Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 9, 2009

Mr. Thomas Bloxham
Comal Independent School District
1404 I-35N
New Braunfels, Texas 78132

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Comal ISD Hoffman Lane Elementary School; Located at 4600 FM 306; New Braunfels, Texas
TYPE OF PLAN: Request for Modification of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No.: 1455.06; Investigation No. 766276; Regulated Entity No. RN101281202

Dear Mr. Bloxham:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the request for modification of the approved WPAP for the above-referenced project submitted to the San Antonio Regional Office by Moy Civil Engineers on behalf of Comal Independent School District on August 13, 2009. Final review of the WPAP was completed after additional material was received on October 7, 2009. 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

By letter dated April 26, 2000, approval was granted for buildings for classroom, administration, gymnasium, water well and pump house, and associated parking. The proposed imperious cover for the development is 5.98 acres. The project wastewater was disposed by the use of on-site sewage facilities.

By letter dated June 17, 2003, approval was granted for the basin liner to be reinforced concrete rip-rap instead of clay. The sedimentation basin dimensions were also altered. The resulting storage volume for the basin is 23,116 cubic feet. A maintenance access ramp, drainpipes, and gate valves were added to the full size sedimentation/filtration basin, the weir/emergency spillway had been downsized and moved, and the inflow structure from the underground storm drain system had been modified. Nine weep holes located below the sand filter in the filtration chamber were plugged to make a watertight seal. The

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vegetated filter strip from the north access road (Drainage Area 3) and the water storage facility was to be resized. The impervious cover changed from 27.98% to 28.8%. The wastewater was to be disposed of by an on-site sewage facility with a drip irrigation disposal system instead of a new wastewater treatment plant.

MODIFICATIONS

As understood, the submitted modification application is for change in impervious cover to 7.46 acres from previously approved 6.15 acres (EAPP No. 1455.04).

PROJECT DESCRIPTION

The proposed project will have an area of approximately 21.37 acres. It will include a building addition, an A/C pad and modifications to an existing full size sedimentation/filtration basin. The impervious cover will be 7.46 acres (34.9 percent). According to a letter dated, August 16, 2002, signed by Comal County Office of Comal County Engineer, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a partial sedimentation/filtration basin, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 6,697 pounds of TSS generated from the 7.46 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The individual treatment measures will consist of a sand filter basin designed for a watershed area of 10.83 acres hsving 7.46 acres of impervious cover. The basin will have a capture volume of 38,257 cubic feet (34,705 cubic feet required) and a sand filter area of 3,034 square feet (2,892 square feet required). The concrete lined basin will have a water depth of four feet and filter media composed of eighteen inches of sand separated by geotextile fabric from six inches of gravel over the perforated PVC piping system.

GEOLOGY

According to the geologic assessment included with the submittal, there are three possibly sensitive features located on the project site. The San Antonio Regional Office site inspection of April 5, 2000, revealed that the site is as described by the geologic assessment and no additional geologic or manmade features were observed.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated June 17, 2003.

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.

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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

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

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

15. Intentional discharges of sediment laden storm water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

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

17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

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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.

If you have any questions or require additional information, please contact Stacy Tanner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4078.

Sincerely,

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

MRV/SMT/eg

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

cc: Mr. Duane A. Moy, P.E., Moy Civil Engineers
Mr. Jim Klein, P.E., City of New Braunfels
Mr. Tom Hornseth, P.E., Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC212

TCEQ

Protecting Texas by Reducing and Preventing Pollution

FAX TRANSMITTAL

DATE: _____ NUMBER OF PAGES *(including this cover sheet)*: ☐

TO:
- Name
- Organization: **COMAL COUNTY ENGINEERS OFFICE**
- FAX Number: **830/608-2009**, **830/608-2078**, **830/620-3810**

FROM: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
- Name: **Elaine G**
- Division/Region: **San Antonio Region 13**
- Telephone Number: **210/490-3096**
- FAX Number: **210/545-4329**

NOTES:

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 17, 2009

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: CISD Hoffman Lane Elementary School, located at 4600 FM306, New Braunfels, Texas
PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan (WPAP) 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
EAPP File No.: 1455.06

Dear Mr. Hornseth:

The enclosed WPAP application received on August 13, 2009, 2009, 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 12, 2009.

