TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 25, 2013

Mr. Eric Pipken
New Braunfels Christian Academy
220 FM 1863
New Braunfels, Texas 78132

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: New Braunfels Christian Academy; Located at 995 Mission Hills Drive; New Braunfels, Texas

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

Edwards Aquifer Protection Program ID No. and Regulated Entity No. RN104634530; Investigation No. 1114715; Additional ID No. 13-13081403

Dear Mr. Pipken:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of New Braunfels Christian Academy on August 14, 2013. Final review of the WPAP was completed after additional material was received on September 25 and 30, 2013. 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.*

BACKGROUND

A WPAP was approved by the TCEQ on June 9, 2006 for the construction of a temporary middle school, temporary high school, gymnasium, football field, roadways, driveway, and parking lots.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 12.17 acres. It will include the reconfiguration of the previously approved gymnasium building and construction of an all natural grass sports field. The impervious cover will be 4.39 acres (36.07 percent). Project wastewater will be disposed of by conveyance to the existing Gruene Wastewater Treatment Plant 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 irrigation/retention basin and existing vegetative filter strips, 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 3,582.24 pounds of TSS generated from the 4.39 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project. The table provided below provides the characteristics of the drainage areas with impervious cover and the Permanent Best Management Practices (PBMP).

Drainage Area	Total Area (ac)	Impervious Cover (ac)	PBMP	TSS Generated (lbs)	TSS Removed (lbs)
A	5.95	3.03	Retention/ Irrigation	2,472.48	2,529.60
B	0.11	0.11	VFS	89.76	89.76
Uncaptured 1	0.02	0.02	Uncaptured	16.32	-
Uncaptured 2	0.05	0.05	Uncaptured	40.80	-
A'	-	1.18	VFS (appvd 2006)	962.88	962.88
Totals	-	4.39	-	3,582.24	3,582.24

GEOLOGY

According to the geologic assessment included with the application, the project site is in the cyclic and marine member of the Person Formation. The San Antonio Regional Office site assessment conducted on September 23, 2013 revealed that there were three geologic features (one closed depression and two solution cavities) and one manmade feature (septic tanks). None of the features were rated as sensitive. The site was found to be 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 June 9, 2006.

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

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

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. 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. Michael Isley of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4057.

Sincerely,

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

LMB/MI/eg

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

cc: Mr. Song Tan, P.E., Pape-Dawson Engineers, Inc.
Mr. Thomas Hornseth, P.E., Comal County Engineer
Mr. James Klein, P.E., City of New Braunfels
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 15, 2013

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: New Braunfels Christian Academy, located at 995 Mission Hills Drive, New Braunfels, Texas

PLAN TYPE: Application for Approval of a Water Pollution Plan (WPAP) 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No. and Regulated Entity No.: RN104634530

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.

Please forward your comments to this office by September 15, 2013.

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

for Todd Jones
Water Section Work Leader
San Antonio Regional Office

TJ/eg

PAPE-DAWSON ENGINEERS

NEW BRAUNFELS CHRISTIAN ACADEMY

Water Pollution Abatement Plan Modification

August 2013

NEW BRAUNFELS CHRISTIAN ACADEMY

Water Pollution Abatement Plan Modification

August 2013

Texas Board of Professional Engineers, Firm Registration # 470

PAPE-DAWSON ENGINEERS

PAPE-DAWSON ENGINEERS

LAND DEVELOPMENT ENVIRONMENTAL TRANSPORTATION WATER RESOURCES SURVEYING

August 9, 2013

Mr. Joel Anderson
Texas Commission on Environmental Quality (TCEQ)
Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

Re: New Braunfels Christian Academy
Water Pollution Abatement Plan Modification

Dear Mr. Anderson:

Please find attached one (1) original and four (4) copies of the New Braunfels Christian Academy Water Pollution Abatement Plan Modification. This Water Pollution Abatement Plan Modification has been prepared to be consistent with the regulations of the Texas Commission on Environmental Quality (30 TAC 213) and current policies for development over the Edwards Aquifer Recharge Zone.

This Water Pollution Abatement Plan Modification applies to an approximate 12.17-acre site identified as the limits of the project. Please review the plan information for the items it is intended to address, and, if acceptable, provide a written approval of the plan in order that construction may begin at the earliest opportunity.

Appropriate review fees ($6,500) and fee application are included. If you have questions regarding this information, please call our office.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.
Vice President

Attachments

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General Information Form
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

REGULATED ENTITY NAME: ***New Braunfels Christian Academy***

COUNTY: ***Comal*** STREAM BASIN: ***Blieders Creek***

EDWARDS AQUIFER: √ RECHARGE ZONE
___ TRANSITION ZONE

PLAN TYPE: √ WPAP ___ AST ___ EXCEPTION
___ SCS ___ UST √ MODIFICATION

RECEIVED
AUG 19 2013
COUNTY ENGINEER

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: ***Eric Pipken***
Entity: ***New Braunfels Christian Academy, Inc.***
Mailing Address: ***220 FM 1863***
City, State: ***New Braunfels, Texas*** Zip: ***78132***
Telephone: ***(830) 629-1821*** FAX: ***(830) 629-1880***

Agent/Representative (If any):

Contact Person: ***Song L. Tan, P.E.***
Entity: ***Pape-Dawson Engineers, Inc.***
Mailing Address: ***555 E. Ramsey***
City, State: ***San Antonio, Texas*** Zip: ***78216***
Telephone: ***(210) 375-9000*** FAX: ***(210) 375-9010***

2. √ This project is inside the city limits of ***New Braunfels***.
___ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
___ This project is not located within any city's limits or ETJ.

3. 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.

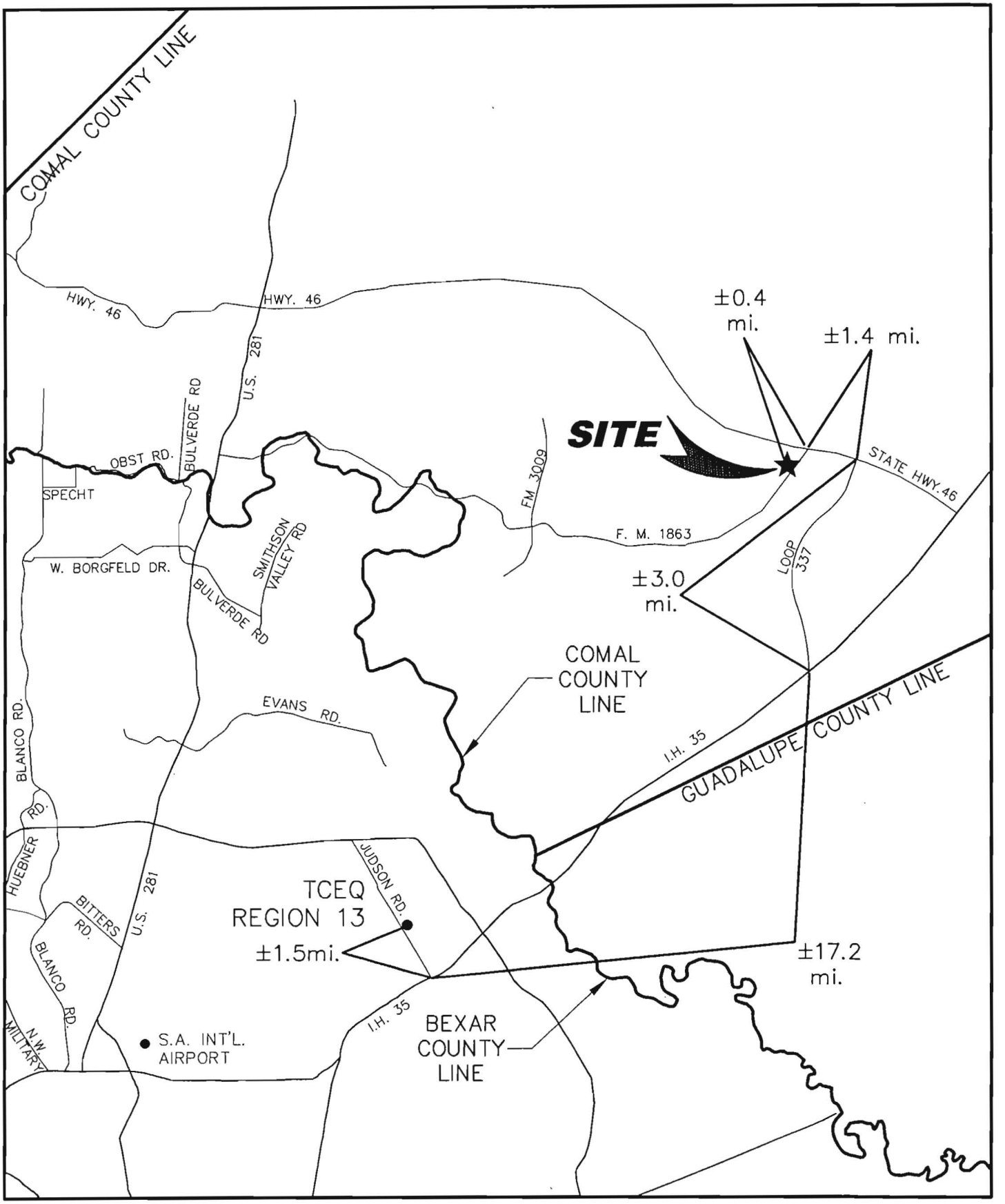
From TCEQ's Regional Office, head south on Judson Road approximately 1.5 miles to the IH-35 frontage road. Turn left and merge onto northbound IH-35. Continue along IH-35 for approximately 17.2 miles and then exit toward TX 337 Loop. Turn left onto TX 337 Loop and proceed north for approximately 3.0 miles. Next, take the TX-46 West ramp to Boerne/New Braunfels. Turn left onto TX-46, proceed 1.4 miles and turn left onto FM 1863, The site will be located on the right, approximately 0.4 miles down.

4. √ **ATTACHMENT A - ROAD MAP**. A road map showing directions to and the location of the project site is attached ~~at the end of this form~~ ***behind this sheet***.

NEW BRAUNFELS CHRISTIAN ACADEMY
New Braunfels, Texas

Water Pollution Abatement Plan Modification

NOT TO SCALE



ATTACHMENT A
Road Map

Pape-Dawson Engineers, Inc.

Date: Aug 07, 2013, 4:53pm User ID: ROlivarez
File: P:\63\38\02\Design\Environmental\WPAP\RM633802.dwg

5. √ **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 behind this sheet. The map(s) should clearly show:
   - √ Project site.
   - √ USGS Quadrangle Name(s).
   - √ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
   - √ Drainage path from the project to the boundary of the Recharge Zone.

6. √ 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. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. √ **ATTACHMENT C - PROJECT DESCRIPTION.** ~~Attached at the end of this form~~ ***Provided below*** is a detailed narrative description of the proposed project.

New Braunfels Christian Academy is an existing school located at 220 FM 1863, within the city limits of New Braunfels. The project site is located in Comal County, Texas and is situated entirely over the Edwards Aquifer Recharge Zone.

A Water Pollution Abatement Plan (WPAP) for the site titled "New Braunfels Christian Academy" was approved by the Texas Commission on Environmental Quality (TCEQ) on June 9, 2006 (RN104634530; EAPP File No. 2347.02). The original WPAP permitted construction of approximately 4.09 acres of impervious cover for Phase 1 of a two-phase development, or 15.5% of a 27.17-acre site. Fifteen-foot (15') wide Engineered Vegetative Filter Strips (VFS) were approved as Permanent Best Management Practices (PBMPs) for the site to treat driveways, parking and sidewalks. A variant of the 20% or less impervious cover exception request was approved by the TCEQ on July 13, 2005 (EAPP File No. 2347.00), prior to WPAP submittal, and which waived the requirement for treatment of impervious cover from school buildings.

This WPAP Modification (MOD) proposes reconfiguration of the previously approved gymnasium building which was never built, construction of a natural grass sports field, and provides Total Suspended Solids (TSS) treatment/removal for all impervious cover constructed on approximately 12.17 acres. Construction activities proposed with this MOD include clearing, grading, excavation, drainage improvements, a sports field, gym building, and construction of one (1) retention basin and installation of the associated irrigation system. Approximately 4.39 acres of impervious cover are proposed, or 36.07% of the 12.17-acre project limits. Approximately 0.18 acres of the overall 12.17-acre WPAP MOD project limits consist of a twenty-foot (20') dedicated fill easement (0.08 acres) and area within the public right-of-way (0.10 acres). An agent authorization form has been provided with this application for owner of the fill easement property. The approximately 15-acres remaining of the original 27.17-acre project limits has changed property ownership since the 2006 WPAP approval, and future development of this area will require TCEQ submittal of its own WPAP MOD.

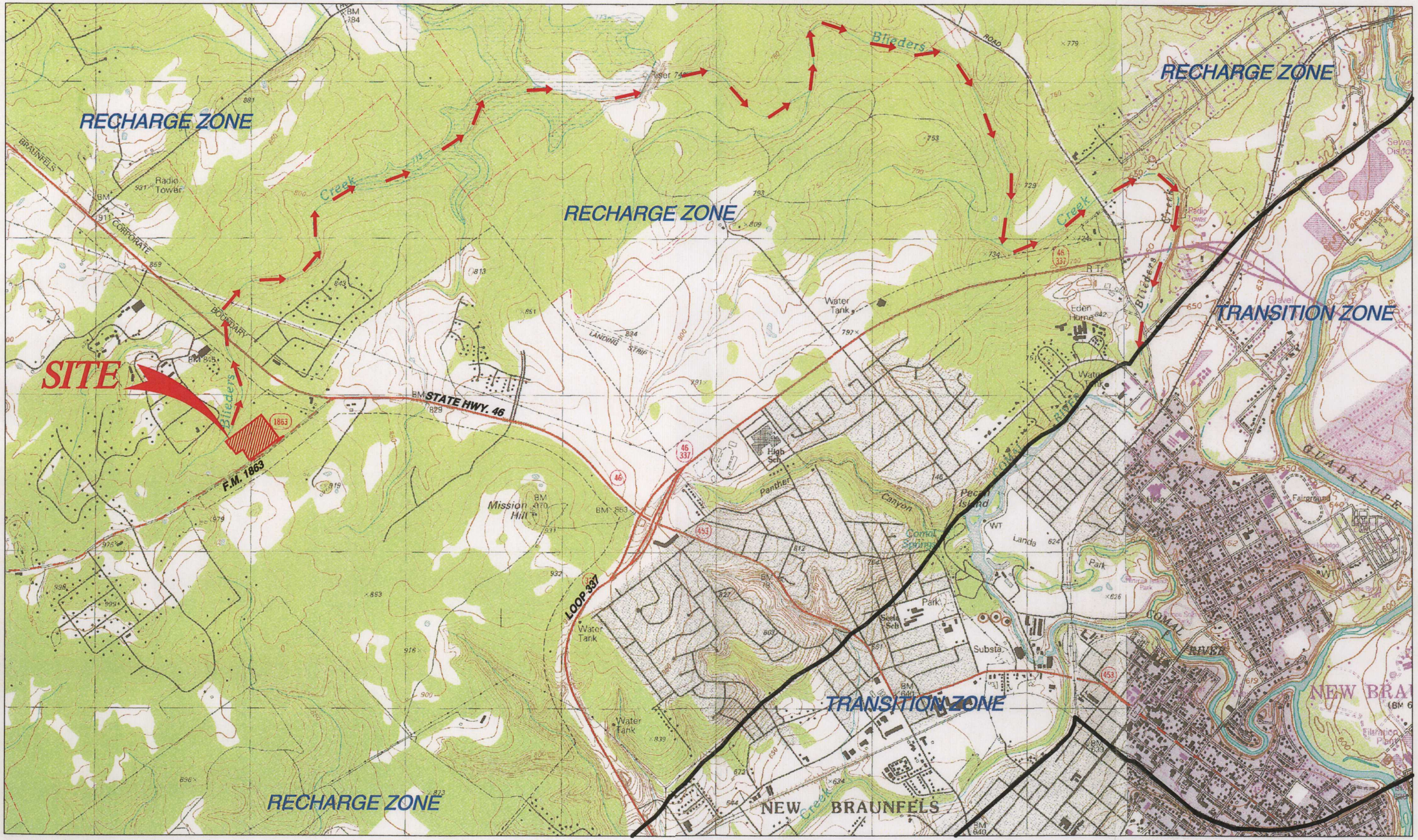
One (1) proposed retention basin/irrigation system and existing fifteen-foot (15') Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best

NEW BRAUNFELS CHRISTIAN ACADEMY
New Braunfels, Texas

Water Pollution Abatement Plan Modification

N

SCALE: 1" = 2000'



Date: Aug 07, 2013, 4:54pm User ID: ROlivarez
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NEW BRAUNFELS WEST, TEXAS QUADRANGLE
NEW BRAUNFELS EAST, TEXAS QUADRANGLE
DRAINAGE FLOW → →

Pape-Dawson Engineers, Inc.

USGS/EDWARDS RECHARGE ZONE MAP

ATTACHMENT B

Management Practices (PBMPs) for this site. Runoff from approximately 0.07 acres of impervious cover contributed by uncaptured portions of two (2) entrance drives and a deceleration lane off of F.M. 1863 will be "overtreated" for in the proposed retention basin. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

This school site generates approximately 7,500 gallons per day (gpd) of peak wastewater flow. Wastewater service for the area is provided by New Braunfels Utilities (NBU) with conveyance to the existing Gruene Wastewater Treatment Plant. Potable water service is also provided by NBU.

8. 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: ***Existing school site***

PROHIBITED ACTIVITIES

9. _√_ 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).

10. ***N/A*** 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

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

   _√_ For a Water Pollution Abatement Plan and Modifications, the total acreage of the site

where regulated activities will occur.

___ For an Organized Sewage Collection System Plans and Modifications, the total linear footage of all collection system lines.

___ For a UST Facility Plan or an AST Facility Plan, 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.

12. 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)

13. _√_ 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.

14. _√_ 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.

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:

Pape-Dawson Engineers, Inc.

Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.

Print Name of ~~Customer~~/Agent

Signature of ~~Customer~~/Agent

8/9/13

Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Geologic Site Assessment (WPAP)

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

New Braunfels Christian Academy
12.17 Acres
New Braunfels, Texas

FROST GEOSCIENCES CONTROL # FGS-E13192

July 31, 2013

Prepared exclusively for

Pape-Dawson Engineers, Inc.
555 East Ramsey
San Antonio, Texas 78216

Frost GeoSciences
Geotechnical ▪ Construction Materials
Forensics ▪ Environmental

13402 Western Oak • Helotes, Texas 78023 • Phone: (210) 372-1315 • Fax: (210) 372-1318

Frost GeoSciences
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SDVOSB VBE DIBE SBE
TBPE Firm Registration # F-9227
TBPG Firm Registration # 50040

July 31, 2013

Pape Dawson Engineers, Inc.
555 East Ramsey
San Antonio, Texas 78216

Attn: Mr. Frank Corey, P.E.

Re: Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
New Braunfels Christian Academy
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-EI3192

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: (6) Pape-Dawson Engineers, Inc.

Table of Contents

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

REGULATED ENTITY NAME: New Braunfels Christian Academy

TYPE OF PROJECT: ✓ WPAP __ AST __ SCS __ UST

LOCATION OF PROJECT: ✓ Recharge Zone __ Transition Zone __ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. ✓ Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.

2. 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.

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Rumple-Comfort Association	D	1 to 2

* 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.

3. ✓ A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. ✓ A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. ✓ Appropriate **SITE GEOLOGIC MAP(S)** are attached:

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" = 40 '
Site Geologic Map Scale	1" = 40 '
Site Soils Map Scale (if more than 1 soil type)	1" = 500 '

6. Method of collecting positional data:

✓ Global Positioning System (GPS) technology.
✓ Other method(s). 2012 Aerial Photograph

7. ✓ The project site is shown and labeled on the Site Geologic Map.

8. ✓ Surface geologic units are shown and labeled on the Site Geologic Map.

9 ✓ 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.

10. ✓ The Recharge Zone boundary is shown and labeled, if appropriate.

11. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, 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 Chapter 76.
✓ There are no wells or test holes of any kind known to exist on the project site.

ADMINISTRATIVE INFORMATION

12. ✓ 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.

Date(s) Geologic Assessment was performed: July 22, 2013
Date(s)

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.

Steve Frost, C.P.G., P.G.
Print Name of Geologist

(210) 372-1315
Telephone

(210) 372-1318
Fax

Signature of Geologist

July 31, 2013
Date

Representing: Frost GeoSciences, Inc.
(Name of Company)

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

TCEQ-0585 (Rev. 10-01-10)

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 Cibolo 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: The New Braunfels Christian Academy - 12.17 Acres FGS-13192

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B*	1C*	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-7	N29° 43.183'	W98° 10.997'	SC	20	Kep	0.8	0.8	1.5	-	-	-	-	O	15	35	35		Yes		Hillside
S-8	N29° 43.084'	W98° 11.012'	SC	20	Kep	0.8	0.8	1.5	-	-	-	-	O	15	35	35		Yes		Hillside
S-101	N29° 43.167'	W98° 11.034'	CD	5	Kep	10	10	?	-	-	-	-	C	10	15	15		Yes		Hillside
S-102	N29° 43.177'	W98° 10.973'	MB	30	Kep	5.0	10.0	?	-	-	-	-	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 _____ Date July 31, 2013 Sheet 1 of 1

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

TCEQ-0592 Table (Rev. 5-1-04)

LOCATION

The project site consists of 12.17 acres of partially developed land located at 220 F.M. 1863 in New Braunfels, Texas. The site is currently operating as the New Braunfels Christian Academy. 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 1973 aerial photograph at a scale of 1"=500', a geologic map, a 2012 aerial photograph at a scale of 1"=500', and a 2012 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., 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, EGS-05196 dated May 19, 2005, 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 New Braunfels, 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 2012 aerial photograph, in conjunction with a hand held Garmin 72H Global Positioning System with an Estimated Potential Error ranging from 7 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 2012 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 (Rev. 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 1-4 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 ranges from 870 in the western property corner to 895 feet near the southern property corner of the site. These elevations are calculated above mean sea level (AMSL). Overall, the surface runoff from the project site flows to the north into Blieders Creek. State Highway 46 is located north and 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 (1996), the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of the Official Edwards Aquifer Recharge Zone Map, New Braunfels West, Texas Sheet (1996), 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 6 in Appendix A.

The Rumple-Comfort Association 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.

scored a 15 on the sensitivity scale, column 10 in the Geologic Assessment Table on page 4 of this report. FGS is of the opinion that these are not sensitive features.

Potential Recharge Feature # S-102 consists of a set of septic treatment tanks. Frost GeoSciences, Inc., rates the relative infiltration of this feature as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). These features scored a 35 on the sensitivity scale, column 10 in the Geologic Assessment Table on page 4 of this report.

The majority of the project site is covered by a sparse stand of vegetative cover. A small area of moderate to dense vegetative cover was noted in the western corner of the project site. The overall vegetative cover on the project site consists of Ashe juniper (*Juniperus ashei*), Live Oak (*Quercus virginiana*) and Texas Persimmon (*Diospyros texana*) with Hackberry (*Celtis sp.*), prickly pear cactus, and a sparse to moderate stand of native grasses. The variations in the vegetative cover across the project site are visible in the 2012 aerial photographs on Plates 8 and 9 in Appendix A and in the site visit photographs included in Appendix B.

