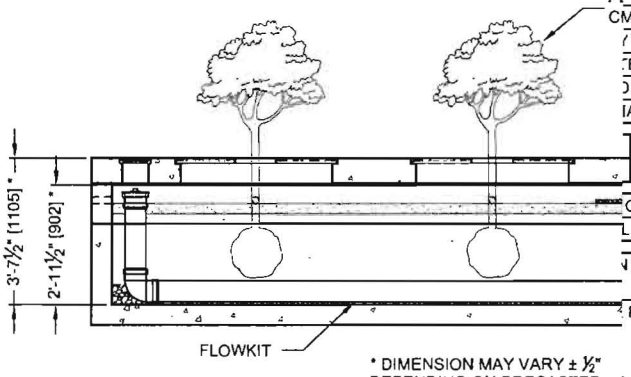

* DIMENSION MAY VARY ± ½" DEPENDING ON PRECASTER BUILD CONFIGURATION.

SECTION A-A

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MATION CONTAINED IN THIS DRAWING. CURB AND ADJACENT HS-2 LIVE LOAD

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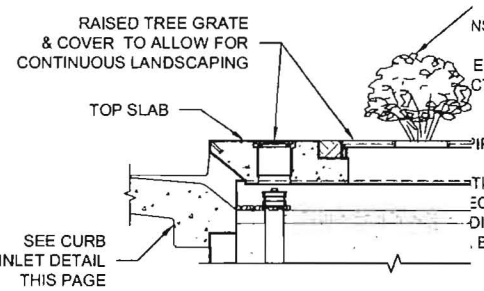

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STATE OF TEXAS
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AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT G

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

The following sheets include the inspection, maintenance, repair, and retrofit plans for the following:

- Filterra water quality structure
- Engineered Vegetative Filter Strip

It should be noted that the timing and procedures presented herein are general guidelines. Adjustments to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions.

Engineer Certification:

I certify that the suggested inspection, maintenance, repair, and retrofit plans provided within ATTACHMENT G of the PERMANENT STORMWATER SECTION were prepared by the engineer designing the permanent BMPs and measures.

Robert R. Delgado, PE
Print Name of Engineer

Signature of Engineer

Date 01/06/16

SUGGESTED MAINTENANCE PLAN & SCHEDULE
VEGETATIVE FILTER STRIPS

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The care and maintenance a vegetated filter strip receives in the first few months are keys to establishing the viability of the filter strips. Once a vegetated area is well established, little additional maintenance is generally necessary, however, all vegetated Best Management Practices (BMPs) require some basic maintenance including:

Pest Management: An Integrated Pest Management Plan (IPM) should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

Seasonal Mowing and Lawn Care: If the filter strip is made of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clipping). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clipping and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum. Healthy grass may be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site may also help assure a dense and healthy vegetative cover.

Inspection: Inspection of filter strips should be done at least twice annually for erosion or damage to vegetation; however, additional inspections after periods of heavy runoff are most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover will be made during the first few years after establishment to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections should be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

Debris and Litter Removal: Any filter strip or filter strip structures (i.e. leveled spreaders) should be kept free of obstructions to reduce floatables from being flushed downstream, and for aesthetic reasons. The need for this practice will be determined through periodic inspection, but will be performed no less than four (4) times per year.

Sediment Removal: Sediment removal is not normally required in filter strips. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand, with flat-bottomed shovels, or light construction equipment.

Grass Re-seeding and Mulching: A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. Flow should be diverted, if possible, from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during dry periods, particularly as the vegetation is initially established.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of San Antonio guidelines (if within jurisdiction of City of San Antonio) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or SAWS officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

Contact Person: Mitch Bramlitt

Entity: AutoZone Development Corporation

Mailing Address: 123 South Front Street

City, State and Zip: Memphis, Tn 38103

Telephone: 901.495.8714 Facsimile: 901.495.8300

Email: Mitch.bramlitt@autozone.com

Signature of Responsible Party Agent

01/06/16
Date

SUGGESTED MAINTENANCE PLAN & SCHEDULE
STORMFILTER SYSTEM

PROJECT NAME: AutoZone #3679

ADDRESS: 8400 Block of Texas HW 46

CITY, STATE ZIP: New Braunfels, Texas 78132

The Filterra Bioretention System should be inspected at semiannual basis (generally spring and fall servicing) and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend on site specific activities. Typical designs are intended for an semiannual maintenance cycle. The attached manufacturer recommended guidelines are included in the *Suggested Maintenance Plan and Schedule* and should be followed.