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

Lynn M. Bumguardner
Water Section Work Leader
San Antonio Regional Office

LMB/eg

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MODIFICATION OF A PREVIOUSLY APPROVED WATER POLLUTION ABATEMENT PLAN for HOFFMAN LANE ELEMENTARY SCHOOL New Braunfels, TX

Prepared for
Comal Independent School District

AUGUST 2009



Prepared by:

Moy Civil Engineers
Texas Registered Engineering Firm - F-5297

Modification of a Previously Approved Plan Checklist

√ General Information Form *(TCEQ-0587)*
- ATTACHMENT A - Road Map
- ATTACHMENT B - USGS / Edwards Recharge Zone Map
- ATTACHMENT C - Project Description

√ Geologic Assessment Form *(TCEQ-0585)*

√ Modification of a Previously Approved Plan *(TCEQ-0590)*
- ATTACHMENT A - Original Approval Letter and Approved Modification Letters
- ATTACHMENT B - Narrative of Proposed Modification
- ATTACHMENT C - Current Site Plan of the Approved Project

√ Water Pollution Abatement Plan Application Form *(TCEQ-0584)*
- ATTACHMENT A - Factors Affecting Water Quality
- ATTACHMENT B - Volume and Character of Stormwater
- ATTACHMENT C - Suitability Letter from Authorized Agent

√ Temporary Stormwater Section *(TCEQ-0602)*, if necessary
- ATTACHMENT A - Spill Response Actions
- ATTACHMENT B - Potential Sources of Contamination
- ATTACHMENT C - Sequence of Major Activities
- ATTACHMENT D - Temporary Best Management Practices and Measures
- ATTACHMENT F - Structural Practices
- ATTACHMENT G - Drainage Area Map
- ATTACHMENT I - Inspection and Maintenance for BMPs
- ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices

√ Permanent Stormwater Section *(TCEQ-0600)*, if necessary
- ATTACHMENT B - BMPs for Upgradient Stormwater
- ATTACHMENT C - BMPs for On-site Stormwater
- ATTACHMENT D - BMPs for Surface Streams
- ATTACHMENT F - Construction Plans
- ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan
- ATTACHMENT I -Measures for Minimizing Surface Stream Contamination

√ Agent Authorization Form *(TCEQ-0599)*, if application submitted by agent

√ Application Fee Form *(TCEQ-0574)*

√ Core Data Form *(TCEQ-10400)*

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: Comal ISD Hoffman Lane Elementary School
COUNTY: Comal STREAM BASIN: Alligator Creek

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST X MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: Thomas Bloxham
Entity: Assistant Superintendent of Support Services
Mailing Address: Comal Independent School District
1404 I-35N
City, State: New Braunfels, Texas Zip: 78130
Telephone: 830-221-2184 FAX: 830-221-2009

Agent/Representative (If any):

Contact Person: Duane A. Moy, P.E.
Entity: President
Mailing Address: Moy Civil Engineers
City, State: 12770 Cimarron Path, Suite 100 Zip: 78249
Telephone: 210-698-5051 FAX: 210-698-5085

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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.

5.0 miles N. of City of New Braunfels on FM 306; N.E. side of FM 306 before Hoffman Lane

4. X **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.

5. X **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:

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

6. __X__ 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. __X__ **ATTACHMENT C - PROJECT DESCRIPTION**. Attached at the end of this form is a detailed narrative description of the proposed project.

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)
__X__ Other: Existing School Site

PROHIBITED ACTIVITIES

9. __X__ 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. __X__ 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:

X 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 Contributing Zone Plan.

__ 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)

X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TCEQ to the local municipality or county, groundwater conservation districts, and the TCEQ's Central Office.