According to the USGS 7.5 Minute Quadrangle Map, New Braunfels West, Texas Sheet (1988), the elevation of the project site ranges from 870 feet to near 895 feet. These elevations are calculated above mean sea level (AMSL). According to topographic data obtained from Pape-Dawson Engineers, Inc., the elevations on the project site ranges from 865 feet in the western corner of the site to 890 feet at the southern 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 United States Geological Survey, Water Resources Investigation # 94-4117 (1994), the project site is located on the Cyclic & 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 United States Geological Survey, Water Resources Investigation # 94-4117 (1994), indicating the location of the project site, is included on Plate 7 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 construction personnel be informed 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 New Braunfels Christian Academy and Pape-Dawson Engineers, Inc. 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 (1996).

3) Stein, W.G. and Ozuna, G.B., 1995, 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.

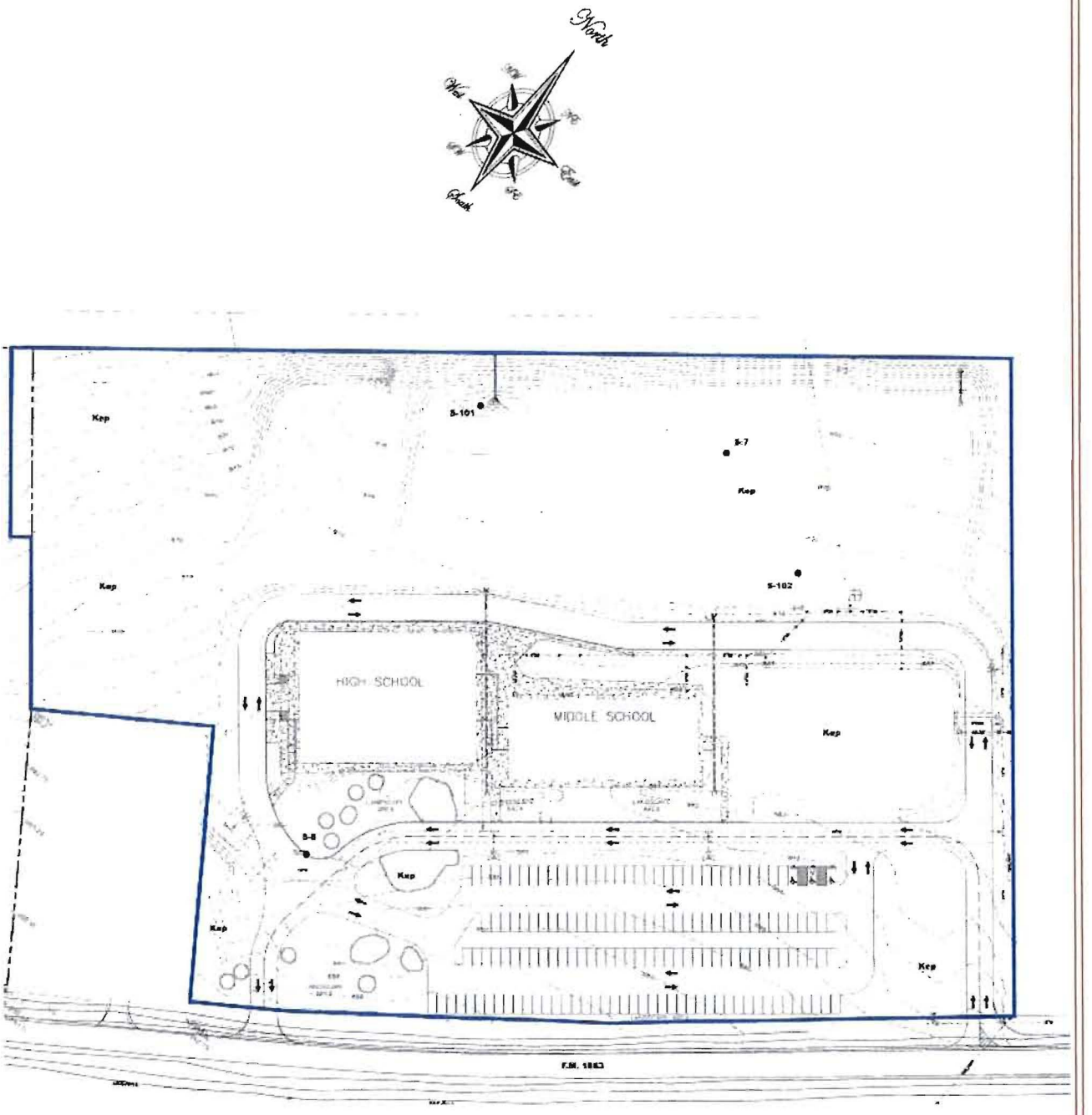
7) USDA Soil Conservation Service, Soil Survey of Comal & Hays Counties, Texas (1982).

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

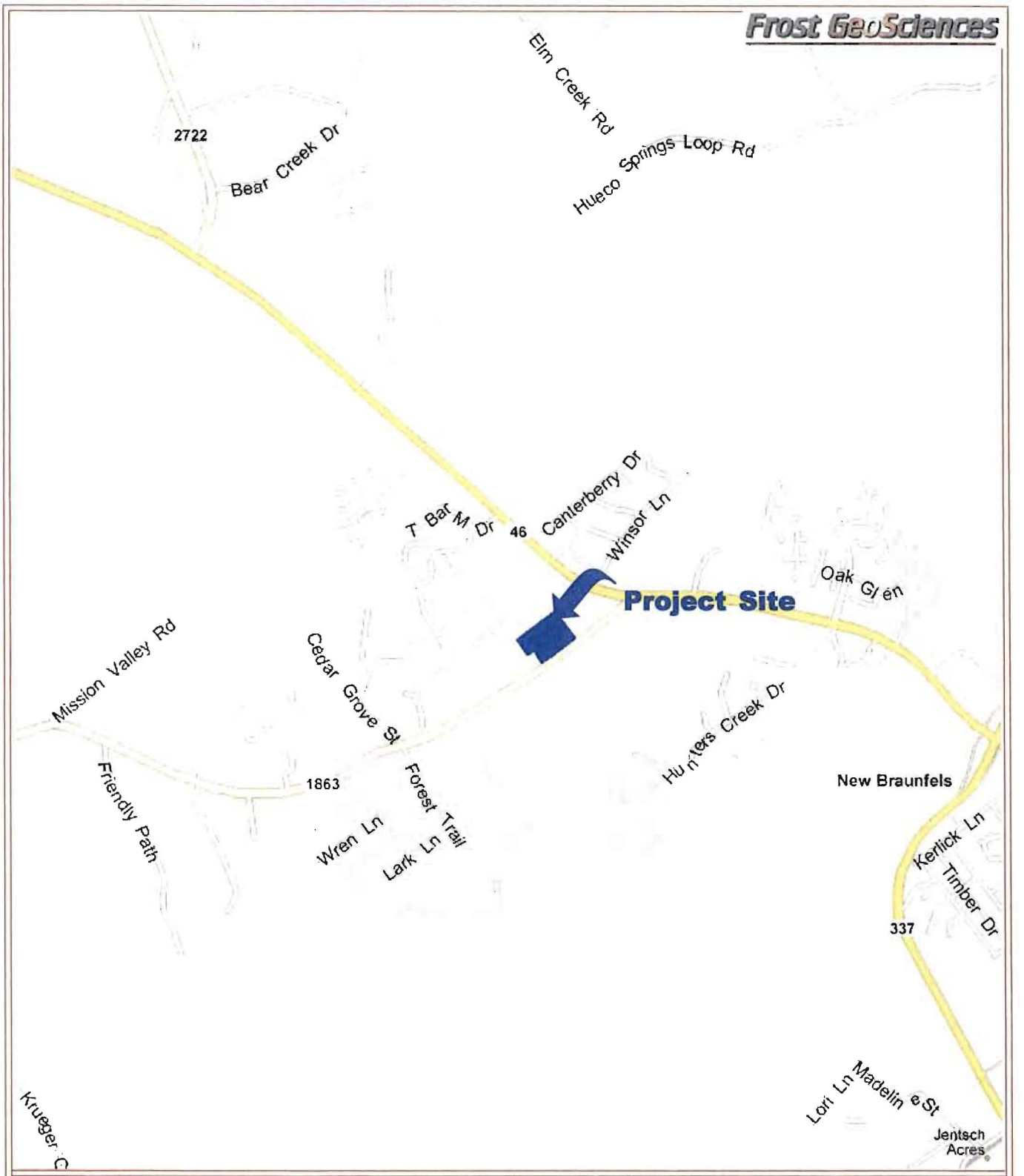
Appendix A

Site Location Plates

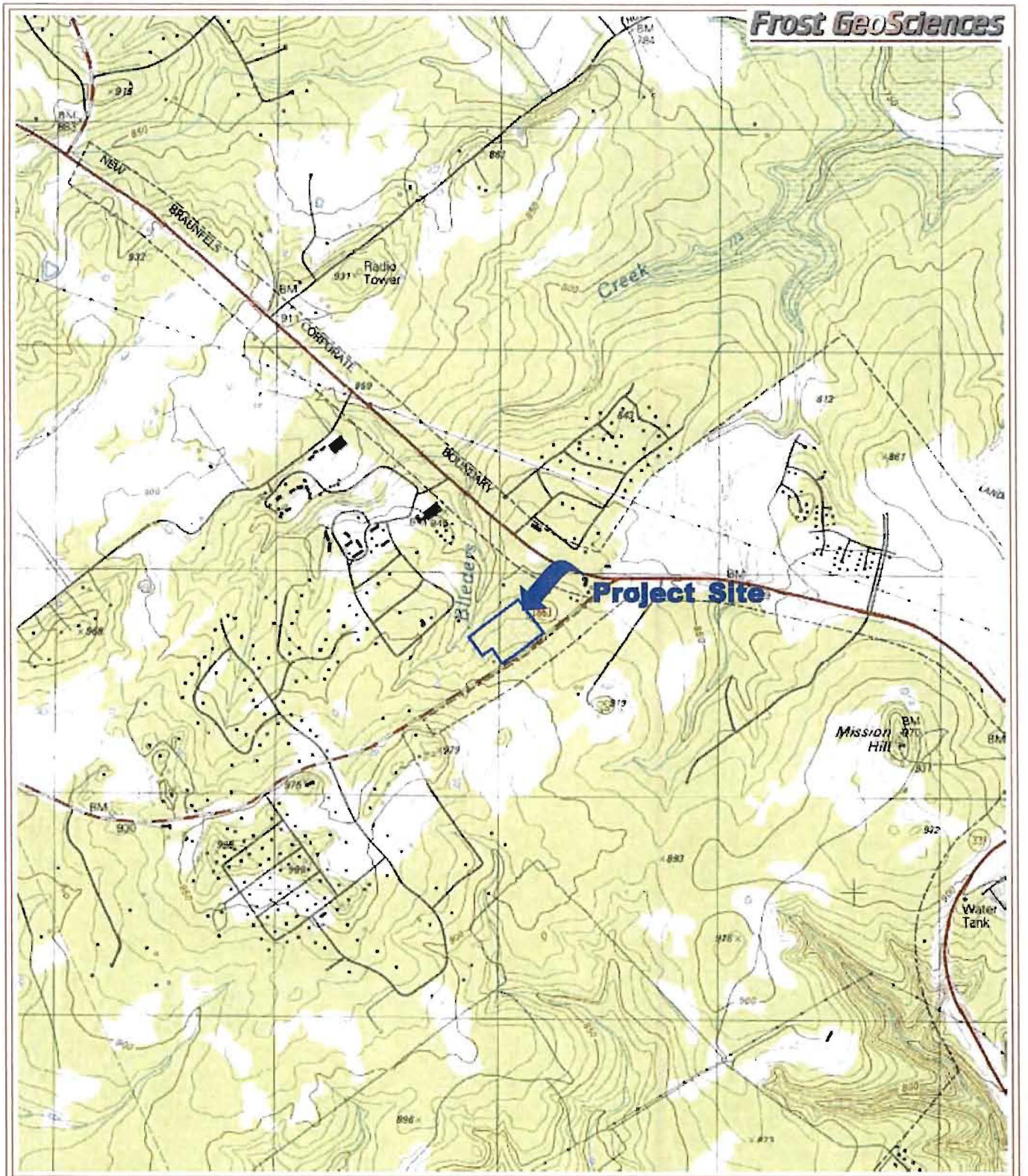
Frost GeoSciences



PROJECT NAME:	Site Plan	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone New Braunfels Christian Academy New Braunfels, Texas	PROJECT NO.: FGS-E13192	DATE: July 31, 2013



PROJECT NAME:	Street Map	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone New Braunfels Christian Academy New Braunfels, Texas	PROJECT NO.: FGS-E13192	DATE: July 31, 2013

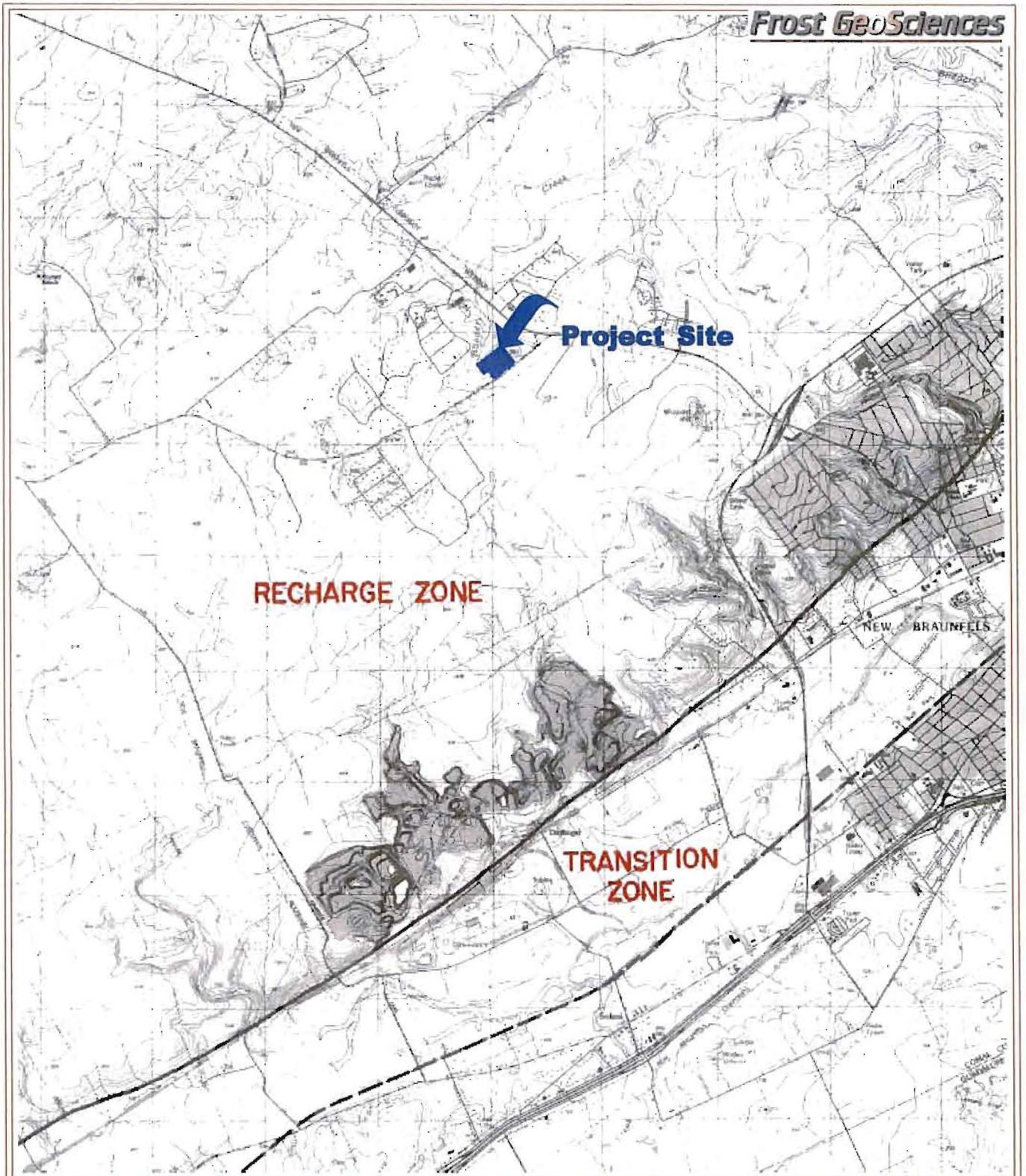


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
New Braunfels Christian Academy
New Braunfels, Texas

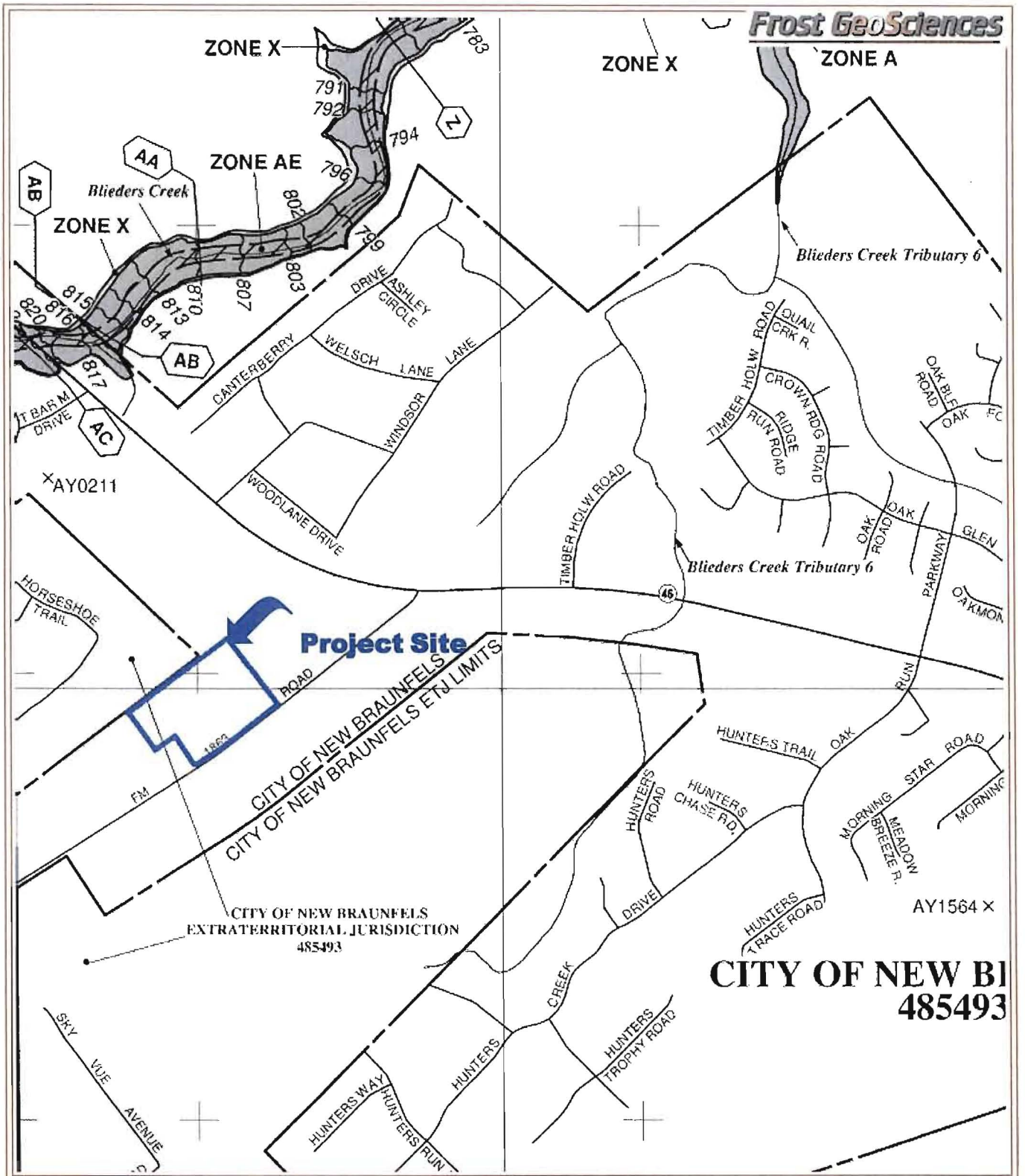
U.S.G.S. 7.5 Minute Quadrangle Map
New Braunfels West, Texas Sheet (1988)

PROJECT NO.:	DATE:
FGS-E13192	July 31, 2013

Frost GeoSciences



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone New Braunfels Christian Academy New Braunfels, Texas	Official Edwards Aquifer Recharge Zone Map New Braunfels West, Texas Sheet (1996)
PROJECT NO.: FGS-E13192	**DATE:** July 31, 2013



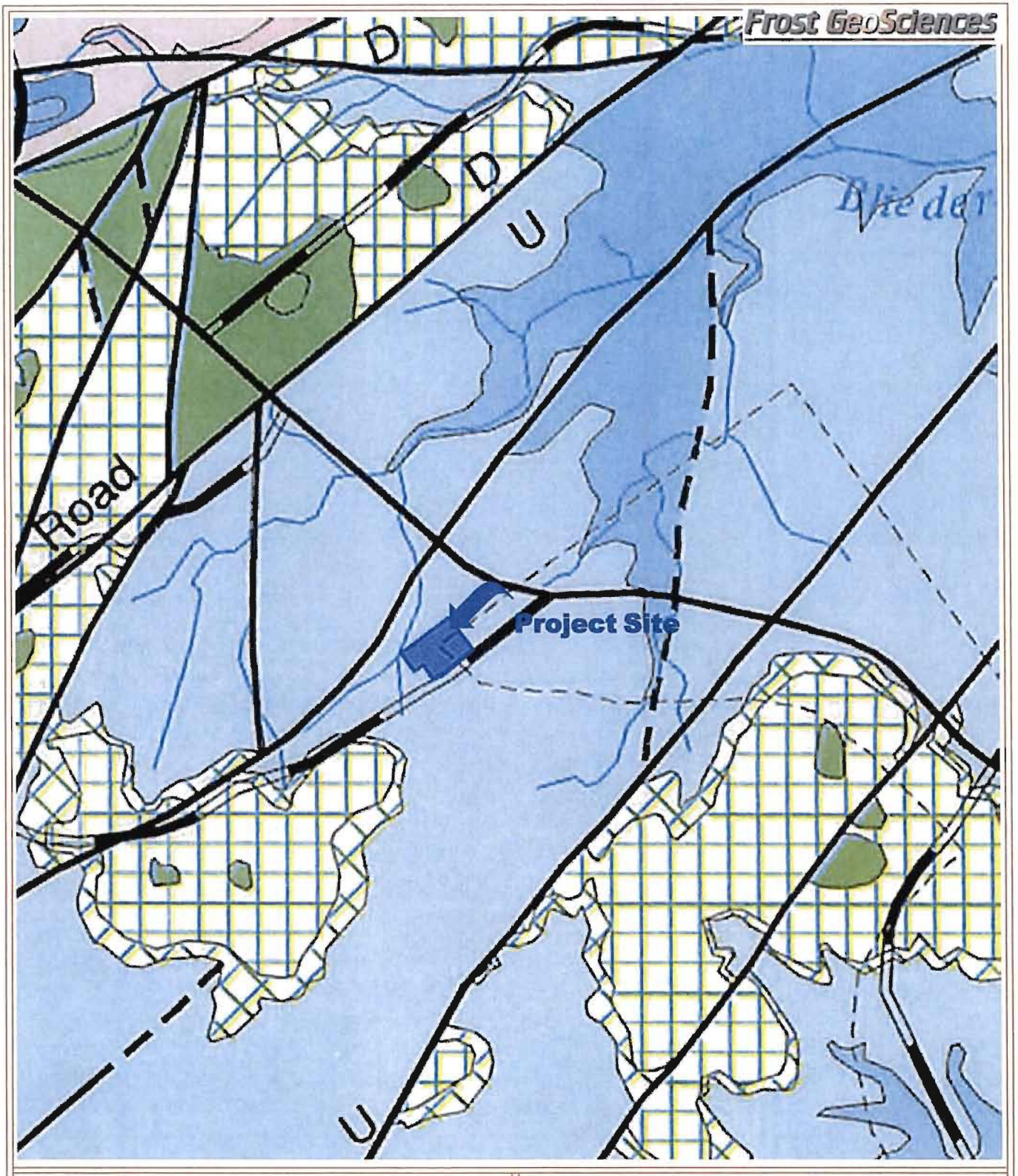
PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone New Braunfels Christian Academy New Braunfels, Texas	Flood Insurance Rate Map (FIRM) Community Panel # 48091C0435F (Revised 9/02/09)
PROJECT NO.: FGS-E13192	**DATE:** July 31, 2013

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

1973 Aerial Photograph
United States Department of Agriculture

PROJECT NO.: FGS-E13192

DATE: July 31, 2013



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 New Braunfels Christian Academy New Braunfels, Texas	PROJECT NO.: FGS-E13192	DATE: July 31, 2013

Frost GeoSciences

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

2012 Aerial Photograph
National Agricultural Imagery Program

PROJECT NO.:	DATE:
FGS-E13192	July 31, 2013

Frost GeoSciences

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

2012 Aerial Photograph with PRF's

National Agricultural Imagery Program

PROJECT NO.:	DATE:
FGS-E13192	July 31, 2013

Appendix B

Site Inspection Photographs

View to the northeast, of the project site along the southeastern property line.