Inspections: Inspection of the storage component should occur at a minimum of twice a year. The inspection should be of the structure and media.

Sediment Removal: Sediment removal should occur before the accumulated sediment occupies 20% of the settling chamber. Typically includes cartridge replacement and sediment removal from the vault.

Debris and Litter Removal: Debris, silt and mulch must be removed from the filter surface.

Filterra System Sample Inspection & Maintenance Log

Model:							**Location:**	
Date	1	2	3			Maintenance Performed	Maintenance Personnel	Comments

Each Maintenance session should include the following:

1. Inspection of the unit structure and media;
2. Removal of trash, silt and mulch from the filter surface;
3. After the removal of trash, silt and mulch, measure the distance from the top of the Filterra engineered media soil to the bottom of the top slab. If this distance is greater than 12 inches, add Filterra media (not top soil or other) to recharge the media to a 9 inch distance;

4. Replace the mulch layer, to the design depth, with mulch that meets the technical specifications;
5. Ensure correct repositioning of the erosion control stones by the Filterra inlet to allow for the entry of trash during a storm event;
6. Pruning of vegetation. If the vegetation is in dead or in poor health, it will require replacement; and;
7. Disposal of all removed items.

"Proper" disposal of accumulated silt shall be accomplished following the Texas Commission on Environmental Quality (TCEQ) and City of San Antonio guidelines (if within jurisdiction of City of San Antonio) and specifications.

After all inspections, results shall be recorded and maintained. Records should be made available on request by TCEQ and/or New Braunfels officials. Upon transfer of ownership or maintenance responsibility: The seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-10623 change in responsibility for maintenance on permanent Best Management Practices and Measures". In addition, TCEQ and SAWS Resource Protection Division shall receive a signed, dated copy of this maintenance plan from the new owner.

To ensure Filterra is operating at the design flow rate of 140 inches/hr, the unit should be flow tested every three years by the project owner using a double-ring infiltrometer or other appropriate flow test method. Appropriate maintenance must be provided if the observed rate is less than 140 inches/hr. This might include replacement of the mulch or the surface soil layer. If this does not restore the unit to the design infiltration rate, all of the media may require replacement.

If standing water is observed for more than five to ten minutes within the system after a storm event or after a flow test, the Filterra system will also require investigation.
Trash, debris and mulch should be removed, and the mulch replaced. If this does not resolve the issue then the first few inches of media may need replacement to restore flow rates. Reduction in design flow rate may be caused by fine sediment accumulation from construction sediment, an oil or petroleum spill, grease from food fats, a blockage within or downstream of the discharge pipe, or simply a lack of maintenance for an extended period of time that has resulted in excessive sediment accumulation.

Serious oil, petroleum or hazardous substance spill, or other event that inundates the system beyond the ability to restore the design flow rate, will require removal and replacement of the media, mulch and plant. Media removal and replacement is normally performed with a vacuum truck. Only thoroughly tested. Quality controlled media from Americast (the parent company that developed Filterra) should be used as replacement media to ensure system water quality and flow rate performance. Americast should be contacted for replacement media. Americast, at an additional cost, can perform media replacement, or this can be contracted out.