14. X 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.

__ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with 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:

Duane A. Moy

Print Name of Customer/Agent

Duane A. Moy

Signature of Customer/Agent

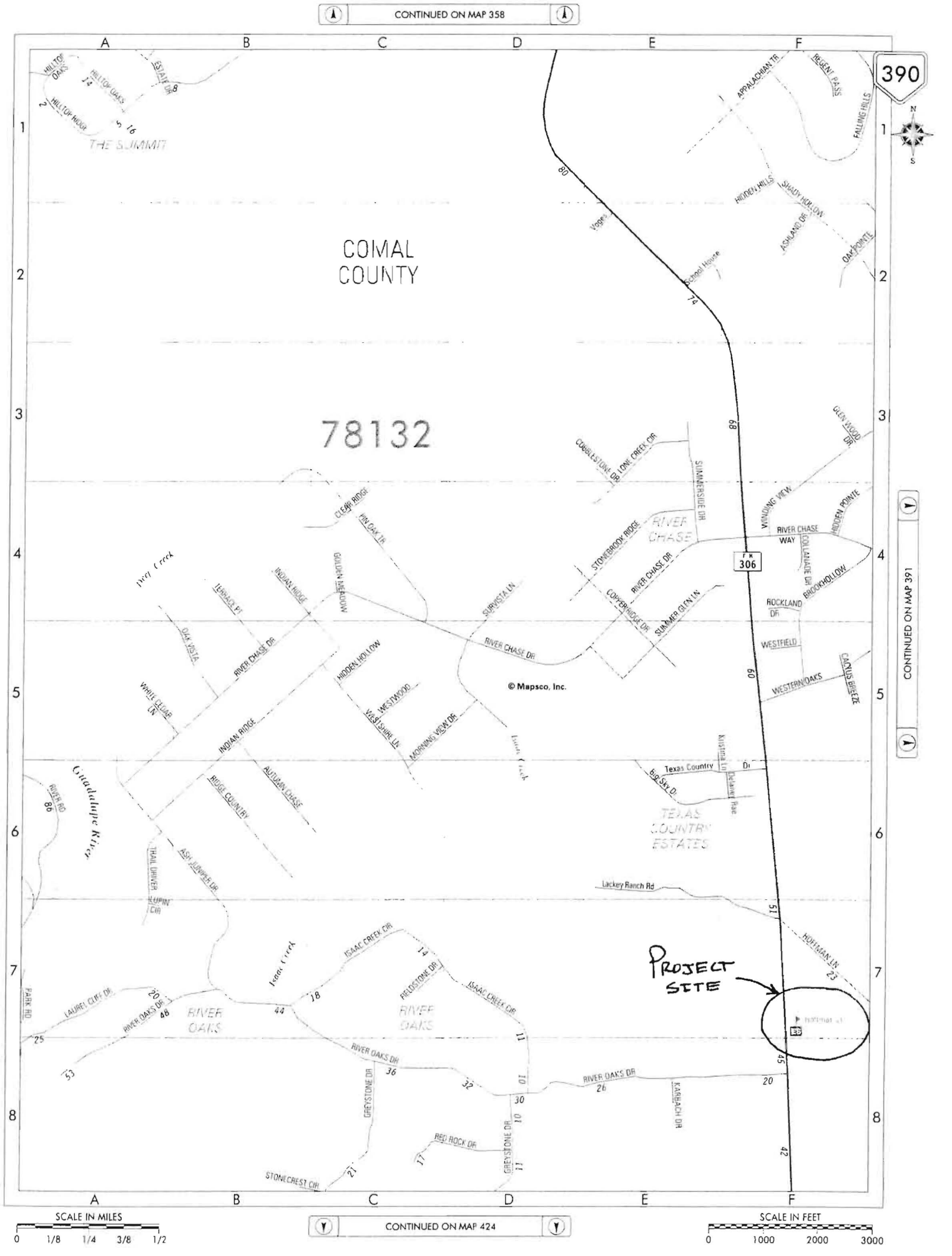
8/3/09

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.