View to the southwest, of the project site along the southeastern property line.

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

View to the northeast, of the project site from the southern property corner.

View of the front of the High School & Middle School Buildings.

View of the detention basin located behind the school buildings.

View of vegetative cover noted in the western portion of the project site.

View of vegetative cover noted in the western portion of the project site.

View of vegetative cover noted in the western portion of the project site.

View of vegetative cover noted in the western portion of the project site.

View of Potential Recharge Feature # S-101, located within the detention basin.

View of one of the three void openings noted as part of PRF # S-101.

View of one of the three void openings noted as part of PRF # S-101.

View of one of the three void openings noted as part of PRF # S-101.

View to the northeast, of the project site along the northwestern property line.

View to the southwest, of the project site along the northwestern property line.

View of the baseball diamond within the detention basin.

View of the area near PRF # S-7.

View of Potential Recharge Feature # S-102, a septic tank and pump station.

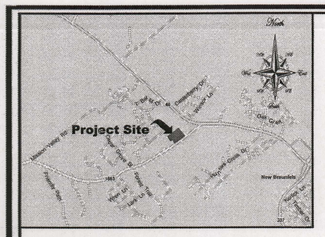
View to the southeast, of the project site along the northeastern property line.

Typical view of the central portion of the project site.

View of the area near PRF # S-8.

Appendix C

Site Geologic Map

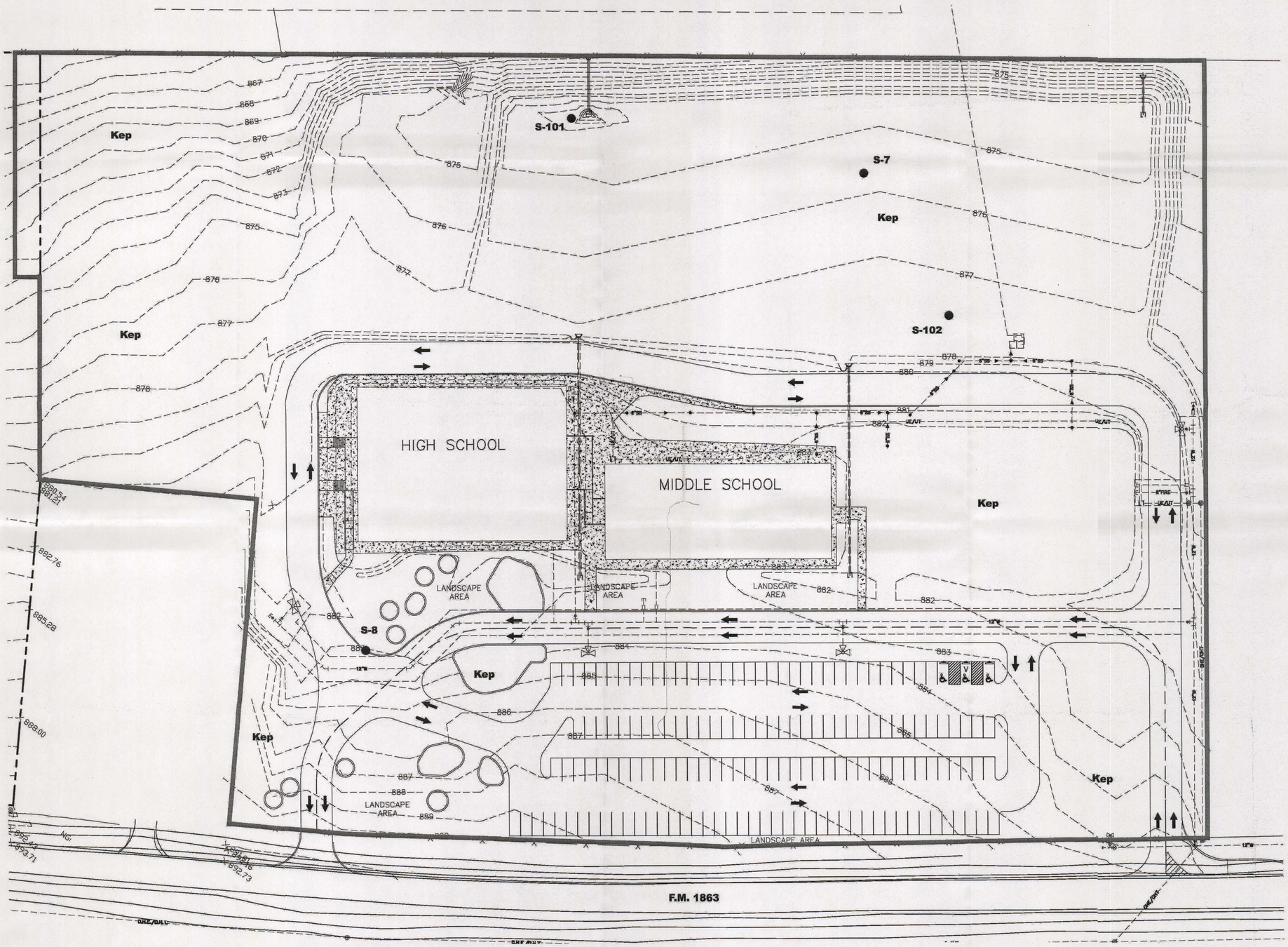


Location Map

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

8/6/13

Signature of Texas Licensed Geoscientist
Steve Frost, TPG# 315, AIPG # 10176



Frost GeoSciences

Geotechnical • Construction Materials
Environmental & Geologic Consulting
SDVOSB • VBE • DIBE • SBE
13402 Western Oak Dr. • Helotes, Texas 78023
Phone: 210-372-1315 • Fax 210-372-1318

Site Geologic Map

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
for the
New Braunfels Christian Academy
12.17 Acres
New Braunfels, Texas

Frost GeoSciences, Inc. Control # FGS-E13192

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
- 100-Year Floodplain - Zone A
- 100-Year Floodplain - Zone AE
- Other Flood Hazard Area - Zone X (shaded)

Floodplain Information Obtained From
FIRM: Flood Insurance Rate Map
Comal County, Texas: Panel # 48091C0435, 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)

TCEQ-R13
AUG 14 2013
SAN ANTONIO

Graphic Scale
40 0 20 40 80
(In Feet)

1 inch = 40 feet
Representative Fraction 1:480

Contour Interval - 1 foot

Water Pollution Abatement Plan Application
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b), Effective June 1, 1999

REGULATED ENTITY NAME: ***New Braunfels Christian Academy***

REGULATED ENTITY INFORMATION

1. The type of project is:
   ___ Residential: # of Lots: _____
   ___ Residential: # of Living Unit Equivalents: _____
   ___ Commercial
   ___ Industrial
   _√_ Other: ***Existing school site***

2. Total site acreage (size of property): ***12.17****
   ****This modification is intended to address improvements within an approximately 12.17-acre project limits. 27.17 acres is the limits of the overall site as approved in the 2006 WPAP.***

3. Projected population: ***0****
   ****There is no permanent population associated with this development.***

4. 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	***61,053***	÷ 43,560 =	***1.40***
Parking ***(& Drives)***	***107,613***	÷ 43,560 =	***2.47***
Other paved surfaces ***(Sidewalks)***	***22,500***	÷ 43,560 =	***0.52***
Total Impervious Cover	***191,166***	÷ 43,560 =	***4.39***
Total Impervious Cover ÷ Total Acreage x 100 =			***36.07%***

****4.39 ÷ 12.17 = 0.3607 x 100 = 36.07%***

5. _√_ **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided ~~at the end of this form~~ ***below***.

   Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site during construction include:

   - ***Soil erosion due to the clearing of the site;***
   - ***Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings;***
   - ***Hydrocarbons from asphalt paving operations;***
   - ***Miscellaneous trash and litter from construction workers and material wrappings;***

- ***Concrete truck washout.***
- ***Potential overflow/spills from portable toilets***

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site after development include:
- ***Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings;***
- ***Dirt and dust which may fall off vehicles; and***
- ***Miscellaneous trash and litter.***

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.

This application is not exclusively for a road project; therefore, questions 7-12 do not apply.

7. Type of project:
   N/A 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:
   N/A Concrete
   ___ Asphaltic concrete pavement
   ___ Other: _____

9. Length of Right of Way (R.O.W.): ***N/A*** feet.
   Width of R.O.W.: ____ feet.
   L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = ____ acres.

10. Length of pavement area: ***N/A*** 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. ***N/A*** A rest stop will be included in this project.
    ___ A rest stop will **not** be included in this project.

12. ***N/A*** 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 description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided ~~at the end of this form~~ ***below***. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Stormwater runoff will increase as a result of this development. For a 25-year

storm event, the overall project will generate approximately 52.2 cfs. The runoff coefficient for the site changes from approximately 0.62 before development to 0.67 after development. Values are based on the Rational Method using runoff coefficients per the City of San Antonio Unified Development Code. Stormwater runoff from the proposed project can be characterized as overland, shallow-concentrated and channelized flow from a school site.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

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

100% Domestic	***7,500*** gallons/day ***(peak)***
___% Industrial	_____ gallons/day
___% Commingled	_____ gallons/day

TOTAL ***7,500*** gallons/day

Peak Flow:
(10 EDUs) x (750 gpd/EDU) = 7,500 gallons/day

15. Wastewater will be disposed of by:

N/A **On-Site** Sewage Facility (OSSF/Septic Tank):

N/A **ATTACHMENT C - Suitability Letter from Authorized Agent.** An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.

___ 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 Plant*** (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 through 27 must be included on the Site Plan.

Please see Exhibits 1 and 3 for site plan requirements.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = ***40*** '.

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):

FEMA DFIRM (Digital Flood Insurance Rate Map for Bexar County and Incorporated areas) Panel Number 48091C0435F, dated September 2, 2009.

19. √ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.
___ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
√ There are ***-0-*** (#) 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.
N/A **ATTACHMENT D - Exception to the Required Geologic Assessment**. An exception to the Geologic Assessment requirement is requested and explained at the end of this form.

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

Drainage patterns are illustrated by arrows. Slopes vary throughout the site. Typical slopes in this project will range from approximately 1% to 33%.

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

The nature of construction is such that it is difficult to predict areas that will be disturbed and revegetated. The construction plans include a note on Exhibit 3, which will require the contractor to revegetate disturbed areas with seeding, hydromulch or sod and sprinkling. All impervious cover areas will be disturbed. Approximately 3.5 acres may be disturbed.

24. √ Locations of major structural and nonstructural controls. These are the temporary and

permanent best management practices.

Temporary BMPs and Permanent BMPs are shown on Exhibits 1 and 3, respectively.

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

The nature of construction is such that it is difficult to predict areas that will be disturbed and revegetated. The construction plans include a note on Exhibit 3, which will require the contractor to revegetate disturbed areas with seeding, hydromulch or sod and sprinkling. All impervious cover areas will be disturbed. Approximately 3.5 acres may be disturbed.

26. ***N/A*** Surface waters (including wetlands).

27. ___ Locations where stormwater discharges to surface water or sensitive features.
√ There will be no discharges to surface water or sensitive features.

ADMINISTRATIVE INFORMATION

28. √ 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.

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

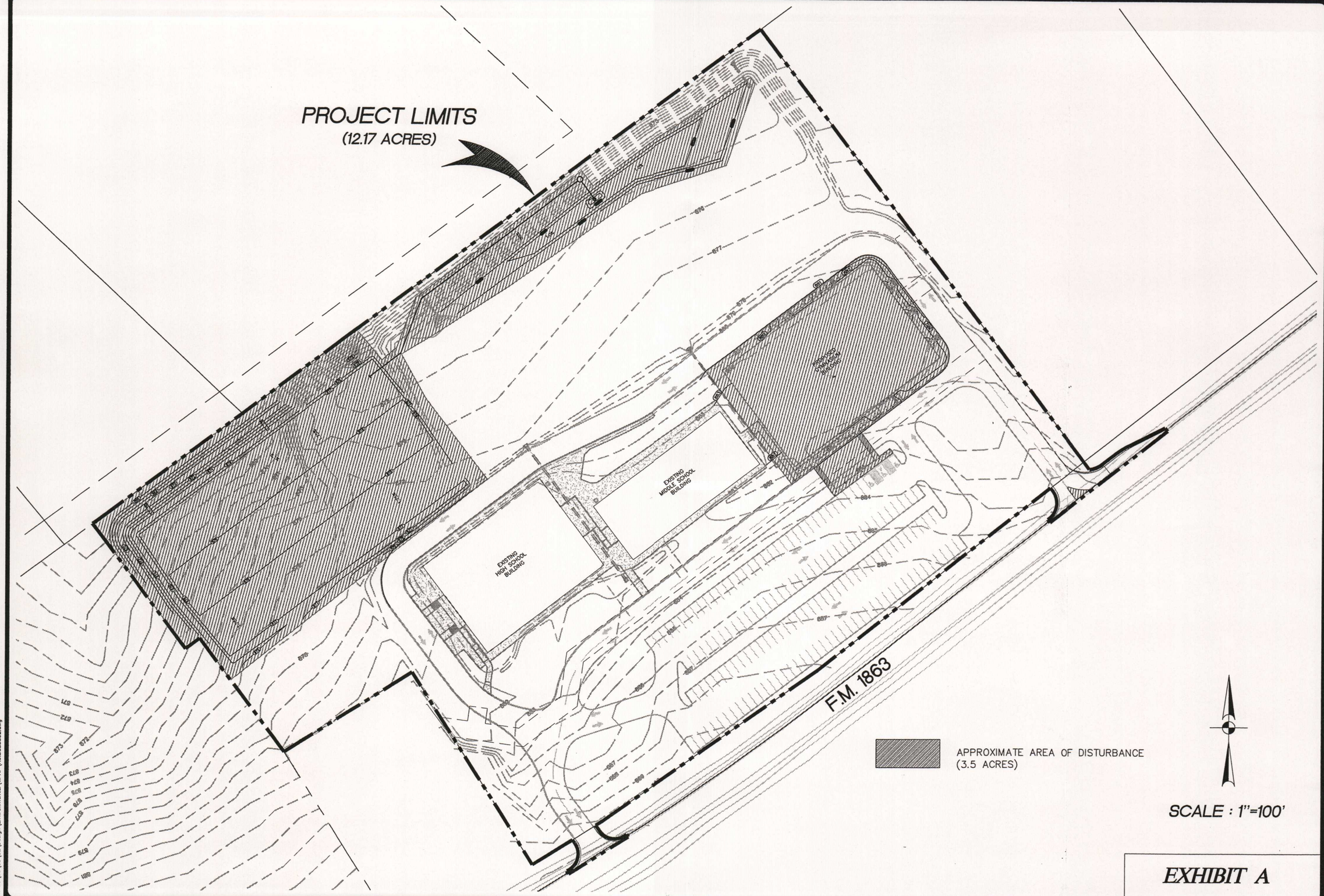
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **WATER POLLUTION ABATEMENT PLAN APPLICATION FORM** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.
Print Name of ~~Customer~~/Agent

Signature of ~~Customer~~/Agent

8/9/13
Date



SCALE : 1"=100'

EXHIBIT A

REVISIONS:

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

NEW BRAUNFELS CHRISTIAN ACADEMY
WATER POLLUTION ABATEMENT PLAN
MODIFICATION
AREA OF DISTURBANCE EXHIBIT

JOB NO. 6338-02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 of 1

Date: Aug 07, 2013, 5:13pm User ID: ROlivares
File: P:\6338\02\Design\Environmental\WPAP\6338302.dwg

Modification of a Previously Approved Plan

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

1. Current Regulated Entity Name: ***New Braunfels Christian Academy***
Original Regulated Entity Name: ***New Braunfels Christian Academy***
Assigned Regulated Entity Numbers (RN): 1) ***104634530***, 2) _____, 3) _____

√ The applicant has not changed and the Customer Number (CN) is: CN ***602851750***
___ The applicant 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 any letters approving modification are found at the end of this form.

3. A modification of a previously approved plan in 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 *(2006)*	Proposed Modification *(2013)*
Acres	***27.17***	***12.17 of 27.17***
Type of Development	***School***	***School***
Number of Residential Lots	***N/A***	***N/A***
Impervious Cover (acres)	***4.09***	***4.39***
Impervious Cover (%)	***15.5***	***36.07***
Permanent BMPs	***15' Engineered VFS; 20% exemption for school buildings***	***15' Engineered VFS and one (1) retention basin/irrigation system***
Other	***N/A***	***N/A***

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 narrative description of the nature of the proposed modification is provided ~~at the end of this form~~ ***below***. It discusses what was approved, including previous modifications, and how this proposed modification will change the approved plan.

New Braunfels Christian Academy is an existing school located at 220 FM 1863, within the city limits of New Braunfels. The project site is located in Comal County, Texas and is situated entirely over the Edwards Aquifer Recharge Zone.

A Water Pollution Abatement Plan (WPAP) for the site titled "New Braunfels Christian Academy" was approved by the Texas Commission on Environmental Quality (TCEQ) on June 9, 2006 (RN104634530; EAPP File No. 2347.02). The original WPAP permitted construction of approximately 4.09 acres of impervious cover for Phase 1 of a two-phase development, or 15.5% of a 27.17-acre site. Fifteen-foot (15') wide Engineered Vegetative Filter Strips (VFS) were approved as Permanent Best Management Practices (PBMPs) for the site to treat driveways, parking and sidewalks. A variant of the 20% or less impervious cover exception request was approved by the TCEQ on July 13, 2005 (EAPP File No. 2347.00), prior to WPAP submittal, and which waived the requirement for treatment of impervious cover from school buildings.

This WPAP Modification (MOD) proposes reconfiguration of the previously approved gymnasium building which was never built, construction of a natural grass sports field, and provides Total Suspended Solids (TSS) treatment/removal for all impervious cover constructed on approximately 12.17 acres. Construction activities proposed with this MOD include clearing, grading, excavation, drainage improvements, a sports field, gym building, and construction of one (1) retention basin and installation of the associated irrigation system. Approximately 4.39 acres of impervious cover are proposed, or 36.07% of the 12.17-acre project limits. Approximately 0.18 acres of the overall 12.17-acre WPAP MOD project limits consist of a twenty-foot (20') dedicated fill easement (0.08 acres) and area within the public right-of-way (0.10 acres). An agent authorization form has been provided with this application for owner of the fill easement property. The approximately 15-acres remaining of the original 27.17-acre project limits has changed property ownership since the 2006 WPAP approval, and future development of this area will require TCEQ submittal of its own WPAP MOD.

One (1) proposed retention basin/irrigation system and existing fifteen-foot (15') Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this site. Runoff from approximately 0.07 acres of impervious cover contributed by uncaptured portions of two (2) entrance drives and a deceleration lane off of F.M. 1863 will be "overtreated" for in the proposed retention basin. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

This school site generates approximately 7,500 gallons per day (gpd) of peak wastewater flow. Wastewater service for the area is provided by New Braunfels Utilities (NBU) with conveyance to the existing Gruene Wastewater Treatment Plant. Potable water service is also provided by NBU.

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 provided at the end of this form. 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.

Approximately 15 acres of the original 27.17-acre project limits have changed property ownership since the 2006 WPAP approval.

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.

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 TO A PREVIOUSLY APPROVED PLAN** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.
Print Name of ~~Customer~~/Agent

Signature of ~~Customer~~/Agent

8/9/13
Date

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 9, 2006

Mr. Richard Ramirez
New Braunfels Christian Academy
2956 Loop 337
New Braunfels, TX 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: New Braunfels Christian Academy; Located approximately 2,500 ft West of TX 46 and FM 1863 in the City of New Braunfels, Texas, Comal County
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer, Edwards Aquifer Protection Program ID No. 2347.02; Investigation No: 452419; Regulated Entity No. RN104634530

Dear Mr. Ramirez:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc., on behalf of New Braunfels Christian Academy on January 11, 2006. Final review of the WPAP submittal was completed after additional material was received on May 15, 2006 and June 5, 2006. 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 total site acreage is 27.17 acres. The site will be developed in two phases. The aforementioned project application is for phase 1 only.

Phase 1 of the proposed New Braunfels Christian Academy project will have a project area of approximately 10 acres. It will include a temporary middle school, temporary high school, gymnasium, football field,

roadways, driveways, and corresponding parking. The impervious cover will be 4.09 acres (15.5 percent of the total site area). Project wastewater will be disposed of by conveyance to the Green Treatment Plant operated by New Braunfels Utilities.

PERMANENT POLLUTION ABATEMENT MEASURES

On July 13, 2005 an exception was granted to the applicant by the TCEQ San Antonio Region Office. The exception excluded from permanent treatment the stormwater run off from the school buildings only. Permanent treatment of stormwater runoff from all parking areas is required. Engineered vegetated filter strips will be designed and installed to treat 80% of the increased TSS generated by the driveways, parking areas, and sidewalks associated with this site. The vegetated filter strips will be designed in accordance with the 2005 edition of the TCEQ's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." The filter strip system shall:

1. Extend along the entire length of the contributing area and the slope shall not exceed 20%,
2. Have a minimum dimension no less than 15 feet , in the direction of flow,
3. Have a maximum width of contributing area that shall not exceed 72 feet, in the direction of flow
4. Have a minimum vegetated cover of 80%,
5. Be installed in an area that is level and free of gullies or rills,

GEOLOGY

According to the geologic assessment included with the application, there are five natural karst features and five manmade features located within the limits of the overall site (27.17 acres). One potential recharge feature, located within Phase 2, was ranked as sensitive (S-6). The two natural karst features located within the project limits of Phase 1 and are not ranked as sensitive. The San Antonio Regional office did not conduct a site investigation.