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's entity having ownership or control of the property (such as without limitation, an owner's association, new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity assumes such obligation in writing or ownership is transferred.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Owner / Responsible Party:

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Email: Mitch.bramlitt@autozone.com

Signature of Owner/Responsible Party AGENT

01/06/16
Date

Operation & Maintenance (OM) Manual v01

filterra®

Bioretention Systems

CONTECH®
ENGINEERED SOLUTIONS

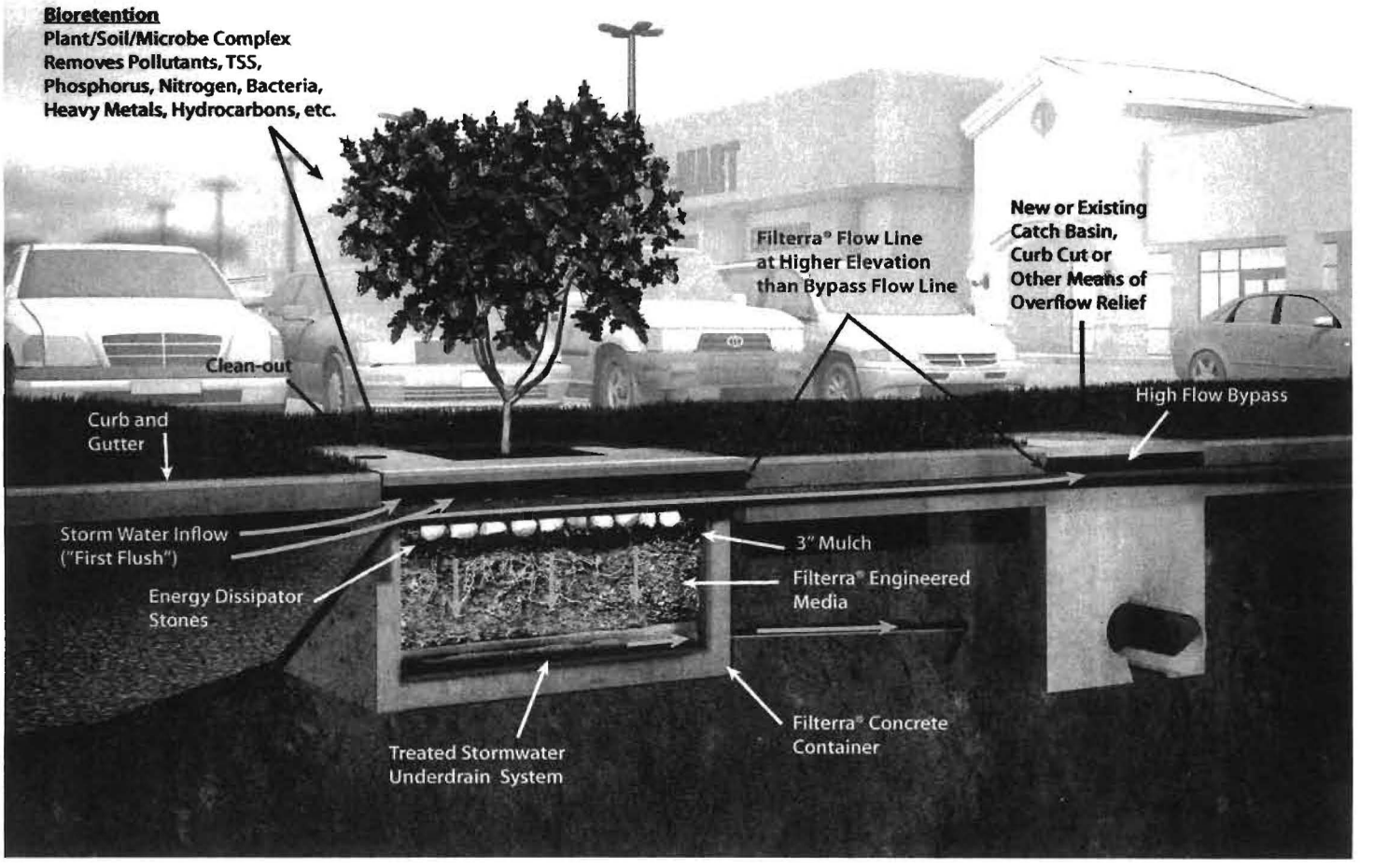
filterra®
Bioretention Systems

Table of Contents

CONTECH®
ENGINEERED SOLUTIONS

General Description

The following general specifications describe the general operations and maintenance requirements for the Contech Engineered Solutions LLC stormwater bioretention filtration system, the Filterra®. The system utilizes physical, chemical and biological mechanisms of a soil, plant and microbe complex to remove pollutants typically found in urban stormwater runoff. The treatment system is a fully equipped, pre-constructed drop-in place unit designed for applications in the urban landscape to treat contaminated runoff.