Attachment H



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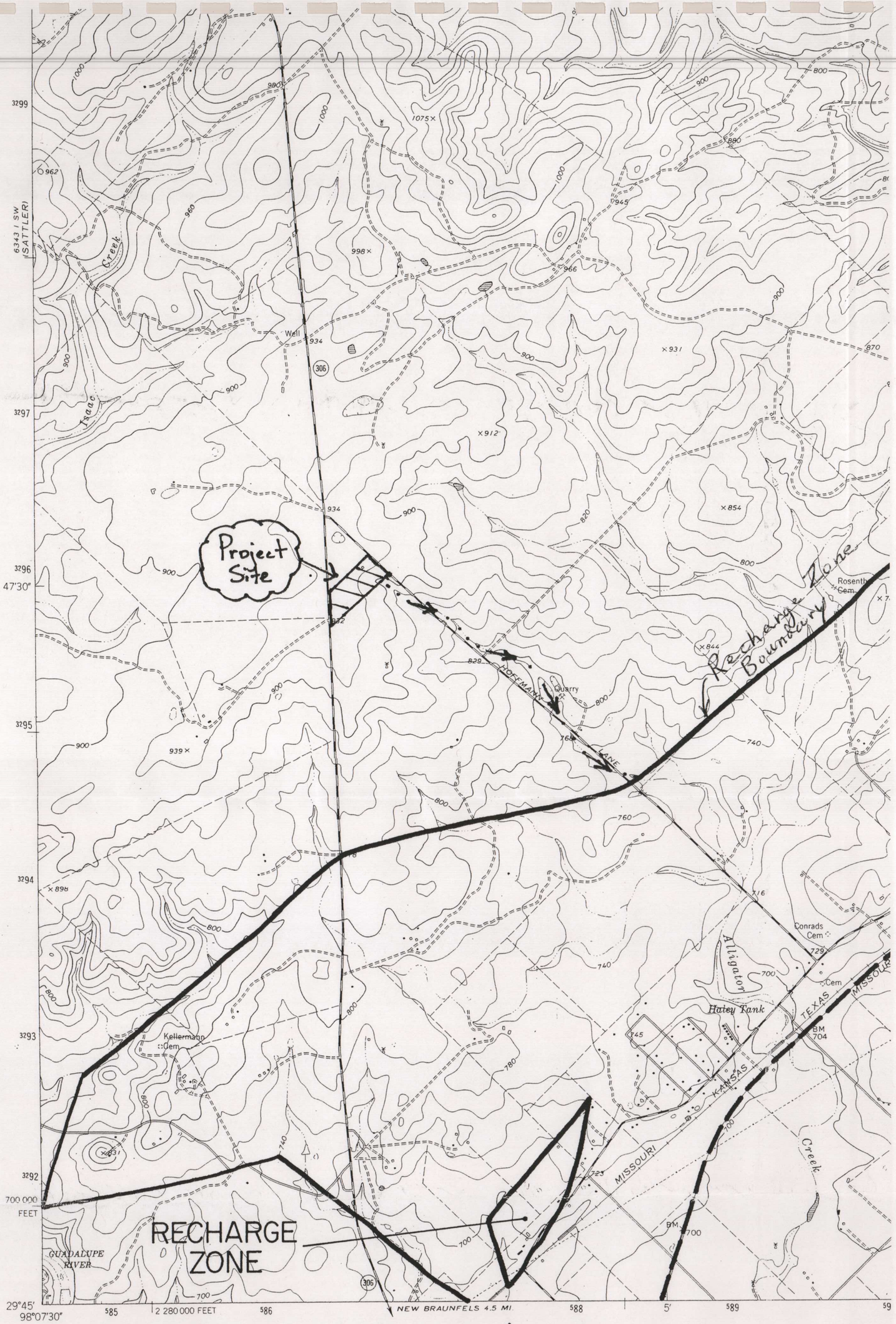
Project Site
Recharge Zone Boundary
RECHARGE ZONE
Hunter Quadrangle
Scale: 1" = 2,000'
Mapped by the Army Map Service
Edited and published by the Geological Survey
Control by USGS and NOS/NOAA
Topography by photogrammetric methods from aerial photographs taken 1958. Field checked by USGS 1964
Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-metre Universal Transverse Mercator grid ticks, zone 14, shown in blue
Fine red dashed lines indicate selected fence lines
Area covered by dashed light-blue pattern are subject to controlled inundation
Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1973. This information not field checked
UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
ATTACHMENT B
THIS MAP COM
FOR SALE BY U. S. GEOLOGICAL
A FOLDER DESCRIBING
NATIO
6343 I SW (SATTLER)
6343 II NW (NEW BRAUNFELS WEST)
Isaac Creek
HOFFMANN LANE
Quarry
Well
Rosenth Cem
Conrads Cem
Cem
Kellerman Cem
Haley Tank
Alligator Creek
TEXAS
KANSAS
MISSOURI
BM 704
BM 700
GUADALUPE RIVER
NEW BRAUNFELS 4.5 MI
2 280 000 FEET
700 000 FEET
29°45'
98°07'30"
47'30"

ATTACHMENT C
PROJECT DESCRIPTION

The proposed project consists of a small building addition, an A/C pad and modifications to an existing Sedimentation/Filtration basin at an existing school known as Hoffman Lane Elementary School. The school is located at 4600 FM 306, New Braunfels, TX 78132 and is part of the Comal Independent School District. The school site is located approximately 5.0 miles N. of New Braunfels on the east side of FM 306.

The project site is 21.37 acres and is located entirely within the Edwards Aquifer Recharge Zone. The sedimentation/filtration basin is proposed to be modified from a full sedimentation/filtration to a partial sedimentation/filtration basin. The pond modifications are proposed for the treatment of additional impervious cover on the site.

The existing impervious cover is 7.442 acres and the proposed impervious cover is 7.461 acres.