SPECIAL CONDITIONS

I. All permanent pollution abatement measures shall be established and operational prior to occupancy.

II. Intentional discharges of sediment laden stormwater during construction are not allowed. If dewatering of excavated areas becomes necessary, the discharge will be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.

III. In accordance with 2005 edition of the TCEQ's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.", all areas designated as engineered filter strips shall be described in a legally binding document that restricts modification of these areas through an easement, setback, or other enforceable mechanism.

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.

Prior to Commencement of Construction:

2. 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, TNRCC-0625) that you may use to deed record the approved WPAP is enclosed.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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:

8. 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.

9. 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.

10. There is one well 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.

11. 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.

12. 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.

13. 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:

14. 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.

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. 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 the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TNRCC-10263) is enclosed.

16. 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.

17. 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.

18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Amy Burroughs of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4073.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/aeb

Enclosures: Deed Recordation Affidavit, TNRCC-0625
Change in Responsibility for Maintenance on Permanent BMPs, TNRCC-10263

fc/cc: Mr. David McBeth, P.E., Pape-Dawson Engineers, Inc.
Mr. Tom Hornseth, Comal County
Mr. Michael Short, City of New Braunfels
Mr. Robert J. Potts, Edwards Aquifer Authority
TCEQ Central Records, MC 212

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 13, 2005

Mr. David Pryor, III
New Braunfels Christian Academy, Inc.
955 Mission Hills Drive
New Braunfels, Texas 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: New Braunfels Christian Academy; Located 2461 Loop 337; New Braunfels, Texas
TYPE OF PLAN: Request for Exception; 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer, Edwards Aquifer Protection Program File No. 2347.00, Regulated Entity No. RN104634530, Investigation No. 399323

Dear Mr. Pryor:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the request for exception for the referenced project that was submitted to the San Antonio Regional Office on behalf of New Braunfels Christian Academy by The Schultz Group, Inc. on May 26, 2006. Final review of the request for exception was completed after additional material was received on June 30, 2005.

As presented, the exception request is for not providing permanent stormwater treatment for runoff from the proposed school project. This request is predicated on 30 TAC 213.5(b)(4)(D)(ii)(IV), which states:

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

In the past, the TCEQ has approved similar requests for school buildings only, with permanent stormwater treatment required for all parking areas. Your request for an exception related to treatment of stormwater from the school buildings is in general compliance with 30 TAC § 213.9; therefore, approval of the exception (school buildings only) is hereby granted subject to applicable state rules and the conditions in this approval letter. *This approval expires two (2) years from the date of this approval unless, prior to the expiration date, construction has commenced on the project or an extension of time has been requested.*

SPECIAL CONDITIONS

1. Permanent treatment of stormwater runoff from all parking areas is required.

II. This letter does not authorize any construction pursuant to 30 TAC 213. An approved water pollution abatement plan (WPAP) is required for construction of any regulated activity on the subject site.

STANDARD CONDITIONS FOR EXCEPTION

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.

Prior to Commencement of Construction:

2. 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, covered by the Edwards Aquifer protection plan, 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.

3. 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.

4. 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.

5. 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 file 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 of an approved plan.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

7. If any sensitive feature 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 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.

8. 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%. 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. 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.

10. 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:

11. 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.

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

13. 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 John Mauser of the San Antonio Regional Office at 210/403-4024.

Sincerely,

Bobby D. Caldwell

for Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/JKM/eg

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

cc: Mr. Stephen Schultz, The Schultz Group, Inc.
Mr. Michael Short, P.E., City of New Braunfels
Mr. Tom Homseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Temporary Stormwater Section
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

REGULATED ENTITY NAME: ***New Braunfels Christian Academy***

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:

   _√_ Aboveground storage tanks with a cumulative storage capacity of less that 250 gallons ~~will~~ ***may*** 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-site.

   Temporary aboveground storage tank(s) may be located within the construction staging area in compliance with 30 TAC §213.

2. _√_ **ATTACHMENT A - Spill Response Actions**. A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

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.** Describe ***below*** ~~in an attachment at the end of this form~~ any other activities or processes which may be a potential source of contamination.
   __ There are no other potential sources of contamination.

   Other potential sources of contamination during construction include:
   Potential Source • ***Asphalt products used on this project.***
   Preventative Measure ■ ***After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.***

Potential Source • *Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.*

Preventative Measure
- *Vehicle maintenance when possible will be performed within the construction staging area.*
- *Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.*

Potential Source • *Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.*

Preventative Measure
- *Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.*
- *Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.*
- *Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.*
- *A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.*

Potential Source • *Miscellaneous trash and litter from construction workers and material wrappings.*

Preventive Measure
- *Trash containers will be placed throughout the site to encourage proper trash disposal.*

Potential Source • *Construction debris.*

Preventive Measure
- *Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.*

Potential Source • *Spills/Overflow of waste from portable toilets*

Preventative Measure
- *Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.*
- *Portable toilets will be placed on a level ground surface.*
- *Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.*

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 provided ~~at the end of this form~~ ***below***. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

The sequence of major activities which disturb soil during construction on this site will be divided into two stages. The first is site preparation that will include

clearing and grubbing of vegetation where applicable. This may disturb approximately 2 acres. The second is construction that will include excavation, grading, drainage improvements, a sports field, gym building, one (1) retention basin, installation of an irrigation system, landscaping and site cleanup. This may disturb approximately 3.5 acres.

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.** A description of the TBMPs and measures that will be used during and after construction are provided ~~at the end of this form~~ ***below***. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

Please see Exhibit 1 for TBMP layout and the response to "a" through "d" below for more details.

√ 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 has been provided ~~in the attachment at the end of this form~~ ***below***.

a. 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.

Upgradient stormwater runoff from areas to the south are intercepted by FM 1863 and do not enter the project site. No additional TBMPs are necessary and all TBMPs utilized are adequate for the drainage areas served.

b. 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.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) placement of sediment control wattles along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms downgradient from areas of concentrated stormwater flow for temporary erosion control, and (3) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter the aquifer, surface streams and/or sensitive features that may exist downstream of the site.

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

There are no surface streams on or immediately adjacent to the site.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter the aquifer, surface streams and/or sensitive features that may exist downstream of the site.

d. 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.

No naturally-occurring sensitive features were identified in the Geologic Assessment. There are no surface streams on or immediately adjacent to the site.

BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams or features that may exist downstream of the site. Features discovered during construction will be reported and assessed in accordance with applicable regulations.

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.

N/A **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. 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.** Describe 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. Placement of structural practices in floodplains has been avoided.

The following structural measures will be installed prior to the initiation of site preparation activities:

- ***Erection of sediment control wattles along the downgradient boundary of construction activities and rock berms for secondary protection, as located on Exhibit 1 and illustrated in Exhibit 2.***
- ***Installation of a construction staging area, as located on Exhibit 1, and illustrated on Exhibit 2.***

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- ***Installation of concrete truck washout pit(s), as required and located on Exhibit 1 and illustrated on Exhibit 2.***
- ***Placement of inlet protection, as required and located on Exhibit 1 and illustrated on Exhibit 2.***

10. √ **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided ~~at the end of this form~~ ***as Exhibit 3*** to support the following requirements.

___ 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 ***will be used.***

All TBMPs utilized are adequate for the drainage areas served.

11. ***N/A*** **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 has 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 provided as at the end of this form.

12. √ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

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

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. ***N/A*** 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 at the end of this form~~ ***below***.

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (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 seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

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.

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:

Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.
Print Name of ~~Customer~~/Agent

Signature of ~~Customer~~/Agent

8/9/13
Date

Spill Response Actions

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.
- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor will be required to report significant or hazardous spills in reportable quantities to:
  - the National Response Center at (800) 424-8802
  - the Edwards Aquifer Authority at (210) 222-2204
  - the TCEQ Regional Office (210) 490-3096 (if during business hours: 8 AM to 5 PM) or
  - the State Emergency Response Center (800) 832-8224 (if after hours)

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

INSPECTIONS & MAINTENANCE

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection will be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

_____ **A brief statement describing the qualifications of the inspector is included in this SWP3.**

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

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

Inspector's Name _____ Inspector's Signature _____ Date _____

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date
Installation of BMPs	

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

Construction Activity	Date

Dates when stabilization measures are initiated:

Stabilization Activity	Date
Removal of BMPs	

Permanent Stormwater Section
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

REGULATED ENTITY NAME: ***New Braunfels Christian Academy***

Permanent best management practices (BMPs) 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.

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 provided below

   _____

   _____

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.

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.

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

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

   √ This 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.

N/A **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** This 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 found at the end of this form.

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

___ This 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 identified as **ATTACHMENT B** at the end of this form.

√ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided ~~as **ATTACHMENT B** at the end of this form~~ ***below.***

___ If 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, an explanation is provided as **ATTACHMENT B** at the end of this form.

Upgradient stormwater runoff from areas to the south are intercepted by FM 1863 and do not enter the project site. No Permanent BMPs are necessary.

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 identified ~~as **ATTACHMENT C** at the end of this form~~ ***below***.

___ If 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, an explanation is provided as **ATTACHMENT C** at the end of this form.

One (1) proposed retention basin/irrigation system and existing fifteen-foot (15') Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this site. Runoff from approximately 0.07 acres of impervious cover contributed by uncaptured portions of two (2) entrance drives and a deceleration lane off of F.M. 1863 will be "overtreated" for in the proposed retention basin. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

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 provided ~~at the end of this form~~ ***below***. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

There are no surface streams on or immediately adjacent to the site. One (1) proposed retention basin/irrigation system and existing fifteen-foot (15') Engineered Vegetative Filter Strips (VFS) are proposed as the Permanent Best Management Practices (PBMPs) for this site. Runoff from approximately 0.07 acres of impervious cover contributed by uncaptured portions of two (2) entrance drives and a deceleration lane off of F.M. 1863 will be "overtreated" for in the proposed retention basin. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

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" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

N/A **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. √ **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided ~~at the end of this form~~ ***in the Exhibits section of this application***. Design Calculations, TCEQ Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. √ **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

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

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

N/A **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

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 provided ~~at the end of this form~~ ***below***. 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.

Any points where discharge from the site is concentrated and excessive velocities exist will include appropriately sized energy dissipators to reduce velocities to non-erosive levels.

Responsibility for maintenance of permanent BMPs 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.

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.

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:

Pape-Dawson Engineers, Inc.

Texas Board of Professional Engineers, Firm Registration # 470

Song L. Tan, P.E.

Print Name of ~~Customer~~/Agent

Signature of ~~Customer~~/Agent

8/9/13

Date

PERMANENT POLLUTION ABATEMENT MEASURES
MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES

This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated in to a project.

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

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners association covenants, or other binding document.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

I, the owner, have read and understand the requirements of the attached Maintenance Plan and Schedule.

H. Eric Pipkin
Signature

July 9, 2013
Date

Eric Pipkin, Head of School
New Braunfels Christian Academy

INSPECTION AND MAINTENANCE SCHEDULE FOR PERMANENT POLLUTION ABATEMENT MEASURES

Recommended Frequency	Task to be Performed											
	1	2	3	4	5	6	7	8	9	10	11	12
After Rainfall	√						√	√	√	√	√**	
Biannually*	√	√	√	√	√	√	√	√		√		

**At least one biannual inspection must occur during or immediately after a rainfall event.*
***Inspections should occur at least 6 times annually; two to occur during or immediately following wet weather.*
√Indicates maintenance procedure that applies to this specific site.

See description of maintenance tasks to be performed on the following pages. Frequency of maintenance tasks may vary depending on amount of rainfall & other weather related conditions.

A written record will be kept of inspection results and maintenance performed.

Task No. & Description	*Included in this project*	
1. Check Depth of Vegetation	**Yes**	~~No~~
2. Check Depth of Silt Deposit in Basin	**Yes**	~~No~~
3. Removal of Debris and Trash	**Yes**	~~No~~
4. Cut-off Valve	**Yes**	~~No~~
5. Inlet Splash Pad	**Yes**	~~No~~
6. Structural Integrity	**Yes**	~~No~~
7. Discharge Pipe	**Yes**	~~No~~
8. Drawdown Time	**Yes**	~~No~~
9. Irrigation Areas (Retention System)	**Yes**	~~No~~
10. For Pump Stations	**Yes**	~~No~~
11. Irrigation System (Retention System)	**Yes**	~~No~~
12. Visually Inspect Security Fencing for Damage or Breach	~~Yes~~	**No**

MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

Note: Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 3.5.

1. Check Depth of Vegetation. Grassy areas in and around the basin must be mowed at least twice annually. Vegetation in the basin shall not exceed 18-inches in depth. When vegetation needs to be cut, it shall be cut to an approximately 4-inch height. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and then removed. *A written record will be kept of inspection results and maintenance performed.*

2. Check Depth of Silt Deposit in Basin. Remove sediment from splitter box, basin, and wet wells at least twice annually or when the accumulated depth reaches 3 inches. *Written record will be kept of inspection results and maintenance performed.*

3. Removal of Debris and Trash. Debris and litter will accumulate near the basin sump and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the irrigation system. The basin and inlet structure shall be checked for the accumulation of debris and trash such as brush, limbs, leaves, paper cups, aluminum cans, plastic bottles etc. Accumulated trash and debris shall be raked or collected from the basin and inlet structure and disposed of properly. *Written record will be kept of inspection results and maintenance performed.*

4. Cut-off Valve. The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24-hours and 72-hours). Count should be kept of number of turns to open and close the valve so that the valve can be reset to the starting position. Defects in the operation of the cut-off valve

shall be corrected within 7 working days. *A written record will be kept of inspection results and maintenance performed.*

5. Inlet Splash Pad. The filter area around the inlet splash pad shall be checked for erosion and for the condition of the rock rubble. Erosion or disturbance of the rock rubble should be corrected by removal and/or replacement of the rock rubble. If the condition persists in subsequent inspections, the size of the rock rubble should be increased. Rubble should be placed to a density that minimizes the amount of exposed soil between the rock rubble. Deficiencies should be corrected within seven working days. A *written record will be kept of inspection results and maintenance performed.*

6. Structural Integrity. In addition to Items 1 through 6 the following are measures which should be reviewed during a check of structural integrity:
   - Observe the height of the confining berm for visible signs of erosion or potential breach. Signs of erosion and/or slumping of basin walls should be corrected within 2 weeks or immediately in case of emergency conditions. Regrading and vegetation may be required to correct the problems. Corrective measures include but are not limited to addition of topsoil or appropriate soil material so as to restore the original berm height of the basin. Restored areas shall be protected through placement of solid block sod. *Written record will be kept of inspection results and maintenance performed.*

7. Discharge Pipe. The basin discharge pipe shall be checked for accumulation of silt, debris or other obstructions, which could block flow. Soil accumulations, vegetative overgrowth and other blockages should be cleared from the pipe discharge point. Erosion at the point of discharge shall be monitored. If erosion occurs, the addition of rock rubble to disperse the flow should be accomplished. *A written record will be kept of inspection results and corrective measures taken*

8. Detention Time. The irrigation schedule should allow for complete drawdown of the water quality volume within 72 hours. Irrigation should not begin within 12 hours of the end of rainfall. If detention time exceeds 72 hours or begins prior to 12 hours after end of rainfall, check wet well and irrigation system. *A written record of the inspection findings and corrective actions performed will be made.*

9. Irrigation Areas. Vegetation must be maintained in the irrigation area such that it does not impede the spray of water from the irrigation heads. Tree and shrub trimmings and other large debris should be removed from the irrigation area. *Written record will be kept of inspection results and maintenance performed.*

10. For Pump Stations. Check wet well discharge pipe to confirm flow through the pump system. If flow is not present, allow sufficient time for pump to cycle on and off. If flow does not occur, the wet well should be checked for the level of water. The wet well should be opened and the on/off float switches should be moved up and down to activate the pump. If the pump does not start, a repair technician shall be called in to repair the malfunction within 5 working days.

    Check the wet well for accumulation for trash, debris and silt. Trash and debris shall be removed and disposed of properly. Silt depth can be checked by probing the bottom of the wet well with a stick or PVC pipe. Silt accumulations should be removed when silt collects to a depth of three (3) inches over the entire wet well bottom. Silt can be removed by vacuum pump or other methods.

    Visually check aboveground pump wiring and connections for damage. Damaged or loose connections should be repaired within 5 working days. *Written record will be kept of inspection results and maintenance performed.*

11. Irrigation System. The irrigation system, including pumps, should be inspected and tested (or observed while in operation) to assure proper operation at least 6 times annually. Two of these inspections should occur during or immediately following wet weather. Any leaks, broken spray heads, or other malfunctions with the irrigation system should be repaired immediately. In particular, sprinkler heads must be checked to determine if they are broken, clogged, or not spraying properly. *A written record will be kept of inspection results and the maintenance performed. All inspection and testing reports will be kept on site and accessible to inspectors.*

12. Visually Inspect Security Fencing for Damage or Breach. Check the basin maintenance access gates for proper operation. Damage to fencing or gates shall be repaired within 5 working days. *A written record will be kept of inspection results and maintenance performed.*

13. Recordkeeping Procedures for Inspections, Maintenance, Repairs, and Retrofits.
    - Written records shall be kept by the party responsible for maintenance or a designated representative.
    - Written records shall be retained for a minimum of five years.

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

I ***Fred Heimer***,
Print Name

Owner,
Title - Owner/President/Other

of ***Heimer Family Partners, Ltd.***,
Corporation/Partnership/Entity Name

have authorized ***Eric Pipkin***
Print Name of Agent/Engineer

of ***New Braunfels Christian Academy, Inc.***
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

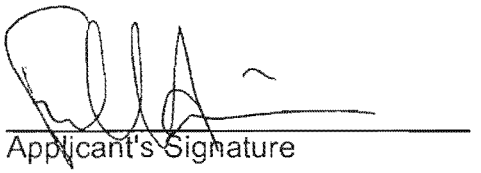
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:



Applicant's Signature

8/12/13
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Fred Heimer 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 12 day of August, 2013.

Ceretta Daum
Notary Public
State of Texas
My Comm. Exp. 10/2/2013

Ceretta Daum
NOTARY PUBLIC

Ceretta Daum
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/2/2013

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

I ***S. Craig Hollmig***,
Print Name

Owner,
Title - Owner/President/Other

of ***Hollmig Family Partnership, Ltd.***,
Corporation/Partnership/Entity Name

have authorized ***Eric Pipkin***
Print Name of Agent/Engineer

of ***New Braunfels Christian Academy, Inc.***
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

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SIGNATURE PAGE:

Craig Hollmig — 7/10/2013

Applicant's Signature — Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared S. Craig Hollmig 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 11th day of July, 2013.

Ceretta Daum
Notary Public
State of Texas
My Comm. Exp. 10/2/2013

Ceretta Daum
NOTARY PUBLIC

Ceretta Daum
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/2/2013

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

I ***Eric Pipkin***,
Print Name

Head of School,
Title - Owner/President/Other

of ***New Braunfels Christian Academy***,
Corporation/Partnership/Entity Name

have authorized ***Pape-Dawson Engineers, Inc.***
Print Name of Agent/Engineer

of ***Pape-Dawson Engineers, Inc.***
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

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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:

H. Eric Pipkin
Applicant's Signature

7-9-13
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared H. Eric Pipkin 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 9th day of July 2013

JUDITH A QUINTANA
My Commission Expires
March 30, 2017

NOTARY PUBLIC

Judith A. Quintana
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: March 30, 2017

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: ***New Braunfels Christian Academy***
REGULATED ENTITY LOCATION: ***220 FM 1863, New Braunfels, Texas 78132***
NAME OF CUSTOMER: ***New Braunfels Christian Academy, Inc.***
CONTACT PERSON: ***Eric Pipken*** PHONE: ***(830) 629-1821***
(Please Print)

Customer Reference Number (if issued): CN ***602851750*** (nine digits)

Regulated Entity Reference Number (if issued): RN ***104634530*** (nine digits)

Austin Regional Office (3373) ☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362) ☐ Bexar ☒ Comal ☐ Medina ☐ Kinney ☐ Uvalde

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 (Check One):

☐ **Austin Regional Office**

☐ **Mailed to TCEQ**:
TCEQ – Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ **San Antonio Regional Office**

☐ **Overnight Delivery to TCEQ**:
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

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	***12.17*** Acres	$ ***6,500***
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature

8/9/13
Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Schedule
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

ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER

31516

NEW BRAUNFELS CHRISTIAN ACADEMY
220 FM 1863
NEW BRAUNFELS, TEXAS 78132
(830) 629-1821

FIRST COMMERCIAL BANK
New Braunfels, Texas

88-1222/1149

7/10/2013

PAY TO THE ORDER OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY $ **6,500.00

Six Thousand Five Hundred and 00/100********** DOLLARS

TEXAS COMMISSION ON ENVIRONMENTAL QUA
12100 PARK 35 CIRCLE
BUILDING A, 3RD FLOOR
AUSTIN, TX 78753

NEW BRAUNFELS CHRISTIAN ACADEMY

H. Keri Pipkin

MEMO APPLICATION FEE

Details on back. Security Features Included.

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS HERE - RED IMAGE DISAPPEARS WITH HEAT.

⑈031516⑈ ⑆114912220⑆ 033007829⑈

NEW BRAUNFELS CHRISTIAN ACADEMY

31516

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY 7/10/2013
47000 · 2012 CAPITAL CAMPAIGN:4701 SOFT FEES FOR STUDENT BUILDING 6,500.00

FIRST COMMERCIAL APPLICATION FEE 6,500.00

EXHIBITS

TCEQ

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. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No — Water Pollution Abatement Plan Modification & Exhibits

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN		RN 104634530

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

6. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check only one of the following:*

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other: _____

7. General Customer Information

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☐ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:	☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☒ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)* — *If new Customer, enter previous Customer below* — *End Date:*

Heimer Family Partners, Ltd.

10. Mailing Address:

130 S. Seguin Avenue
Suite 100

City	State	ZIP	ZIP + 4
New Braunfels	TX	78130	5147

11. Country Mailing Information *(if outside USA)*

12. E-Mail Address *(if applicable)*

fred.heimer@sv-re.com

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
(830) 625-8410		(830) 625-8410

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number *(if applicable)*	19. TX SOS Filing Number *(if applicable)*
741724092	32036429432		0007412610

20. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☒ Yes ☐ No

SECTION III: Regulated Entity Information

22. 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 ☐ No Change** *(See below)*

If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

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

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*	220 FM 1863							
	City	New Braunfels	State	TX	ZIP	78132	ZIP + 4	3700
25. Mailing Address:								
	City		State		ZIP		ZIP + 4	

26. E-Mail Address:		
27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*
( ) -		( ) -

30. Primary SIC Code (4 digits)	31. Secondary SIC Code (4 digits)	32. Primary NAICS Code (5 or 6 digits)	33. Secondary NAICS Code (5 or 6 digits)

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:			
36. Nearest City	County	State	Nearest ZIP Code

37. Latitude (N) In Decimal:			38. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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 or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Industrial Hazardous Waste	☐ Municipal Solid Waste
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jennifer C. Franklin, E.I.T.	41. Title:	Engineer II

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 375-9000		(210) 375-9010	jfranklin@pape-dawson.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 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Pape-Dawson Engineers, Inc.	Job Title:	Vice President
Name *(In Print)*:	Song L. Tan, P.E	Phone:	(210) 375-9000
Signature:	SLT	Date:	8/13/13

TCEQ

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. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No — Water Pollution Abatement Plan Modification & Exhibits

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN		RN 104634530

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

6. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check only one of the following:*

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other: _____

7. General Customer Information

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☐ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A	
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☒ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)* — *If new Customer, enter previous Customer below* — *End Date:*

Hollmig Family Partnership, Ltd.