Stormwater flows through a specially designed filter media mixture contained in a landscaped concrete container. The mixture immobilizes pollutants which are then decomposed, volatilized and incorporated into the biomass of the Filterra® system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the treated water is discharged. Higher flows bypass the Filterra® to a downstream inlet or outfall. Maintenance is a simple, inexpensive and safe operation that does not require confined space access, pumping or vacuum equipment or specialized tools. Properly trained landscape personnel can effectively maintain Filterra® Stormwater systems by following instructions in this manual.

Basic Operations

Filterra® is a bioretention system in a concrete box. Contaminated stormwater runoff enters the filter box through the curb inlet spreading over the 3-inch layer of mulch on the surface of the filter media. As the water passes through the mulch layer, most of the larger sediment particles and heavy metals are removed through sedimentation and chemical reactions with the organic material in the mulch. Water passes through the soil media where the finer particles are removed and other chemical reactions take place to immobilize and capture pollutants in the soil media. The cleansed water passes into an underdrain and flows to a pipe system or other appropriate discharge point. Once the pollutants are in the soil, the bacteria begin to break down and metabolize the materials and the plants begin to uptake and metabolize the pollutants. Some pollutants such as heavy metals, which are chemically bound to organic particles in the mulch, are released over time as the organic matter decomposes to release the metals to the feeder roots of the plants and the cells of the bacteria in the soil where they remain and are recycled. Other pollutants such as phosphorus are chemically bound to the soil particles and released slowly back to the plants and bacteria and used in their metabolic processes. Nitrogen goes through a very complex variety of biochemical processes where it can ultimately end up in the plant/bacteria biomass, turned to nitrogen gas or dissolves back into the water column as nitrates depending on soil temperature, pH and the availability of oxygen. The pollutants ultimately are retained in the mulch, soil and biomass with some passing out of the system into the air or back into the water.

Design and Installation

Each project presents different scopes for the use of Filterra® systems. To ensure the safe and specified function of the stormwater BMP, Contech reviews each application before supply. Information and help may be provided to the design engineer during the planning process. Correct Filterra® box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra units as shown in approved plans. A comprehensive installation manual is available at www.conteches.com.

Maintenance

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement.

- Avoid legal challenges from your jurisdiction's maintenance enforcement program.
- Prolong the expected lifespan of your Filterra media.
- Avoid more costly media replacement.
- Help reduce pollutant loads leaving your property.

Simple maintenance of the Filterra® is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the throat. This may include trash, silt and leaves etc. which will be contained within the void below the top grate and above the mulch layer. Too much silt may inhibit the Filterra's® flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Contech includes a 1-year maintenance plan with each system purchase. Annual included maintenance consists of a maximum of two (2) scheduled visits. Additional maintenance may be necessary depending on sediment and trash loading (by Owner or at additional cost). The start of the maintenance plan begins when the system is activated for full operation. Full operation is defined as the unit installed, curb and gutter and transitions in place and activation (by Supplier) when mulch and plant are added and temporary throat protection removed.

Activation cannot be carried out until the site is fully stabilized (full landscaping, grass cover, final paving and street sweeping completed). Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency; e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the (maintenance) Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance to the Supplier (i.e. no pruning or fertilizing).

Exclusion of Services

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra® system.