10. Mailing Address:

130 S. Seguin Avenue
Suite 100

City	State	ZIP	ZIP + 4
New Braunfels	TX	78130	5147

11. Country Mailing Information *(if outside USA)*

12. E-Mail Address *(if applicable)*

craighollmig@gmail.com

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
(830) 625-8410		(830) 625-8410

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number *(if applicable)*	19. TX SOS Filing Number *(if applicable)*
742651175	32036457904		0006610710

20. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☒ Yes ☐ No

SECTION III: Regulated Entity Information

22. 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 ☐ No Change** *(See below)*

If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

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

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25. Mailing Address:								
	City		State		ZIP		ZIP + 4	

26. E-Mail Address:		
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( ) -		( ) -

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34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:			
36. Nearest City	County	State	Nearest ZIP Code

37. Latitude (N) In Decimal:			38. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Industrial Hazardous Waste	☐ Municipal Solid Waste
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jennifer C. Franklin, E.I.T.	41. Title:	Engineer II

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 375-9000		(210) 375-9010	jfranklin@pape-dawson.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 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Pape-Dawson Engineers, Inc.	Job Title:	Vice President
Name *(In Print)*:	Song L. Tan, P.E	Phone:	(210) 375-9000
Signature:		Date:	8/13/13

TCEQ

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒Yes ☐No — Water Pollution Abatement Plan Modification & Exhibits

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN 602851750		RN 104634530

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

6. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check only one of the following:*

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☐Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐Other:

7. General Customer Information

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
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8. Type of Customer:	☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☐ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)*	*If new Customer, enter previous Customer below*	*End Date:*

10. Mailing Address:

City		State		ZIP		ZIP + 4	

11. Country Mailing Information *(if outside USA)*	12. E-Mail Address *(if applicable)*

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
( ) -		( ) -

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number*(if applicable)*	19. TX SOS Filing Number *(if applicable)*

20. Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☐ Yes ☐ No

SECTION III: Regulated Entity Information

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

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25. Mailing Address:								
	City		State		ZIP		ZIP + 4	

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27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*
( ) -		( ) -

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☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Industrial Hazardous Waste	☐ Municipal Solid Waste
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jennifer C. Franklin, E.I.T.	41. Title:	Engineer II

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 375-9000		(210) 375-9010	jfranklin@pape-dawson.com

SECTION V: Authorized Signature

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(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Pape-Dawson Engineers, Inc.	**Job Title:**	Vice President
Name *(In Print)*:	Song L. Tan, P.E	**Phone:**	(210) 375-9000
Signature:		**Date:**	8/9/13

3/C

201206026516 08/02/2012 03:37:36 PM 1/3

SPECIAL WARRANTY DEED

Date: January 1, 2012

Grantor: Hollmig Family Partnership, Ltd.

Grantor's Mailing Address (including county): 410 N. Seguin Ave.
New Braunfels, Texas 78130

Grantee: Heimer Family Partners, Ltd.

Grantee's Mailing Address (including county): 130 S. Seguin Ave.
New Braunfels, Texas 78130

Consideration:

TEN AND NO/100 DOLLARS ($10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged.

Property (including any improvements):

A fifty (50%) percent undivided interest in a 15.156 acre tract of land out of the Luis Salinas Survey No. 458, Abstract No. 531, Comal County, Texas, and being a portion of a tract of land called 27.172 acres described in Doc. #200406025466, Official Public Records, Comal County, Texas, and being the same 15.156 acre tract of land described in Doc. #201106018421, Official Public Records of Comal County, Texas, said 15.156 acre tract of land being more particularly described by metes and bounds on Exhibit "A", attached hereto for all purposes.

This conveyance is made and accepted subject to any and all restrictions, covenants, reservations and easements, if any, relating to the hereinabove described property, but only to the extent they are still in effect, shown of record in Comal County, Texas.

Current ad valorem taxes on said property having been paid through December 31, 2011, the payment thereof is assumed by Grantee.

The property is conveyed "as is", except for the warranties of title as provided and limited herein. Grantor makes no representation as to the physical condition, layout, footage, expenses, zoning, operation, or any other matter affecting or relating to the property, and Grantee hereby expressly agrees that no such representations have been made. Grantor makes no other warranties, express or implied, of merchantability, marketability, fitness or suitability for any particular purpose or otherwise, except as set forth and limited herein. Grantor expressly disclaims and excludes any implied warranties.

Exceptions to Conveyance and Warranty:

Validly existing easements, rights-of-way, and prescriptive rights, whether of record or not; all presently recorded and validly existing restrictions, reservations, covenants, conditions, oil and gas leases, mineral interests, and water interests outstanding in persons other than Grantor, and other instruments, other than conveyances of the surface fee estate, that affect the Property; validly existing rights of adjoining owners in any walls and fences situated on a common boundary; any discrepancies, conflicts, or shortages in area or boundary lines; any encroachments or overlapping of improvements; all rights, obligations, and other matters arising from and existing by reason of the scope and authority of Comal County, Texas; and taxes for 2012, which Grantee assumes and agrees to pay, but not subsequent assessments for that and prior years due to change in land usage, ownership, or both, the payment of which Grantor assumes. All restrictions, covenants, easements and exceptions referenced in the deed from New Braunfels Christian Academy, Inc. to Hollmig Family Partnership, Ltd., recorded as Document No. 201106018421 in the Official Public Records of Comal County, Texas, remain in effect and are ratified and acknowledged by all parties hereto.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof when the claim is by, through or under Grantor but not otherwise, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

GRANTEE IS TAKING THE PROPERTY IN AN ARM'S-LENGTH AGREEMENT BETWEEN THE PARTIES. THE CONSIDERATION WAS BARGAINED ON THE BASIS OF AN "AS IS, WHERE IS" TRANSACTION AND REFLECTS THE AGREEMENT OF THE PARTIES THAT THERE ARE NO REPRESENTATIONS OR EXPRESS OR IMPLIED WARRANTIES, EXCEPT FOR THOSE CONTAINED IN THE PURCHASE CONTRACT, THIS DEED, AND THE OTHER CLOSING DOCUMENTS. GRANTEE HAS NOT RELIED ON ANY INFORMATION OTHER THAN GRANTEE'S INSPECTION AND THE REPRESENTATIONS AND WARRANTIES EXPRESSLY CONTAINED IN THE PURCHASE CONTRACT, THIS DEED, AND THE OTHER CLOSING DOCUMENTS.

When the context requires, singular nouns and pronouns include the plural.

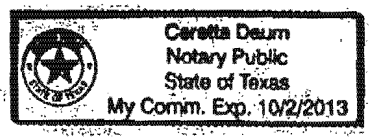
Hollmig Family Partnership, Ltd.

Vicki Tilley Hollmig, General Partner

STATE OF TEXAS §

COUNTY OF COMAL §

This instrument was acknowledged before me on the 1st day of January 2012, by Vicki Tilley Hollmig.



Ceretta Daum

Notary Public, State of Texas

After Recording Return To:

Heimer FP & Hollmig FP
P. O. Box 311002
New Braunfels, Tx 78130

Filed and Recorded
Official Public Records
Joy Streater, County Clerk
Comal County, Texas
08/02/2012 03:37:36 PM
DARLA 3 Page(s)
201206026516

Joy Streater

FAMTC - MAIN
First American Title
GF #1559792-SA
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Notice of confidentiality rights: If you are a natural person, you may remove or strike any or all of the following information from any instrument that transfers an interest in real property before it is filed for record in the public records: your Social Security number or your driver's license number.

General Warranty Deed

Date: May 31st, 2011

Grantor: NEW BRAUNFELS CHRISTIAN ACADEMY, INC.
220 FM 1863
New Braunfels, TX 78132

Grantee: HOLLMIG FAMILY PARTNERSHIP, LTD.
410 N. Seguin Avenue
New Braunfels, TX 78130

Consideration: Ten Dollars ($10.00) and other good and valuable consideration, and the agreements set out herein.

Property (including any improvements): A 15.156 acre tract of land out of the Luis Salinas Survey No. 458, Abstract No. 531, Comal County, Texas, and being a portion of a tract of land called 27.172 acres described in Doc# 200406025466, Official Public Records, Comal County, Texas, said 15.156 acre tract of land being more particularly described on ***Exhibit "A"*** attached hereto.

Easement Property: Those properties described on ***Exhibits "B"*** and ***"C"*** and depicted on ***Exhibit "D"*** attached hereto, located in Comal County, Texas.

Easement Purpose: 1. The purpose of the Easement on the Easement Property described on ***Exhibit "B"*** is for erecting, constructing, installing, replacing, repairing, operating, using, inspecting, reconstructing, modifying, removing and maintaining water utility services, together with all lines, pipes, and other equipment, improvements and appurtenances used in the supply and provision of such utilities (the "Water Facilities").

2. The purpose of the Easement on the Easement Property described on ***Exhibit "C"*** is for erecting, constructing, installing, replacing, repairing, operating, using, inspecting, reconstructing, modifying, removing and maintaining wastewater utility services, together with all lines, pipes, and other equipment, improvements and appurtenances used in the supply and provision of such utilities (the "Wastewater Facilities").

The Water Facilities and the Wastewater Facilities are collectively referred to herein as "the Facilities". All Facilities, except necessary manholes, shall be below the surface of the Easement Property.

Additional Easement Area: An additional 20 foot wide strip of land on (i) the south side of and abutting that part of the Easement Property described on the attached ***Exhibit "C"*** and (ii) the north and east sides of and abutting that part of the Easement Property described on the attached ***Exhibit "B"***, save and except those areas which are paved with asphalt on the date of this document. The Additional

Easement Area is also a part of Grantor's Remaining Property.

Temporary Construction Easement: The purpose of the Additional Easement Area is for Grantee's use, to the extent reasonably necessary and convenient, to construct and install the Facilities within the Easement Property.

Recitals: Grantor acknowledges that (i) Grantee proposes to develop the Property in the future, (ii) access to utilities necessary or desirable for such development is under the Easement Property and (iii) Grantee may assign the Easement to one or more utility providers such as New Braunfels Utilities ("NBU"). A portion of the Easement Property described on ***Exhibit "C"*** is presently improved with a private sewer line that services Grantor's remaining property containing approximately 12.016 acres on which school facilities are located ("Grantor's Remaining Property"). Grantee acknowledges that it will have no right to connect to such private sewer line. Grantor is not conveying any sewer capacity rights to Grantee by this conveyance.

Reservations from Conveyance: Grantor reserves the right to continue to use and enjoy the surface of the Easement Property for all purposes that do not interfere with or interrupt the use or enjoyment of the Easement by Grantee for the Easement Purpose or the Temporary Construction Easement, including the right to place surfacing materials over and across the Easement Property and to use the same for parking and/or driveways or walkways; provided, however, no buildings, structures of any kind, ponds, drainage facilities or other improvements may be placed on the Easement Property or the Additional Easement Area which will obstruct the Easement or interfere with the Facilities or the exercise of Grantee's rights, except (i) those areas with drainage facilities which may or may not be located on the Easement Property on the date of this document and (ii) Grantor may place improvements and facilities for a high school baseball field on a segment of the Additional Easement Area related to the Easement Property described on ***Exhibit "C"***, provided such segment is no more than 10 feet wide and adjoins the Grantor's Remaining Property not subject to any easement. Grantor may change the level of the surface of the Easement Property, provided that any such change in the level of the surface of the Easement Property may not unreasonably interfere with or prevent the use of the Easement Property for the Easement Purpose. Grantor or its successors or assigns must observe and exercise all notification laws as per the Underground Facility Damage Prevention and Safety Act, also known as "ONE CALL" & "CALL BEFORE YOU DIG", when working in or near the Easement Property.

Exceptions to Conveyance and Warranty:

1. Standby fees, taxes and assessments by any taxing authority for the year 2011, and subsequent years; and subsequent taxes and assessments by any taxing authority for prior years due to change in land usage or ownership.

2. Those restrictions of record in Document No. 200406025466 of the Official Public Records of Comal County, Texas.

3. Water Line Easement recorded as Document No. 200606030632 of the Official Public Records of Comal County, Texas.

4. Deed Recordation Affidavit concerning Edwards Aquifer Protection Plan as set forth in instrument recorded as Document No. 201106010103, Official Public Records of Comal County, Texas.

Grant of Property: Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's successors and assigns forever. Grantor binds Grantor and Grantor's successors and assigns to warrant and forever defend all and singular the Property to Grantee and Grantee's successors and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

Grant of Easement: Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells and conveys to Grantee an Easement over, under, upon and across (i) the Easement Property for the Easement Purpose and (ii) the Additional Easement Area for the Temporary Construction Easement and for the benefit of the Dominant Estate Property, and portions thereof, together with all and singular the rights and appurtenances thereto in any wise belonging, to have and hold it to Grantee, Grantee's successors or assigns forever. Grantor binds Grantor and Grantor's successors and assigns, to warrant and forever defend all and singular the Easement to Grantee and Grantee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

Terms: The following terms and conditions apply to the Easement:

1. *Character of Easement.* The Easement is exclusive. Grantee may convey by one or more assignments of this Easement or otherwise authorize the right to use the Easement Property and the Additional Easement Area to providers of water and wastewater utility services for the Easement Purpose and the Temporary Construction Easement. Grantee will also have the right to remove from the Easement Property all bushes, trees and parts thereof, and vegetation.

2. *Duration.* The duration of the Easement is perpetual and irrevocable. The duration of the Temporary Construction Easement is six months from the date of commencement of construction with respect to each portion of the Additional Easement Area. For example, if construction of Wastewater Facilities commences on July 1, the Temporary Construction Easement with respect to the ***Exhibit "C"*** Easement Property would terminate the following December 31 and the Temporary Construction Easement with respect to the ***Exhibit "B"*** Easement Property would continue.

3. *Easement Improvements.* All matters concerning the design, construction, installation, maintenance, replacement and removal of the Facilities are at the sole discretion of Grantee and/or its assigns, subject to performance of its obligations under this agreement. All Facilities or other improvements constructed under the Easement Property will be and remain the property of Grantee or its assigns. In the event Grantor places surfacing materials, landscaping or other improvements authorized by this agreement over and across the Easement Property or Additional Easement Area or portions thereof (the Grantor Improvements), Grantee and/or its assigns will use ordinary care to minimize damage to the Grantor Improvements in the event repair, replacement or maintenance of the Facilities is required. Grantee and/or its assigns will be obligated to restore the Grantor Improvements to their condition prior to the time work commenced.

4. *Enforcement.* If there is any breach or threatened breach of this Easement by any party or their successors or assigns, and the default or threat continues after the claiming party gives the defaulting party notice of the claim of default and a reasonable opportunity to cure the default (if the default is capable of being cured), then the claiming party may enforce the terms of this Easement by restraining order and by temporary and permanent injunction, prohibiting such breach and commanding the offending party to comply with all terms of this Easement. Restraining orders and injunctions will be obtainable upon proof of the existence of any breach or threatened breach, and without the necessity of proof of inadequacy of legal remedies or irreparable harm, and will be obtainable only by the parties hereto or those benefited hereby; provided, however, that the act of obtaining an injunction or restraining order will not be deemed to be an election of remedies or a waiver of any other rights or remedies available at law or in equity.

5. *Attorneys' Fees.* Any party who is the prevailing party in any legal proceeding against any other party brought under or in connection with this agreement or the subject matter hereof, is additionally entitled to recover reasonable attorneys' fees, expert fees, and all other litigation expenses.

6. *Effect of Waiver or Consent.* No waiver or consent, express or implied, by any party to this Easement of any breach by any party in the performance by such party of its obligations hereunder will be deemed or construed to be a consent to or a waiver of any other breach and the performance by such party of the same or any other obligations of such party hereunder. Failure on the part of a party to complain of any act of any party or to declare any party in default, regardless of how long such failure continues, will not constitute a waiver by such party of its rights hereunder until the applicable statute of limitations period has run.

7. *General Provisions.*

   (a) This agreement binds and inures to the benefit of the parties hereto and their respective successors and assigns.

   (b) This agreement contains the complete agreement of the parties and cannot be varied except by written agreement. The parties agree that there are no oral agreements, representations or warranties that are not expressly set forth in this agreement.

   (c) Each party agrees to execute and deliver any additional documents and instruments and to perform any additional acts necessary or appropriate to perform the terms, provisions and conditions of this agreement and all transactions contemplated by this agreement.

   (d) This agreement will be construed under the laws of the State of Texas without regard to choice of law rules of any jurisdiction. Venue will lie in the courts of Comal County, Texas.

   (e) If any provision in this agreement is for any reason unenforceable, to the extent the unenforceability does not destroy the basis of the bargain between the parties, the unenforceability will not affect any other provision hereof, and this agreement will be construed as if the unenforceable provision had never been a part of the agreement.

Whenever the context requires, the singular will include the plural and neuter includes the masculine or feminine gender, and vice versa. Article and section headings in this agreement are for reference only and are not intended to restrict or define the text of any section. This agreement will not be construed more or less favorably between the parties by reason of authorship or origin of language.

(f) Any notice required or permitted under this agreement must be in writing. Any notice required by this agreement will be deemed to be delivered (whether actually received or not) when deposited with the United States Postal Service, postage prepaid, certified mail, return receipt requested, and addressed to the intended recipient at the address shown in this agreement. Notice may also be given by regular mail, personal delivery, courier delivery, facsimile transmission or other commercially reasonable means and will be effective when actually received. Any address for notice may be changed by written notice delivered as provided herein.

(g) This agreement may be amended, modified or terminated, in whole or in part, only by the written agreement of the parties hereto.

When the context requires, singular nouns and pronouns include the plural.

NEW BRAUNFELS CHRISTIAN ACADEMY, INC.

By: _____
Name: Gregory Sekula
Title: President of the NBCA Board of Trustees

Accepted and Agreed by Grantee:

HOLLMIG FAMILY PARTNERSHIP, LTD.

By: _____
S. Craig Hollmig, Manager

THE STATE OF TEXAS §

COUNTY OF COMAL §

This instrument was acknowledged before me on zMay 31st, 2011, by GREGORY SEKULA, President of NEW BRAUNFELS CHRISTIAN ACADEMY, INC., on behalf of same and in the capacity herein stated.

BRENDA ARRAZATE
Notary Public
STATE OF TEXAS
My Comm. Exp. 05-31-2013

Notary Public, State of Texas

THE STATE OF TEXAS §

COUNTY OF COMAL §

This instrument was acknowledged before me on May 31st, 2011, by S. CRAIG HOLLMIG, Manager of HOLLMIG FAMILY PARTNERSHIP, LTD., a Texas limited partnership, on behalf of same and in the capacity herein stated.

Notary Public, State of Texas

BRENDA ARRAZATE
Notary Public
STATE OF TEXAS
My Comm. Exp. 05-31-2013

Prepared in the Law Offices of:

John T. Dierksen
REAGAN BURRUS PLLC
401 Main Plaza, Suite 200
New Braunfels, TX 78130

Being a 15.156 acre tract of land out of the Luis Salinas Survey No. 458, Abstract No. 531, Comal County, Texas, and being a portion of a tract of land called 27.172 acres described in Doc# 200406025466, Official Public Records, Comal County, Texas, said 15.156 acre tract of land being more particularly described as follows:

Beginning at a ½" iron pin found in the Northwest line of F.M. Hwy 1863, for the East corner of Sitman property described in Vol. 162, Pg. 536, Deed Records, Comal County, Texas, for the South corner of the above referenced 27.172 acre tract of land, for the South corner and Point of Beginning of this tract;

Thence departing F.M. Hwy 1863, along the common line of this tract and said Sitman property, N 37°02'09" W a distance of 497.22 feet to a ½" iron pin found in the Southeast line of Lot 13, Block 1, T Bar M Ranch Estates, Unit II, recorded in Vol. 12, Pgs. 318-319, Map and Plat Records, Comal County, Texas, for the West corner of said 27.172 acre tract of land, for the West corner of this tract;

Thence along the Common line of this tract, partially along the Northwest line of said 27.172 acre tract of land, partially along the Southeast line of said T Bar M Ranch Estates, Unit II, and also partially along the Southeast line of T Bar M Ranch Estates Unit I, recorded in Vol. 5, Pgs. 277-278, Map and Plat Records, Comal County, Texas, the following calls:

N 53°56'50" E a distance of 79.85 feet to a ½" iron pin found for the East corner of said T Bar M Ranch Estates Unit II, for the South corner of Lot 12, of said T Bar M Ranch Estates, Unit I, for a corner of this tract;

N 54°05'21" E a distance of 179.96 feet to a ½" iron pin set for a corner of this tract;

N 53°53'31" E a distance of 179.93 feet to a ½" iron pin found for a corner of this tract;

N 53°41'59" E a distance of 179.67 feet to a ½" iron pin found for a corner of this tract;

N 53°51'31" E a distance of 179.72 feet to a ½" iron pin found at the South corner of Lot 7A Amending Plat of Lot 7A, Block 1, T Bar M Ranch Estates, Unit I, recorded in Vol. 10, Pg. 22, Map and Plat Records, Comal County, Texas, for a corner of this tract;

N 54°05'48" E a distance of 179.22 feet to a ½" iron pin found for a corner of this tract;

N 53°40'58" E a distance of 179.68 feet to a ½" iron pin found for the East corner of said Lot 7A, for a corner of this tract;

N 53°56'22" E a distance of 62.07 feet to a ½" iron pin stamped "HMT PROP. COR." set in the Southeast line of Lot 6 Block 1, of said T Bar M Ranch Estates, Unit I, for the North corner of this tract;

Thence across said 27.172 acre tract of land, the following calls:

S 36°17'18" E a distance of 335.92 feet to a ½" iron pin stamped "HMT PROP. COR." set for the West corner of a tract of land called 1.0 acres described in Vol. 113, Pg. 235, Deed Records, Comal County, Texas, for a corner of said 27.172 acre tract of land, for a corner of this tract;

S 31°30'48" E a distance of 256.51 feet to a ½" iron pin stamped "HMT PROP. COR." set in the Northwest line of F.M. Hwy No. 1863, for the South corner of said 1.0 acre tract of land, for a corner of said 27.172 acre tract of land, for the East corner of this tract;

Thence along the Northwest line of said F.M. Hwy No. 1863, S 58°25'17" W a distance of 1196.29 feet to the Point of Beginning and containing 15.156 acres of land.

Bearings are rotated to the Southwest line of said 27.172 acre tract (N 37°02'09" W) according to Doc. No. 200406025466, Official Public Records, Comal County, Texas.

EXHIBIT "A"

METES AND BOUNDS DESCRIPTION
FOR A 0.205 ACRE 20 FOOT UTILITY EASEMENT

Being a 0.205 acre 20 foot utility easement out of the Luis Salinas Survey No. 458, Abstract No. 531, Comal County, Texas, and being a portion of a tract of land called 27.172 acres described in Doc# 200406025466, Official Public Records, Comal County, Texas, said 0.205 acre utility easement being more particularly described as follows:

Beginning at a ½" iron pin set in the Northwest line of F.M. Hwy No. 1863, for the East corner of a 1.0 acre tract of land, described in Vol. 113, Pg. 235, Deed Records, Comal County, Texas, for a corner of the above referenced 27.172 acre tract of land, for the most Easterly corner and Point of Beginning of this utility easement;

Thence departing F.M. Hwy No. 1863, along the common line of said 27.172 acre tract of land and said 1.0 acre tract of land, the following calls:

N. 31° 36' 20" W. a distance of 256.14 feet to a point for an interior corner of this utility easement;

S. 58° 32' 44" W. a distance of 170.42 feet to a ½" iron pin stamped "HMT PROP. COR." set at the West corner of said 1.0 acre tract of land, for a corner of this utility easement;

Thence across said 27.172 acre tract of land, the following calls:

N. 36° 17' 18" W. a distance of 20.07 feet to a point for the most Westerly corner of this utility easement;

N. 58° 32' 44" E. a distance of 192.06 feet to a point for the most Northerly corner of this utility easement;

S. 31° 36' 20" E. a distance of 276.10 feet to a point in the Northwest line of F.M. Hwy No. 1863, for the most Easterly corner of this utility easement;

Thence along the Northwest line of F.M. Hwy No. 1863, S. 58° 25' 17" W. a distance of 20.00 feet to the Point of Beginning and containing 0.205 acres of land within this utility easement.

Bearings are rotated to the Southwest line of said 27.172 acre tract (N. 37° 02' 09" W.) according to Doc# 200406025466, Official Public Records, Comal County, Texas.

METES AND BOUNDS DESCRIPTION
FOR A 0.421 ACRE 20 FOOT UTILITY EASEMENT

Being a 0.421 acre 20 foot utility easement out of the Luis Salinas Survey No. 458, Abstract No. 531, Comal County, Texas, and being a portion of a tract of land called 27.172 acres described in Doc# 200406025466, Official Public Records, Comal County, Texas, said 0.421 acre utility easement being more particularly described as follows:

Beginning at a ½" iron pin found in the Southeast line of a 25.00 acre tract of land described in Vol. 166, Pg. 300, Deed Records, Comal County, Texas, for the North corner of the above referenced 27.172 acre tract of land, for the North corner and Point of Beginning of this utility easement;

Thence along the Northeast line of said 27.172 acre tract of land S. 36° 40' 40" E. a distance of 20.00 feet to a point for the East corner of this utility easement;

Thence across said 27.172 acre tract of land, the following calls:

S. 53° 53' 33" W. a distance of 197.05 feet to a point for a corner of this utility easement;

S. 53° 48' 10" W. a distance of 532.36 feet to a point for a corner of this utility easement;

S. 53° 56' 22" W. a distance of 187.91 feet to a point for the South corner of this utility easement;

N. 36° 07' 22" W. a distance of 20.00 feet to a point in the Southeast line of Lot 6, Block 1, T Bar M Ranch Estates, Unit I, recorded in Vol. 5, Pgs. 277-278, Map and Plat Records, Comal County, Texas, for the West corner of this utility easement;

Thence partially along the Southeast line of said T Bar M Ranch Estates, Unit I, and partially along the Southeast line of a 25.00 acre tract of land described in Vol. 166, Pg. 300, Deed Records, Comal County, Texas, the following calls:

N. 53° 56' 22" E. a distance of 187.91 feet to a point for a corner of this utility easement;

N. 53° 48' 10" E. a distance of 532.36 feet to a concrete monument found at the common center of said T Bar M Ranch Estates, Unit I, and said 25.00 acre tract of land, for a corner of this utility easement;

N. 53° 53' 33" E. a distance of 196.87 feet to the Point of Beginning and containing 0.421 acres of land within this utility easement.

Bearings are rotated to the Southwest line of said 27.172 acre tract (N. 37° 02' 09" W.) according to Doc# 200406025466, Official Public Records, Comal County, Texas.

BEING A 15.156 ACRE TRACT OF LAND, A 0.421 ACRE SEWER LINE EASEMENT AND A 0.205 ACRE WATER LINE EASEMENT, ALL OUT OF THE LUIS SALINAS SURVEY NO. 458, ABSTARCT NO. 531, COMAL COUNTY, TEXAS, AND ALL BEING A PORTION OF A TRACT OF LAND CALLED 27.172 ACRES DESCRIBED IN DOC# 200406025466, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS

REFERENCE FIRST AMERICAN TITLE G.F.# 1506793-5463, EFFECTIVE DATE 3/9/2011

REFERENCE RESTRICTIONS DOC# 200406025466, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS (NO BUILDING (A STRUCTURE WITH WALLS AND A ROOF) WHETHER TEMPORARY OR PERMANENT MAY BE PLACED OR ERECTED NEARER THAN 50 FEET FROM ANY CONTIGUOUS PROPERTY OWNED BY GRANTOR)

REFERENCE ELEC. LINE R.O.W. VOL. 584, PG. 777, DEED RECORDS, COMAL COUNTY, TEXAS (DOES NOT APPLY TO 15.156 AC TRACT)

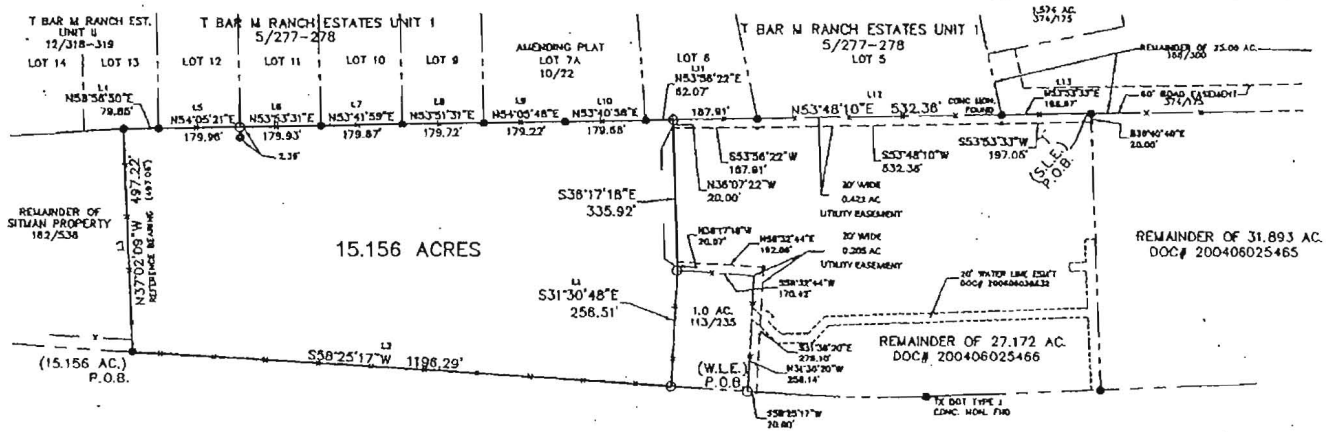
REFERENCE WATER LINE EASEMENT DOC# 200606030832, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS (SHOWN ON PLAT)

REFERENCE UTILITY LINE DOC# 200606026905, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS (DOES NOT APPLY TO 15.156 AC TRACT)

DEED CALLS DOC# 200406025466		
Line #	Length	Bearing
L1	256.06	S31° 32' 42"E
L2	1196.34	S58° 24' 53"W
L3	497.06	N37° 02' 09"W
L4	75.98	N53° 53' 36"E
L5	179.76	N54° 04' 28"E
L6	180.67	N53° 58' 38"E
L7	179.78	N53° 39' 11"E
L8	179.60	N53° 20' 21"E
L9	179.38	N54° 03' 19"E
L10	179.74	N53° 38' 38"E
L11	258.88	N53° 57' 12"E
L12	530.32	N53° 47' 48"E
L13	197.82	N53° 53' 33"E

LEGEND:
- O = SET 1/2" IRON PIN W/ A PLASTIC CAP STAMPED "HMT PROP. COR." UNLESS OTHERWISE NOTED
- ● = FND 1/2" IRON PIN
- ——— = FENCE
- P.O.B. = POINT OF BEGINNING
- ( ) = DEED CALLS (DOC# 200406025465)
- W.L.E.= WATER LINE EASEMENT
- S.L.E.= SEWER LINE EASEMENT

SCALE 1"=200'



HMT
ENGINEERING & SURVEYING
HOLLUMS - MOELLER - THORNHILL
410 N. SEGUIN AVE.
NEW BRAUNFELS,
TEXAS, 78130
www.HMTNB.com
PH:(830)625-8555
FAX:(830)625-8556

STATE OF TEXAS
THOR THORNHILL
6177
REGISTERED PROFESSIONAL LAND SURVEYOR

THIS SURVEY IS CERTIFIED TO: HOLLAND FAMILY PARTNERSHIP, NEW BRAUNFELS CHRISTIAN ACADEMY, INC. AND FIRST AMERICAN TITLE

STATE OF TEXAS
COUNTY OF COMAL

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THIS SURVEY IS TRUE AND CORRECT ACCORDING TO AN ACTUAL SURVEY MADE ON THE GROUND UNDER MY SUPERVISION AND THAT ALL OBSERVABLE EVIDENCE OF EASEMENTS ON THE GROUND ARE SHOWN AND ALL OBSERVABLE EVIDENCE OF BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE PREMISES ARE SHOWN

THIS 10TH DAY OF MARCH 2011

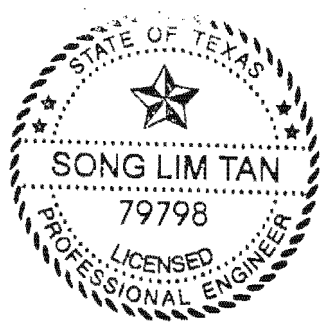
THOR THORNHILL
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6177

ASB377.111

Exhibit "D"

Filed and Recorded
Official Public Records
Joy Streater, County Clerk
Comal County, Texas
05/31/2011 02:56:58 PM
CASHFOUR
201106018421

Joy Streater



8/9/13

POLLUTANT LOAD AND REMOVAL CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations

Project: ***New Braunfels Christina Academy***
Watershed: *A*

Input By User
Automatically Calculated Variables

Job No.: 6338-02
Date: 8/8/2013

1. Calculate Required Load Reduction

$Lm = 27.2(An \times P)$

where:

Lm = Required TSS removal from proposed development
An = Net increase in impervious area for project
P = Average annual precipitation, inches

Site Data:

County =	Comal	
Basin watershed area =	5.95	acres
Predevelopment impervious area =	0.00	acres
Post-development impervious area =	3.03	acres
Post-development impervious fraction=	0.51	
P =	33	inches

Lm = **2,719.73** **lbs** ← **0.00** **lbs** included for overtreatment of uncaptured area

2. Select BMP

Proposed BMP = RI abbreviation
Removal efficiency = 100 percent

AC= Aqualogic™ Cartridge Filter
BR= Bioretention
CW= Constructed Wetland
RI= Retention / Irrigation
SF= Sand Filter
WB= Wet Basin

3. Calculate TSS Load Removed by BMP

Lr = (BMP efficiency) x P x (Ai x 34.6 + Ap x 0.54)

where:

Lr = TSS Load removed by BMP
Ai = Impervious area of BMP catchment
Ap = Pervious area of BMP catchment

Ai =	3.03	acres
Ap =	2.92	acres
Lr =	**3,511.69**	**lbs**

4. Calculate Fraction of Annual Runoff to Treat

F = **0.77** OK

5. Calculate Capture Volume

Rainfall Depth =	**0.97**	inches
Post-development Runoff Coefficient =	**0.36**	
Runoff Volume =	**7,613**	cubic feet
Storage for Sediment=	**1,523**	cubic feet

Total Capture Volume **9,136** **cubic feet**

6. Calculate Sand Area Required

Af= WQV/10 (for systems combining filtration and sedimentation in a single basin; Partial Sedimentation)
Af= WQV/18 (for systems combining filtration and sedimentation in a separate basins; Full Sedimentation)

Required Sand Area **761** **square feet** ☑ Check if Partial Sedimentation Is Used

Required Sand Area **423** **square feet** ☐ Check if Full Sedimentation Is Used

Texas Commission on Environmental Quality

TSS Removal Calculations

Project: ***New Braunfels Christina Academy***
Watershed: *OVT*

Input By User
Automatically Calculated Variables

Job No.: 6338-02
Date: 8/8/2013

Uncaptured Required Load Reduction

$Lm = 27.2(An \times P)$

where:

Lm = Required TSS removal from proposed development
An = Net increase in impervious area for project
P = Average annual precipitation, inches

Site Data:

County =	Comal	
Uncaptured watershed area =	0.07	acres
Predevelopment impervious area =	0.00	acres
Post-development impervious area =	0.07	acres
Post-development impervious fraction=	1.00	
P =	33	inches

Lm = 62.83 lbs

Texas Commission on Environmental Quality

TSS Removal Calculations

Project: ***New Braunfels Christina Academy***
Watershed: *A w/OVT*

Input By User
Automatically Calculated Variables

Job No.: 6338-02
Date: 8/8/2013

1. Calculate Required Load Reduction

$Lm = 27.2(An \times P)$

where:

Lm = Required TSS removal from development
An = Net increase in impervious area for project
P = Average annual precipitation, inches

Site Data:

County =	Comal	
Basin watershed area =	5.95	acres
Predevelopment impervious area =	0.00	acres
Post-development impervious area =	3.03	acres
Postdevelopment impervious fraction=	0.51	
P =	33	inches

Lm = 2,782.56 lbs ← **62.83 lbs** included for overtreatment of uncaptured area

2. Select BMP

Proposed BMP = RI abbreviation
Removal efficiency = 100 percent

AC= Aqualogic™ Cartridge Filter
BR= Bioretention
CW= Constructed Wetland
RI= Retention / Irrigation
SF= Sand Filter
WB= Wet Basin

3. Calculate TSS Load Removed by BMP

$LR = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

where:

LR = TSS Load removed by BMP
Ai = Impervious area of BMP catchment
Ap = Pervious area of BMP catchment

Ai =	3.03	acres
Ap =	2.92	acres
Lr =	**3,511.69**	**lbs**

4. Calculate Fraction of Annual Runoff to Treat

F = 0.79 OK

5. Calculate Capture Volume

Rainfall Depth =	1.04	inches
Post Development Runoff Coefficient =	0.36	
Runoff Volume =	8,146	cubic feet
Storage for Sediment=	1,629	

Total Capture Volume 9,775 **cubic feet**

6. Calculate Sand Area Required

Af= WQV/10 (for systems combining filtration and sedimentation in a single basin)
Af= WQV/18 (for systems combining filtration and sedimentation in a separate basins)

Required Sand Area 815 **square feet** ☑ Check if Partial Sedimentation Is Used

Required Sand Area 453 **square feet** ☐ Check if Full Sedimentation Is Used

NEW BRAUNFELS CHRISTIAN ACADEMY
Irrigation System Calculations

Per TCEQ's Technical Guidance Manual (TGM) RG-348 (2005), Section 3.4.3:

$$A = \frac{12\ x\ V}{T\ x\ R}$$

Where :

A = area required for irrigation (ft2)
V = water quality volume (ft3) = 9,775 cubic feet
T = period of active irrigation (30 hr)
r = Permeability (in/hr) = 0.1 in/hr

$$A = \frac{(12)(9{,}775)}{(30)(0.1)} = \frac{117{,}300}{3} = 39{,}100\ SF\ or\ 0.90\ AC$$

Required irrigation area = **0.90 acres**

Approximate irrigation area provided = **1.25 acres**

EXHIBIT A

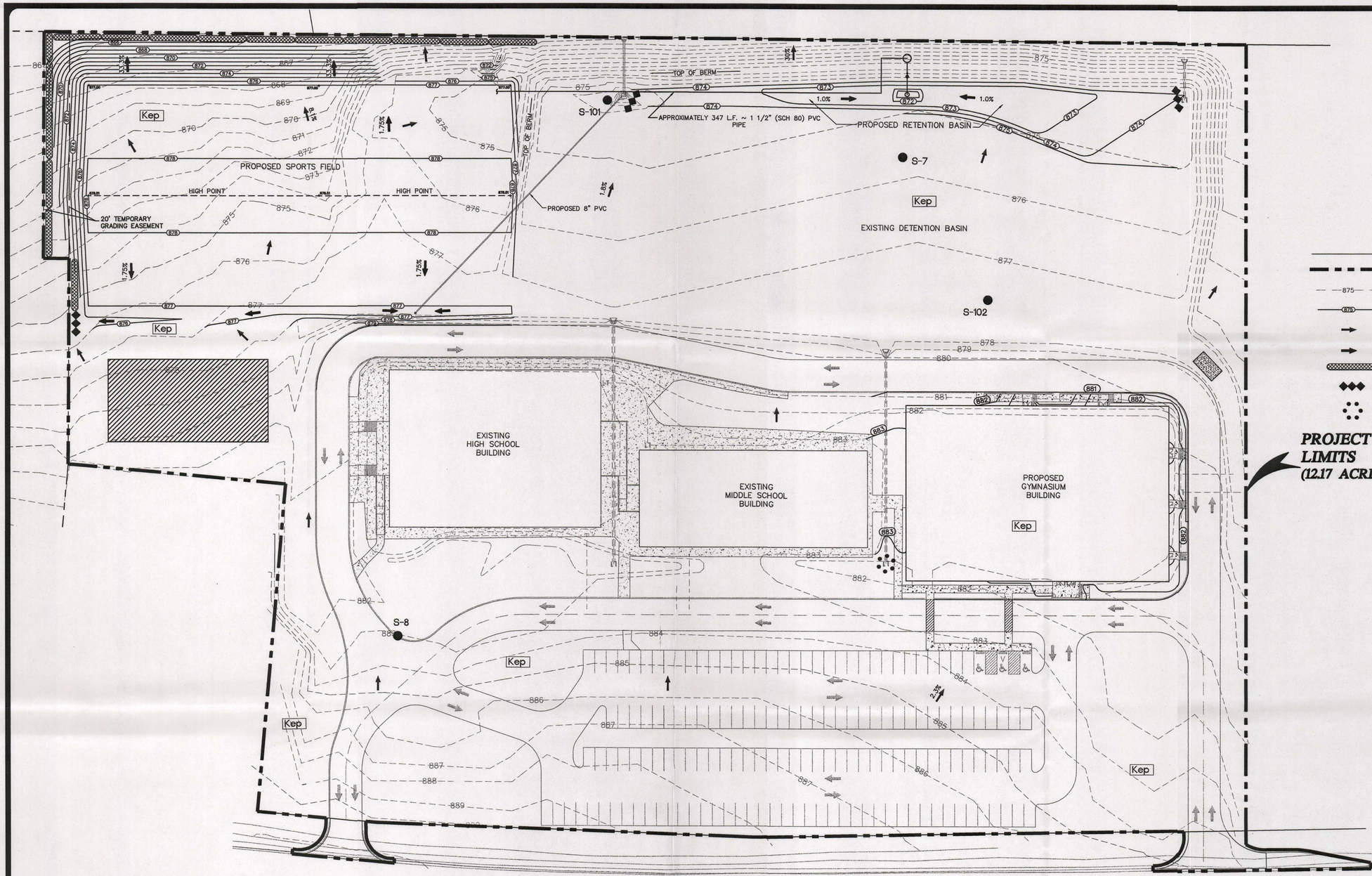
REVISIONS:

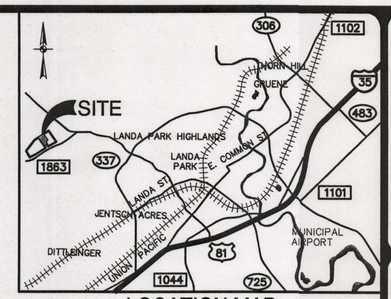
PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

NEW BRAUNFELS CHRISTIAN ACADEMY
WATER POLLUTION ABATEMENT PLAN
MODIFICATION
EXISTING CONDITIONS EXHIBIT

JOB NO. 6338-02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 of 1

Date: Aug 07, 2013, 4:54pm User ID: ROlivarez
File: P:\63\38\02\Design\Environmental\WPAP\EC63J3802.dwg





LOCATION MAP
NOT-TO-SCALE

LEGEND

- PROJECT LIMITS
- 875 EXISTING CONTOURS
- 876 PROPOSED CONTOURS
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SEDIMENT CONTROL WATTLES
- ROCK BERM
- INLET PROTECTION
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- Kek PERSON FORMATION
- S-7 POTENTIAL RECHARGE FEATURE

PROJECT LIMITS (12.17 ACRES)

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 MAY BE 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 OFF-SITE 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 EDWARDS AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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.

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

SCALE: 1"= 40'
0' 40' 80' 120'

GENERAL NOTES:

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. LOCATIONS OF CONSTRUCTION ENTRANCE/EXITS, CONCRETE WASHOUT PITS, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARDS TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPOISIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. CONTRACTOR, TO THE DTENT PRACTICAL, SHALL MINIMIZE THE AMOUNT OF AREA DISTURBED. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

7. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

8. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATER SHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED.

9. ALL TEMPORARY BMP'S WILL BE REMOVED ONCE WATERSHED IS STABILIZED.

10. MUD OR DIRT INADVERTENTLY TRACKED OFF SITE AND ONTO EXISTING STREETS SHALL BE REMOVED IMMEDIATELY BYHAND OR MECHANICAL BROOM SWEEPING.

11. PRIOR TO INITIATION IF SUBSEQUENT PHASES OF CONSTRUCTION, TEMPORARY BMP's INCLUDING SILT FENCING, CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND CONSTRUCTION STAGING AREA SHALL BE FIELD LOATED AS APPROPRIATE FOR THE AREA OF CONSTRUCTION.

12. TEMPORARY POLLUTION ABATEMENT MEASURES SHOWN ON THE PLAN ARE FOR THE OVERALL DEVELOPMENT. TEMPORARY BMP's MAY REQUIRE ADJUSTMENT BASED ON PHASING OF CONSTRUCTION OF THE DEVELOPMENT. RECORDS OF ADJUSTMENTS AND REVISIONS SHALL BE MAINTAINED ON THIS SHEET AS APPROPRIATE.

13. TEMPORARY BMP's SHOWN ON THIS SHEET ARE FOR GRAPHICAL PURPOSES AND MAY NOT BE TO SCALE. BMP's SHALL BE LOCATED WITHIN THE PROJECT LIMITS.

14. UPON COMPLETION OF A PHASE AND BEFORE FINAL PAYMENT IS ISSUED FOR A PARTICULAR PHASE, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES.

15. MUD OR DIRT INADVERTENTLY TRACKED ONTO EXISTING STREETS AND DRIVES SHALL BE REMOVED IMMEDIATELY BY HAND OR MECHANICAL BROOM SWEEPING.

TEMPORARY POLLUTION ABATEMENT NOTES:

1. ROCK BERMS SHALL BE PLACED IN AREAS WHERE DRAINAGE FLOW IS CONCENTRATED DUE TO NATURAL CONDITIONS OR CONSTRUCTION ACTIVITIES SUCH AS AT DRAINAGE STRUCTURES. THESE BERMS WILL BE MAINTAINED UNTIL THEY ARE NO LONGER NEEDED OR UNTIL THEY ARE REPLACED WITH PERMANENT POLLUTION ABATEMENT MEASURES.