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not covered under the Supplier maintenance contract. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra® (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra®. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra® and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation and pruning or replacement as necessary
6. Clean area around Filterra®
7. Complete paperwork

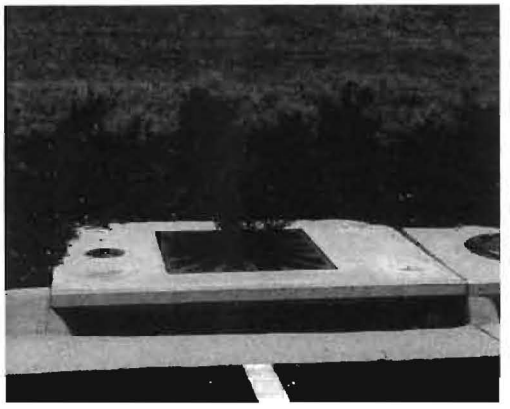
Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each unit size. Mulch should be a double shredded, hardwood variety; do not use colored or dyed mulch. Some visits may require additional Filterra® engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 3" (ft^3)	# of 2 ft^3 Mulch Bags
4	4	16	4	2
6	4	24	6	3
8	4	32	8	4
6	6	36	9	5
8	6	48	12	6
10	6	60	15	8
12	6	72	18	9
13	7	91	23	12

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.



1. Inspection of Filterra® and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:	
Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra® box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

Record on Maintenance Report the following:	
Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
# of Buckets Removed	_____

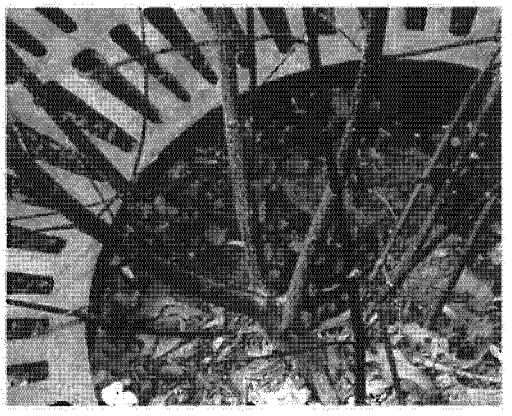
3. Removal of debris, trash and mulch

- After removal of mulch and debris, measure distance from the top of the Filterra® engineered media soil to the bottom of the top slab. If this distance is greater than 12", add Filterra® media (not top soil or other) to recharge to a 9" distance

Record on Maintenance Report the following:	
Distance of Bottom of Top Slab (inches)	_____
# of Buckets of Media Added	_____

4. Mulch replacement

- Please see mulch specifications.
- Add double shredded mulch evenly across the entire unit to a depth of 3".
- Ensure correct repositioning of erosion control stones by the Filterra® inlet to allow for entry of trash during a storm event.
- Replace Filterra® grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.



5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if dead.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____(ft)
Width at Widest Point	_____(ft)
Health	alive | dead
Damage to Plant	yes | no
Plant Replaced	yes | no

6. Clean area around Filterra®

- Clean area around unit and remove all refuse to be disposed of appropriately.

7. Complete paperwork

- Deliver Maintenance Report and photographs to appropriate location (normally Contech during maintenance contract period).
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

CONTECH®
ENGINEERED SOLUTIONS

Revised 6/22/2015

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT H

PILOT-SCALE FIELD TESTING PLAN

A pilot scale field testing plan is not required; the TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

AUTO ZONE #3679
Permanent Stormwater Section

ATTACHMENT I

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

The following measures will minimize or reduce the surface stream contamination.

1. The proposed permanent BMPs will minimize surface stream contamination by removing at least 80 percent of the increase in total suspended solids (TSS) generated with this project prior to discharge.

2. The development of the site increases the 25-yr storm water discharge from 7.6 cfs to 15.3 cfs. This increase does not adversely impact the overall drainage area and velocities of the runoff will be low enough to prevent any additional erosion or streambed scour. Refer to drainage areas A and B of the *Hydrologic Calculations Summary* in ATTACHMENT B of the WATER POLLUTION ABATEMENT PLAN APPLICATION and the *Drainage Map* in ATTACHMENT G of the TEMPORARY STORMWATER SECTION, included as part of this WPAP submittal.

3. The existing natural vegetative filter strips, and minimum 60' buffer for this project reduce the velocity of storm water runoff and maintain the sheet flow characteristic of the runoff.

4. The slow rate of discharge from the filtration structure in addition to the rock gabion outfalls reduces the velocity of runoff thus reducing erosion.