TEMPORARY BMP MODIFICATIONS

SIGNATURE	DATE	DESCRIPTION

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 1

NO.	REVISION	DATE

STATE OF TEXAS
SONG LIM TAN
79798
LICENSED
PROFESSIONAL ENGINEER
8/9/13

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

NEW BRAUNFELS CHRISTIAN ACADEMY

NEW BRAUNFELS, TEXAS

WATER POLLUTION ABATEMENT PLAN MODIFICATION
TEMPORARY WATER POLLUTION ABATEMENT PLAN

TCEQ-R13
AUG 14 2013
SAN ANTONIO

PLAT NO. _____
JOB NO. 6338-02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 OF 1

Date: Aug 09, 2013, 9:02am User ID: FDeLeon
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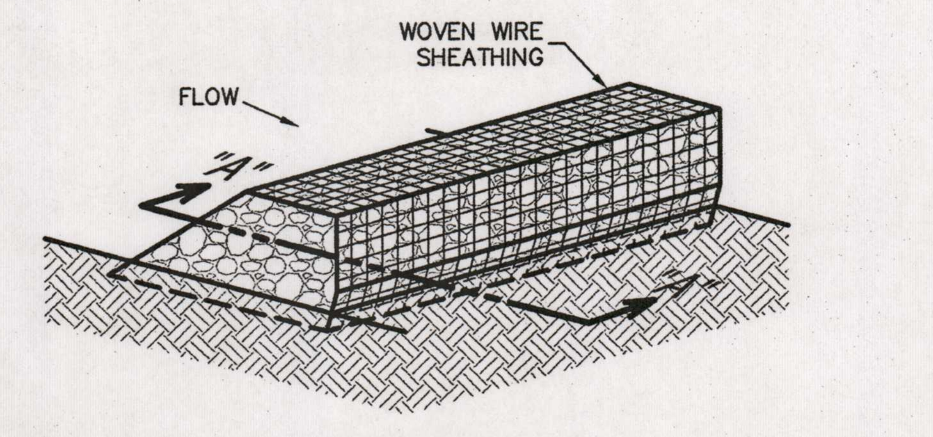
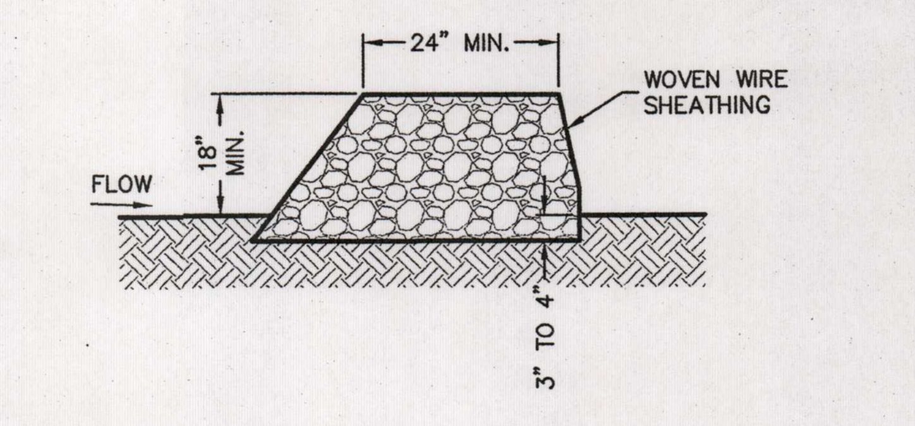


ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT–LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES
1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3–INCH TO 5–INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5–INCH TO 8–INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION
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 THE 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 UPON.

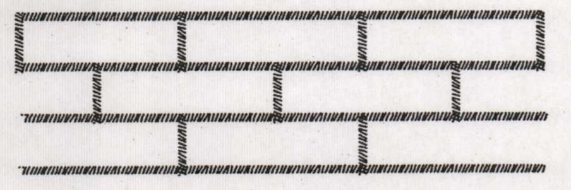
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

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.

COMMON TROUBLE POINTS
1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

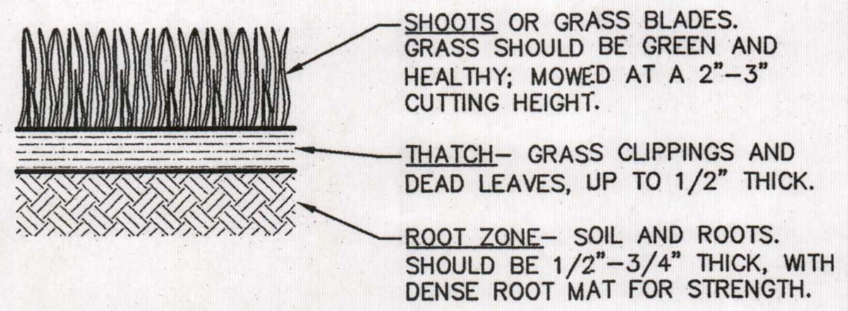
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL
NOT–TO–SCALE



LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

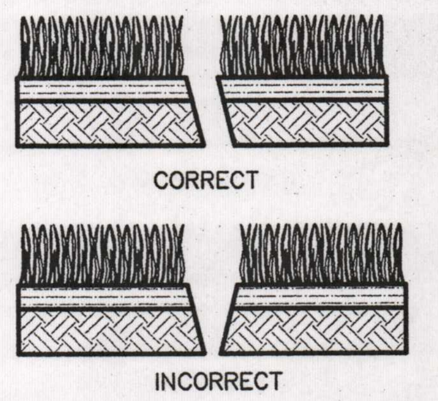
BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



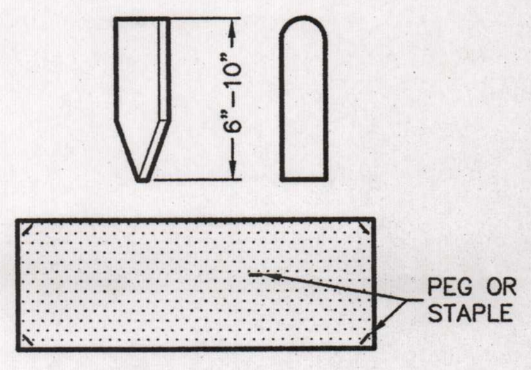
APPEARANCE OF GOOD SOD
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

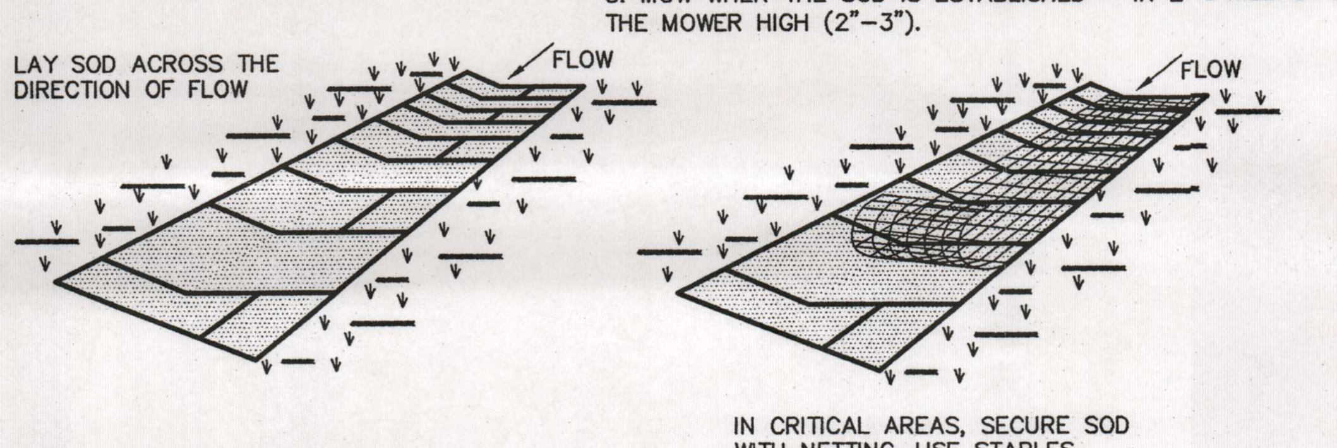
3. MOW WHEN THE SOD IS ESTABLISHED – IN 2–3 WEEKS. SET THE MOWER HIGH (2"–3").



SOD INSTALLATION



USE PEGS OR STAPLES TO FASTEN SOD FIRMLY – AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3–4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.



IN CRITICAL AREAS, SECURE SOD WITH NETTING. USE STAPLES.

MATERIALS
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION
1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTIRLIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS
1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)
1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.

3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXCERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGLY WET.

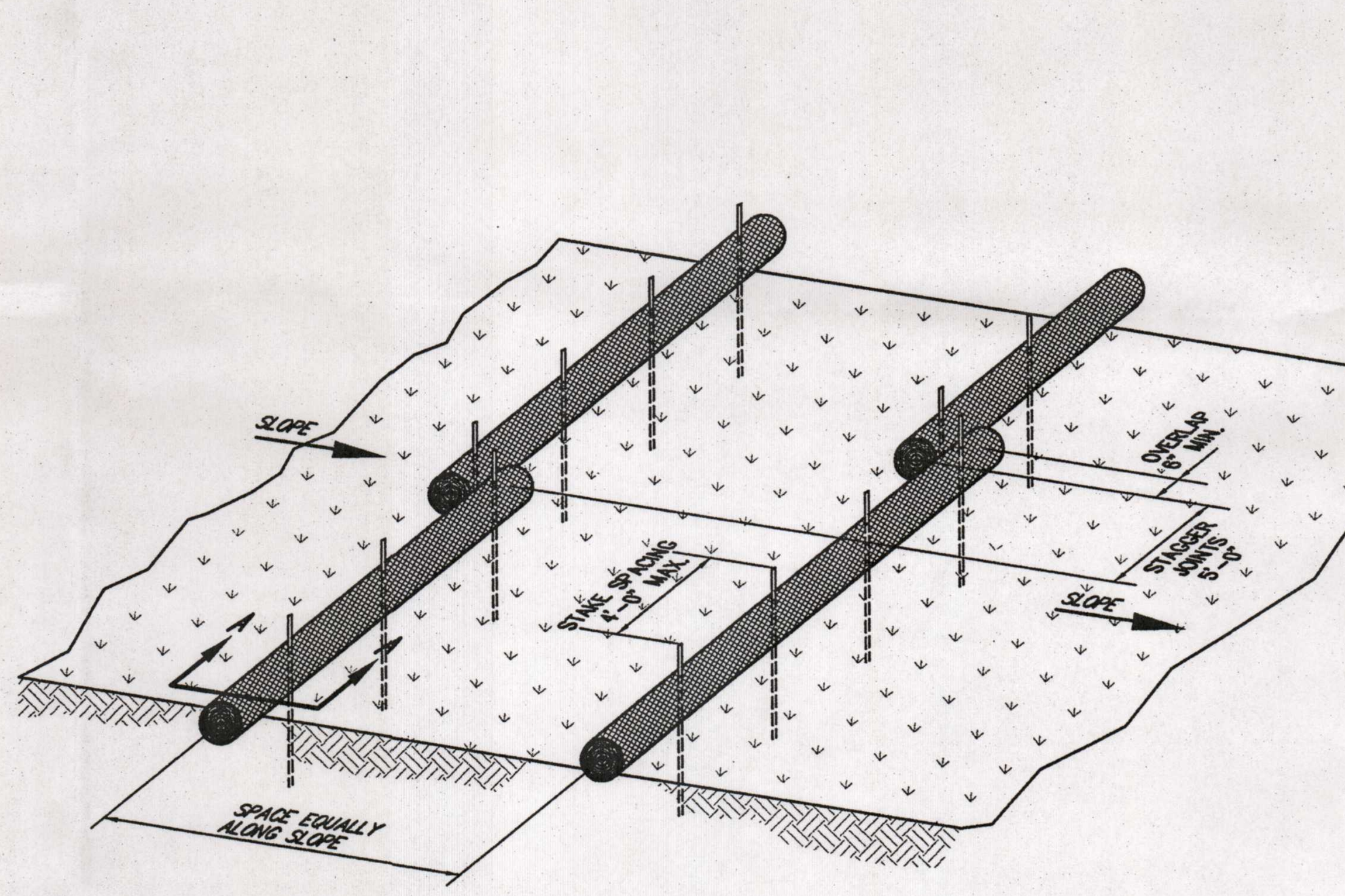
7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2–3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

INSPECTION AND MAINTENANCE GUIDELINES
1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL
NOT–TO–SCALE



ISOMETRIC PLAN VIEW
NOT–TO–SCALE

MAXIMUM WATTLE SPACING

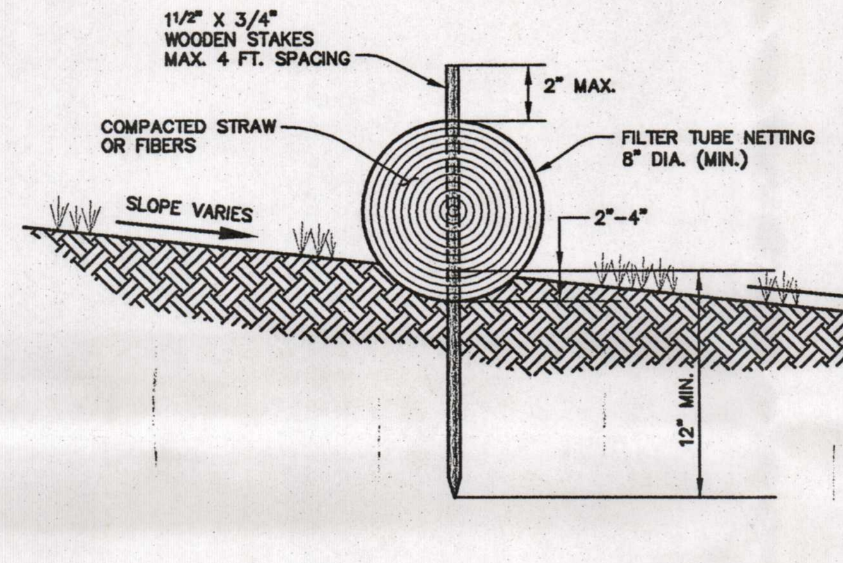
SLOPE	TUBE DIAMETER 8"	TUBE DIAMETER 12" OR GREATER
0%–2%	75 FT.	125 FT.
2%–5%	50 FT.	75 FT.
5%–10%	30 FT.	50 FT.

WATTLES
Wattles are elongated tubes of compacted straw and/or other fibers that are installed along contours or at the base of slopes to help reduce soil erosion and retain sediment. They function by shortening slope length, reducing runoff water velocity, trapping dislodged soil particles and reducing the effects of slope steepness.

MATERIALS
Core material: Core materials shall be biodegradable nad noxious weed free. Material may be compost, mulch, aspen excelsior wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, or other 100% biodegradable fibers.
Containment mesh: containment mesh shall be 100% biodegradable, photodegradable or recyclable such as burlap twine, UV photodegradable plastic or polyester.
Use biodegradable or photodegradable mesh when wattle will remain in place as part of a vegetative system. Use recyclable mesh for temporary installations.
Wattles shall have a minimum diameter of 8 inches and a maximum diameter of 20 inches.
No more than 5% of the fill material shall be permitted to escape from the containing mesh. Mesh shall be 0.5" x 0.5" high density polyethylene and ethyly vinyl acetate and contain ultra–violet inhibitors. Wattle ends shall be tied closed.

INSTALLATION
1. Remove all rocks, clods, vegetation or other obstructions so that the installed Wattles will have direct contact with the soil.
2. A small trench, 2–4 inches in depth should be excavated on the slope contour and perpendicular to water flow. Soil from the excavation should be placed upslope next to the trench.
3. Install the Wattles in the trench, insuring that no gaps exist between the soil and the bottom of the Wattle. Wattles should be lapped 6" minimum to prevent sediment passing through the field joint.
4. Wooden stakes should be used to fasten the Wattles to the soil. When conditions warrant, a straight metal bar can be used to drive a "pilot hole" through the Wattle and into the soil.
5. Wooden stakes should be placed 6" from the Wattle end angled towards the adjacent Wattle and spaced at 4 feet centers leaving less than 1–2 inches of stake exposed above the Wattle. Alternately, stakes may be placed on each side of the Wattle tying across with with a natural fiber twine or staking in a crossing manner ensuring direct soil contact at all times.
6. Terminal ends of Wattles may be "dog legged" up slope to ensure containment and prevent channeling of sediment.
7. Backfill the upslope length of the Wattle with the excavated soil and compact.
8. Care shall be taken during installation so as to avoid damage occurring to the Wattle as a result of the installation process. Should the Wattle be damaged during installation, a wooden stake shall be placed either side of the damaged area terminating the log segment.

INSPECTION AND MAINTENANCE
1. The Wattles shall be inspected after installation to insure that they are trenched–in and that no gaps exist under the Wattles or between adjacent ends of the Wattles.
2. Wattles shall be inspected after significant rainfall events. Rills or gullies upslope of the Wattle and any undercutting is to be repaired.



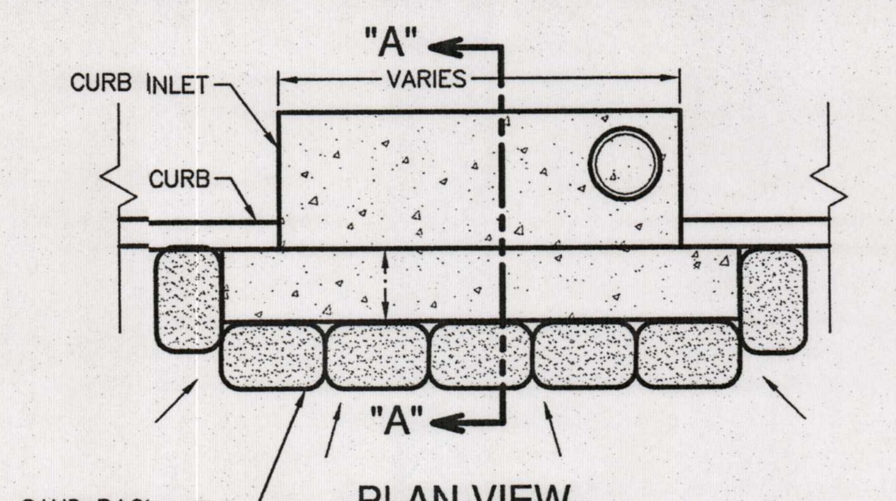
CROSS–SECTION 'A–A'
NOT–TO–SCALE

WATTLES IN A TEMPORARY EROSION CONTROL APPLICATION
When no longer required for the intended purpose, temporary Wattles shall be removed from the site. As an option, the straw Wattles may be slit down the length of the netting and the straw may be used on slopes or other areas.

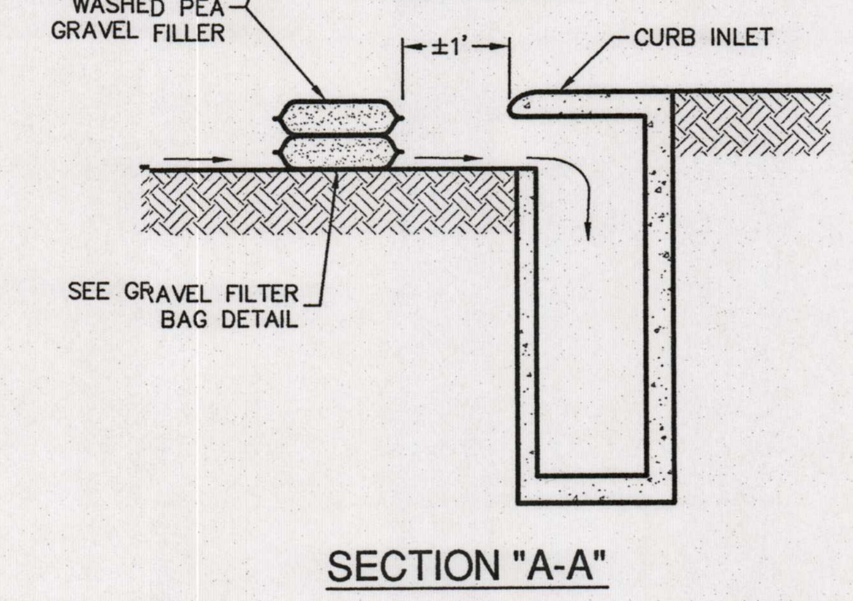
Trenches, depressions or any other ground disturbances caused by the removal of the temporary straw Wattles shall be backfilled and repaired with the excess sediment captured by the Wattle, prior to spreading the straw or other final erosion control protection.

WATTLES IN A PERMANENT EROSION CONTROL APPLICATION
Leave Wattles as installed to photodegrade or biodegrade over time as native and applied vegetation ultimately stabilize the repaired site.