5. Temporary BMP's will be used to help minimize surface stream contamination during construction. Some of these practices include the use of temporary structures (silt fence, rock berm, etc...), regular inspection & maintenance, sequence of major activities, limiting soil disturbances, and maximizing the use natural vegetation. These are detailed further in TCEQ-602, Temporary Stormwater Section For Regulated Activities on the Edwards Aquifer Recharge Zone, included as part of this WPAP submittal.

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

I Edward Badouh, III,
Print Name

Owner,
Title - Owner/President/Other

of New Braunfels Investment Joint Venture,
Corporation/Partnership/Entity Name

have authorized Coursen-Koehler Engineering & Associates
Print Name of Agent/Engineer

of Coursen-Koehler Engineering & Associates
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:

Edward Baloch III
Applicant's Signature

12.17.15
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Edward Baloch III 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 17th day of Dec., 2015.

REBECCA L HILL
NOTARY PUBLIC STATE OF TEXAS
MY COMMISSION EXPIRES
MARCH 28, 2016

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: _____

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: AutoZone #3679
Regulated Entity Location: Northwest corner of HW 46 and Oak Spawl
Name of Customer: New Braunfels Investment Joint Venture
Contact Person: Edward Badouh, III Phone: 830-609-0630
Customer Reference Number (if issued):CN 602512097
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

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

☐ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1.539 Acres	$ 4,000.00
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: Edward Badouh Date: 12/17/15

TCEQ-0574 (Rev. 02-24-15)

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

AutoZone

D1

Check Date: 10/07/15		Vendor Number: 871418			Check No: 841859		
Invoice Number	**Name**	**SSN#**	**Invoice Date**	**Voucher ID**	**Gross Amount**	**Discount Taken**	**Paid Amount**
12715			10/06/15	01747869	4,000.00	0.00	4,000.00

Check Number	Total Paid Amount
841859	$4,000.00

AutoZone

P.O. BOX 2198
MEMPHIS, TN 38101
901 495-7031

First Tennessee Bank
165 Madison Avenue
Memphis TN 38103

841859

Date 10/07/15
MMDDYY

Pay ****FOUR THOUSAND AND 00/100 DOLLAR $ *** 4,000.00

To The Order Of TCEQ/TEXAS COMMISSION ON
CASHIER'S OFFICE MC-214
P.O. BOX 13088
AUSTIN TX 78711-3088

VOID AFTER 180 DAYS

⑈841859⑈ ⑆064204347⑆ ⑈1836793 22⑈

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

☒ 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 602512097		RN 108955014

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: e.g.: Doe, John) | If new Customer, enter previous Customer below:

New Braunfels Investment Joint Venture

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
		742365076	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☒ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ 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 ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address: 2501 Oak Run Pkwy

City	New Braunfels	State	Tx	ZIP	78132	ZIP + 4	3847

16. Country Mailing Information (if outside USA)	17. E-Mail Address (if applicable)
	bobadouh@gmail.com

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(830) 609 - 0630		(830) 609 - 0480

SECTION III: Regulated Entity Information

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

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

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

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

Auto Zone #3679

23. Street Address of the Regulated Entity: (No PO Boxes)	Tx 46							
	City	New Braunfels	State	Tx	ZIP	78132	ZIP + 4	
24. County	Comal County							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Northwest corner of HW 46 and Oak Sprawl				
26. Nearest City			State	Nearest ZIP Code	
New Braunfels			Tx	78132	
27. Latitude (N) In Decimal:	29.719300		28. Longitude (W) In Decimal:	98.162733	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	43	9.48	98	9	45.8388

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)
5531		44131	441310

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

Auto parts retail store

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	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	41. Title:		
Robert R. Delgado, P.E.	Project Manager		
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 853 - 0307		(210) 855 - 5530	bdelgado@ckcivil.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:	New Braunfels Investment Joint Venture	Job Title:	VP
Name(*In Print*):	~~Edward Badouh, III~~ Rebecca L. Hill	Phone:	(830) 609-630
Signature:		Date:	1/13/16