SEDIMENT CONTROL WATTLES



PLAN VIEW



SECTION "A-A"

GENERAL NOTES
1. THE SANDBAGS SHOULD BE FILLED WITH WASH PEA GRAVEL AND STACKED TO FORM A CONTINUOUS BARRIER ABOUT 1–FOOT HIGH AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEENT HE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES
1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

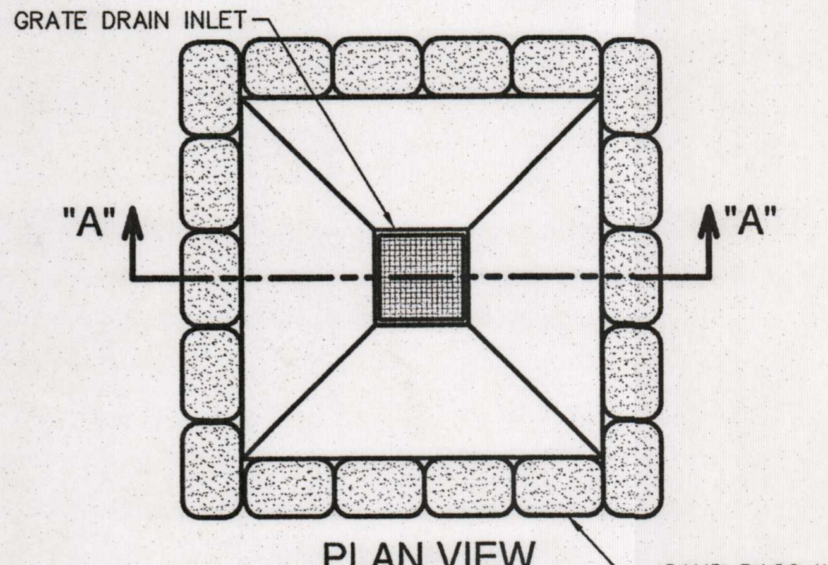
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

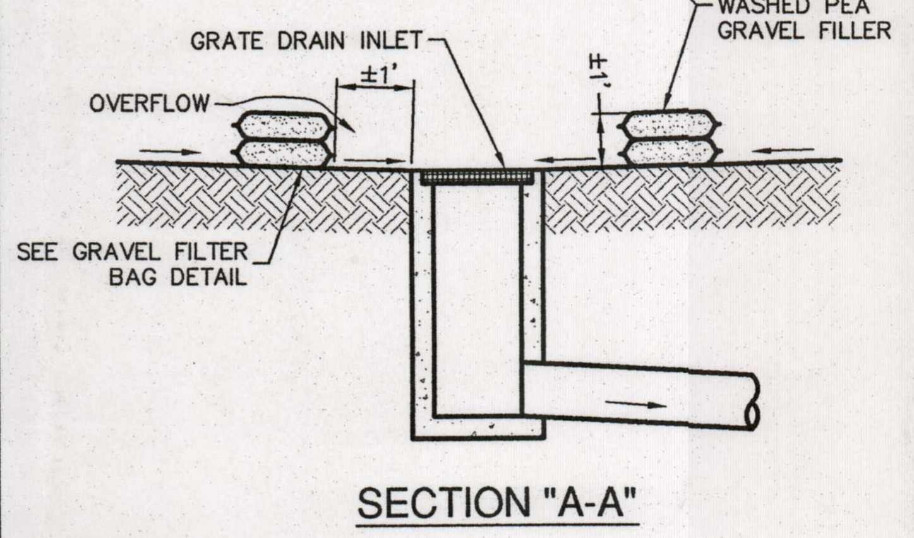
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL
NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES
1. THE SANDBAGS SHOULD BE FILLED WITH WASHED PEA GRAVEL AND STACKED TO FORM A CONTINUOUS BARRIER ABOUT 1 FOOT HIGH AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES
1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

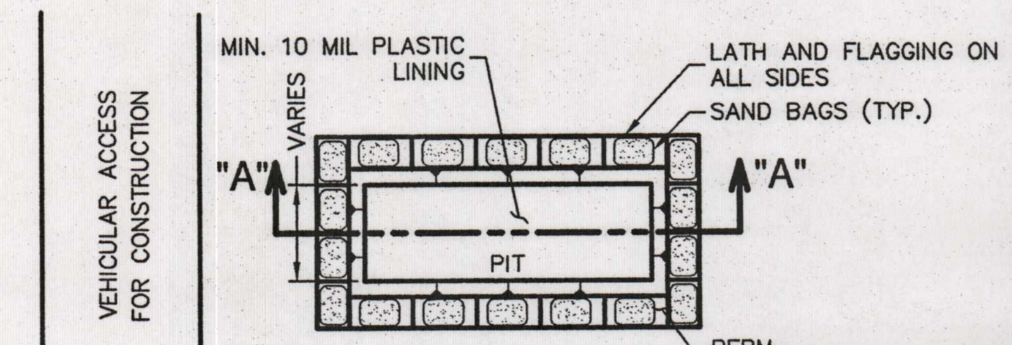
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MATTER THAT IT WILL NOT ERODE.

3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

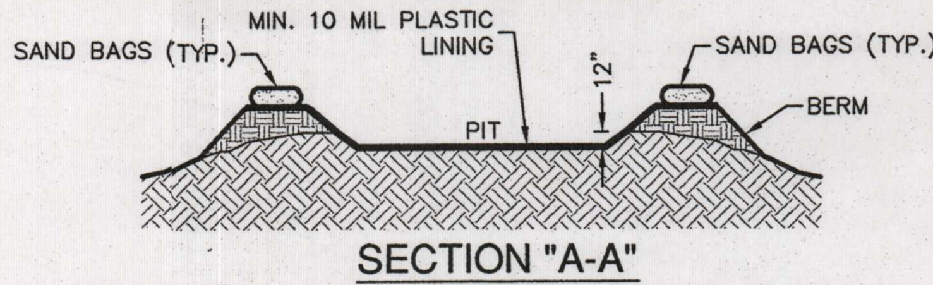
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL GRATE INLET PROTECTION DETAIL
NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES
1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

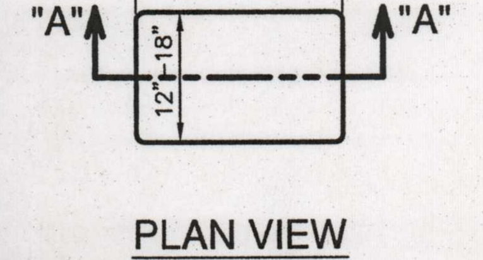
MATERIALS
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

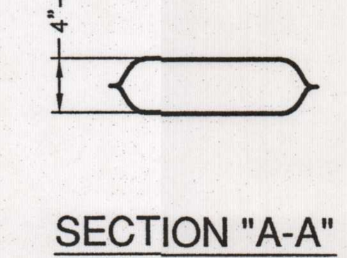
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL
NOT–TO–SCALE



PLAN VIEW



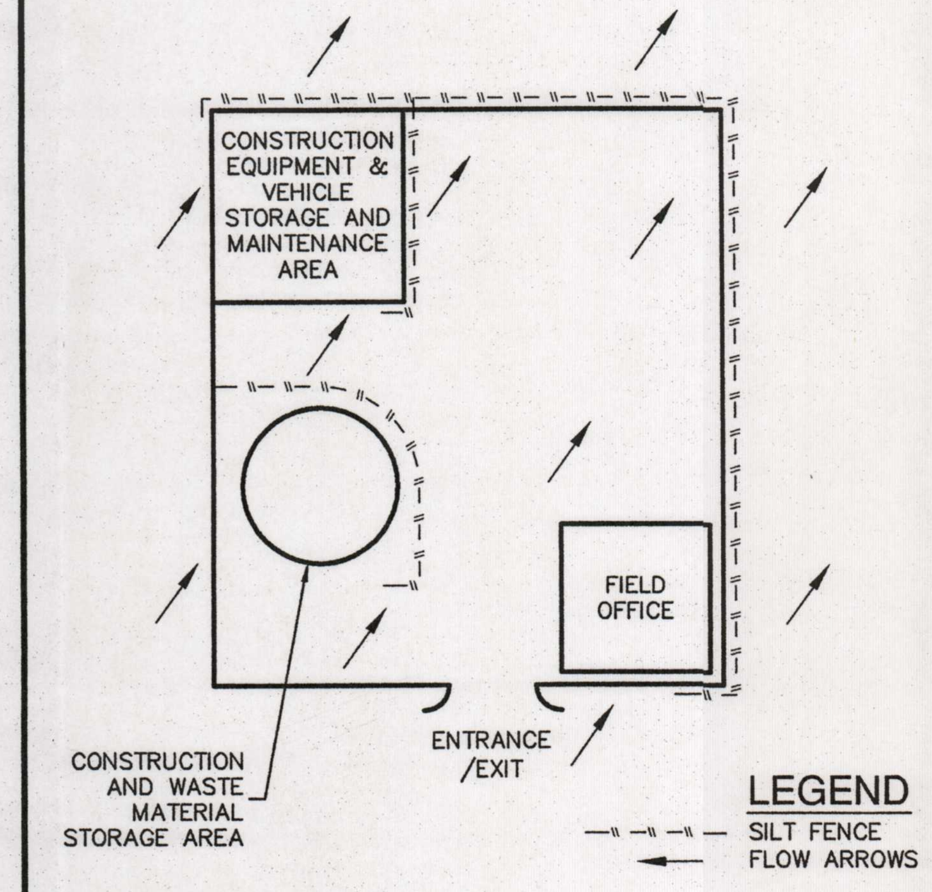
SECTION "A-A"

NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL
NOT–TO–SCALE



CONSTRUCTION STAGING AREA
NOT–TO–SCALE

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THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

NO.	REVISION	DATE

8/9/17

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

NEW BRAUNFELS CHRISTIAN ACADEMY
NEW BRAUNFELS, TEXAS
WATER POLLUTION ABATEMENT PLAN MODIFICATION
TEMPORARY WATER POLLUTION ABATEMENT PLAN TYPICAL DETAILS

TCEQ-R13
AUG 14 2013
SAN ANTONIO

PLAT NO.
JOB NO. 6338–02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 OF 1

Date: Aug 08, 2013, 6:07pm User ID: ROlivarez
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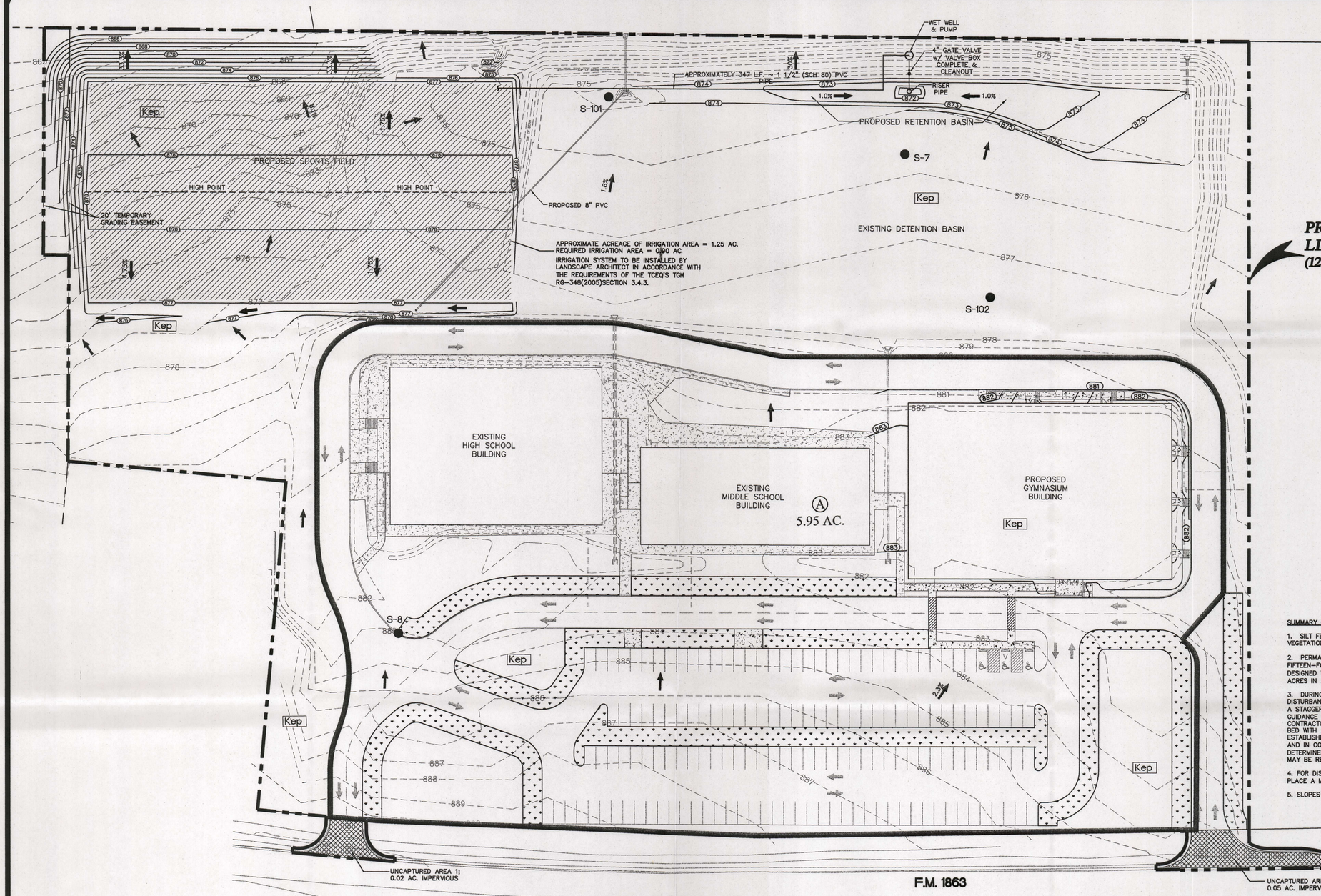

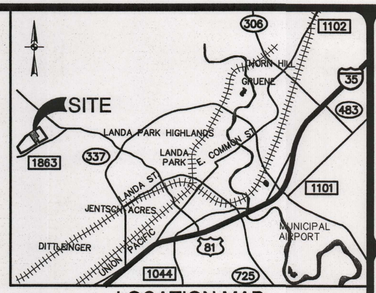

LOCATION MAP
NOT-TO-SCALE

LEGEND

- PROJECT LIMITS
- 875 EXISTING CONTOURS
- 875 PROPOSED CONTOURS
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- (A) WATERSHED DESIGNATION
- WATERSHED BOUNDARY
- UNCAPTURED AREA (TO BE OVERTREATED FOR IN RETENTION BASIN)
- IRRIGATION SYSTEM AREA
- 15' WIDE VEGETATIVE FILTER STRIP
- Kek PERSON FORMATION
- S-7 POTENTIAL RECHARGE FEATURE

SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURES:

1. SILT FENCE WILL BE MAINTAINED UNTIL THE SITE IMPROVEMENTS ARE COMPLETED AND SUFFICIENT VEGETATION HAS BEEN ESTABLISHED IN ACCORDANCE WITH APPLICABLE PROJECT SPECIFICATIONS.

2. PERMANENT BMP's FOR THIS SITE INCLUDE ONE (1) RETENTION BASIN/IRRIGATION SYSTEM AND FIFTEEN-FOOT (15') WIDE ENGINEERED VEGETATED FILTER STRIPS (VFS). ALL PERMANENT BMP's HAVE BEEN DESIGNED TO REMOVE AT LEAST 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FOR THE 12.17 ACRES IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL (TGM) RG-348 (2005).

3. DURING CONSTRUCTION, TO THE EXTENT PRACTICAL, CONTRACTOR SHALL MINIMIZE THE AREA OF SOIL DISTURBANCE. AREAS OF DISTURBED SOIL SHALL BE REVEGETATED TO STABILIZE SOIL USING SOLID SOD IN A STAGGERED PATTERN. SEE DETAIL ON EXHIBIT 2 AND REFER TO SECTION 1.3.11 IN TCEQ'S TECHNICAL GUIDANCE MANUAL RG-348 (2005). SOD SHOULD BE USED IN CHANNELS AND ON SLOPES >15%. THE CONTRACTOR MAY SUBSTITUTE THE USE OF SOD WITH THE PLACEMENT OF TOP SOIL AND A FRIABLE SEED BED WITH A PROTECTIVE MATTING OR HYDRAULIC MULCH ALONG WITH WATERING UNTIL VEGETATION IS ESTABLISHED. APPLICATIONS AND PRODUCTS SHALL BE THOSE APPROVED BY TXDOT AS OF FEBRUARY 2001 AND IN COMPLIANCE WITH THE TGM RG-348 (2005). SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER AND SHOULD BE IN COMPLIANCE WITH TGM RG-348 (2005) GUIDELINES. IRRIGATION MAY BE REQUIRED IN ORDER TO ESTABLISH SUFFICIENT VEGETATION.

4. FOR DISTURBED AREAS WHERE INSUFFICIENT SOIL EXISTS TO ESTABLISH VEGETATION, CONTRACTOR SHALL PLACE A MINIMUM OF 6" TOPSOIL PRIOR TO REVEGETATION.

5. SLOPES ON SITE VARY FROM APPROXIMATELY 1.75% TO 33.3%

TCEQ-R13
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SCALE: 1"= 40'
0' 40' 80' 120'

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EXHIBIT 3

NO.	REVISION	DATE

STATE OF TEXAS
SONG LIM TAN
79798
LICENSED
PROFESSIONAL ENGINEER
8/9/13

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

NEW BRAUNFELS CHRISTIAN ACADEMY

NEW BRAUNFELS, TEXAS

WATER POLLUTION ABATEMENT PLAN MODIFICATION
PERMANENT WATER POLLUTION ABATEMENT PLAN

PLAT NO.
JOB NO. 6338-02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 OF 1

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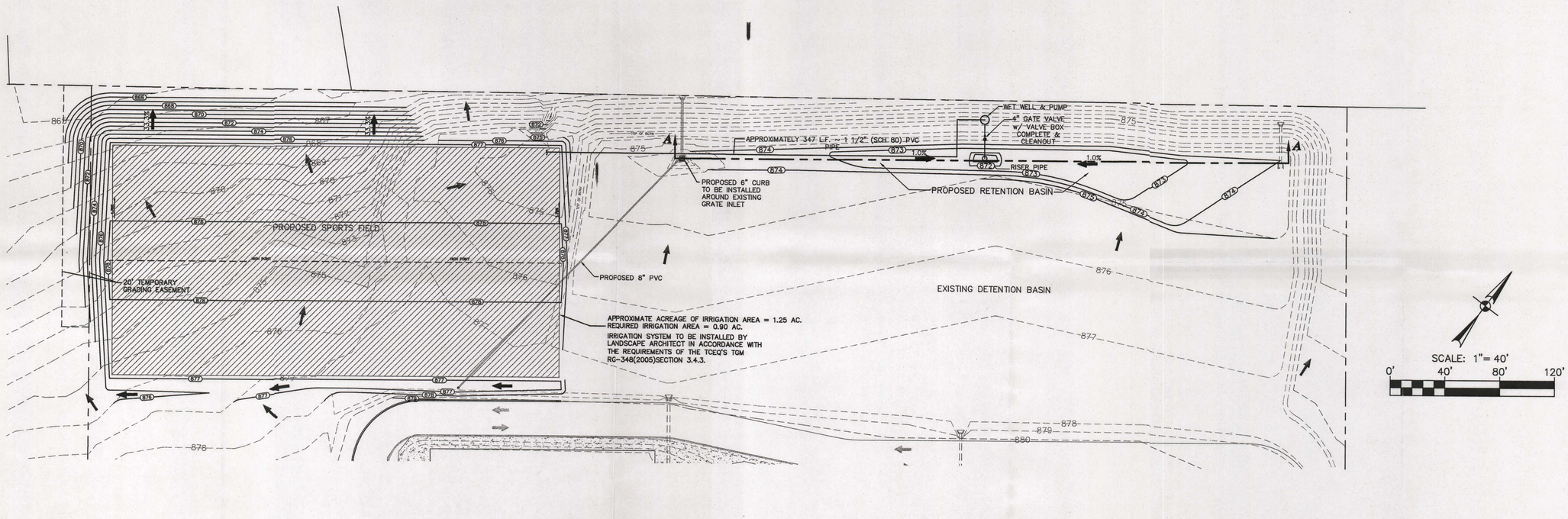

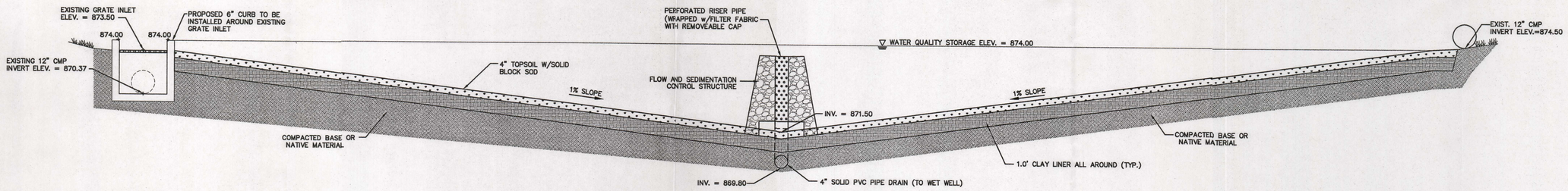

CROSS-SECTION "A-A"
NOT TO SCALE

TCEQ-R13
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BASIN DESIGN DATA

BASIN WATERSHED	= 259,182 SF (5.95 AC.)
RUN OFF DEPTH	= 1.04 INCH
REQUIRED CAPTURE VOLUME	= 9,775 CF
BASIN WATER STORAGE DEPTH	= 2.5 FT
BASIN CAPTURE VOLUME	= 10,383 CF
Q25	= 52.2 CFS

THE IRRIGATION SCHEDULE WILL ALLOW FOR COMPLETE DRAWDOWN OF THE WATER QUALITY VOLUME WITHIN 72 HOURS.

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EXHIBIT 4

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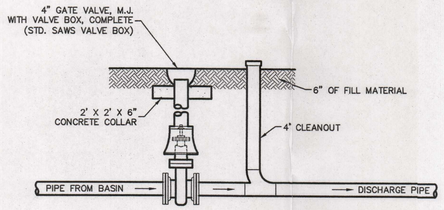
NEW BRAUNFELS CHRISTIAN ACADEMY
NEW BRAUNFELS, TEXAS

WATER POLLUTION ABATEMENT PLAN MODIFICATION
RETENTION BASIN/IRRIGATION SYSTEM

PLAT NO.
JOB NO. 6338-02
DATE AUGUST 2013
DESIGNER JCF
CHECKED JD DRAWN RO
SHEET 1 OF 1

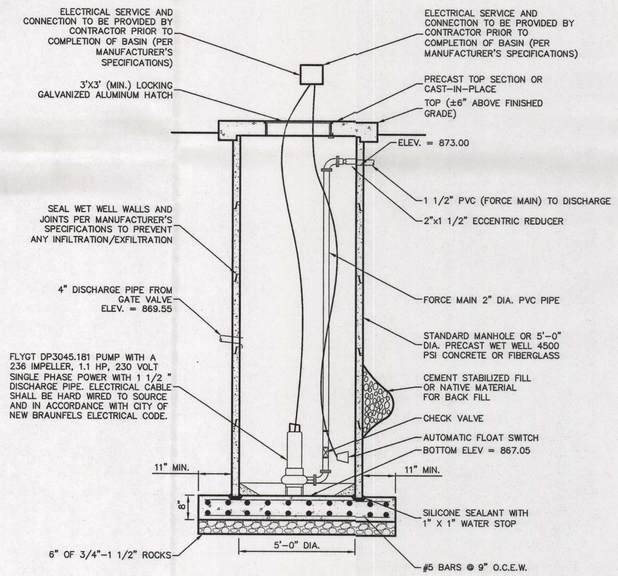
NOTES:
1. VALVE WILL BE SET PARTIALLY CLOSED SO AS TO PROVIDE A DRAWDOWN TIME WITHIN 72 HOURS.

2. CONTRACTOR SHALL PROVIDE OWNER WITH VALVE OPERATING KEY/ROD PRIOR TO PROJECT COMPLETION.



4" GATE VALVE DETAIL

NOT-TO-SCALE



BASIN DISCHARGE LIFT STATION DETAIL

NOT-TO-SCALE

NOTES TO CONTRACTOR

1. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT SLOPES (WHERE APPLICABLE).

3. UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:

- TOP OF BANK/WALL AT EACH CORNER OF BASIN
- TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)

4. BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.

5. THE IRRIGATION SCHEDULE WILL ALLOW FOR COMPLETE DRAWDOWN OF THE WATER QUALITY VOLUME WITHIN 72 HOURS.

CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	SPECIFICATION
PERMEABILITY (CM/SEC)	ASTM D 2434	1 X 10^{-6}
PLASTICITY INDEX OF CLAY (%)	ASTM D 423/D 424	NOT LESS THAN 15
LIQUID LIMIT OF CLAY (%)	ASTM D 2216	NOT LESS THAN 30
CLAY PARTICLES PASSING (%)	ASTM D 422	NOT LESS THAN 30
CLAY COMPACTION (%)	ASTM D 2216	95% OF STANDARD PROCTOR DENSITY

NOTES:
1. THE CLAY LINER SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES.

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NEW BRAUNFELS CHRISTIAN ACADEMY
NEW BRAUNFELS, TEXAS

WATER POLLUTION ABATEMENT PLAN MODIFICATION
RETENTION BASIN DETAILS

TCEQ-R13
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PLAT NO.
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