Geologic Site Assessment (WPAP)

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

Hoffmann Lane Elementary School Improvements
Two Areas
Comal County, Texas

FROST GEOSCIENCES CONTROL # FGS-E09145

August 12, 2009

Prepared exclusively for

Comal Independent School District
1404 IH-35 N
New Braunfels, Texas 78130

Frost GeoSciences
Geotechnical ▪ Construction Materials
Forensics ▪ Environmental

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

Frost GeoSciences
Geotechnical • Construction Materials
Forensics • Environmental

13402 Western Oak
Helotes, Texas 78023
Phone (210) 372-1315
Fax (210) 372-1318
www.frostgeosciences.com

August 12, 2009

Comal Independent School District
1404 IH-35 N
New Braunfels, Texas 78130

Attn: Mr. Thomas Bloxham, Assistant Superintendent of Support Services

Re: Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School Improvements
Two Areas
Comal County, Texas

Frost GeoSciences, Inc. Control # FGS-E09145

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

Distribution: (5) Moy Civil Engineers, Inc.
(1) Comal Independent School District

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APPENDIX

A: Plate 1: Site Plan
Plate 2: Street Map
Plate 3: USGS Topographic Map
Plate 4: Bexar County Watersheds Map
Plate 5: Official Edwards Aquifer Recharge Zone Map
Plate 6: FEMA Flood Map
Plate 7: Geologic Map
Plate 8: 2009 Aerial Photograph, 1"=500'
Plate 9: 2009 Aerial Photograph with PRF's, 1"=200'
Plate 10: 1973 Aerial Photograph, 1"=500'

B: Site Photographs

C: Site Geologic Map

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: Hoffmann Lane Elementary School Improvements

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)
Comfort Rock Outcrop Complex	D	0 to 1
Rumple-Comfort Association	C/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" = 60 '
Site Geologic Map Scale	1" = 60 '
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). 2009 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. ✓ One (1) original and three (3) copies of the completed assessment has been provided.

Date(s) Geologic Assessment was performed: August 7, 2009
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

August 12, 2009
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

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 low/ 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 waconensis*	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 nor 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 nospar 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: Hoffmann Lane Elementary School Improvements FGS-E09145

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1	2*	3*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11	12
FEATURE	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT²)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						< 40	> 40	<1.6	>1.6	
	There were no Geologic or Manmade Features noted Within the Two Project Areas at the Time of the On-Site Inspection.																			

* DATUM 1927 North American Datum (NAD27)

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

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

Signature Steve Frost Date August 12, 2009 Sheet 1 of 1

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

LOCATION

The project site consists of Two Areas within the existing Hoffman Lane Elementary School property located near the southern corner of the intersection of F.M. 306 and Hoffmann Lane in Comal County, Texas. An overall view of the area is shown on copies of the site plan, a street map, the USGS Topographic Map, the Official Edwards Aquifer Recharge Zone Map, the Flood Insurance Rate Map (FIRM), a geologic map, a 2009 aerial photograph at a scale of 1"=500', a 2009 aerial photograph at a scale of 1"=200', and a 1973 aerial photograph at a scale of 1"=500', 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, a former Geologic Assessment performed by R.A. Burns Environmental Consultants, 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 2009 aerial photograph, in conjunction with a hand held Garmin eTrex Summit Global Positioning System with an Estimated Potential Error ranging from 10 to 13 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 2009 aerial photograph at an approximate scale of 1"=200', indicating the locations of the potential recharge features, is included on Plate 8 in Appendix A. The Geologic Assessment Form, 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, Hunter, Texas Sheet (1994), the elevation of the Hoffmann Lane Elementary School property ranges from 900 feet along the southeastern property line to 932 feet along F.M. 306. These elevations are calculated above mean sea level (AMSL). The surface runoff from the project site flows to the southeast into an unnamed tributary of Alligator Creek. Hoffmann Lane is located along the northeastern property line. F.M. 306 is located along the western property line. An offsite closed depression is located north of the project area. 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 31, Hunter, Texas Sheet (1996), the project site is located within the Recharge Zone of the Edwards Aquifer. A copy of Official Edwards Aquifer Recharge Zone Map 31, 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 48091C0290F (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 Comfort-Rock Outcrop Complex (CrD) and the Rumple-Comfort Association (RUD). A copy of the 1973 aerial photograph (approximate scale: 1"=500') from the USDA Soil Survey of Comal & Hays County, Texas indicating the location of the project site and the soil types is included on Plate 9 in Appendix A.

The Comfort-Rock outcrop complex, undulating (CrD) consists of shallow, clayey soils and Rock outcrops on the side slopes, hilltops, and ridgetops in the uplands area of the Edwards Plateau. This soil complex is composed of the Comfort extremely stony clay (~49% to ?95% of the complex), the Rock outcrop (5-36% of the complex), and small amounts of the Rumple, Purves, Eckert, and Real soils.

Typically, the surface layer of the Comfort soil is dark brown extremely stony clay about 6" thick. Stones and cobbles (some as much as 4' across) cover approximately 45% of the surface. The subsoil extends to a depth of 13". It's a dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone. The soil is mildly alkaline and non-calcareous throughout. The soil is well drained, surface runoff is slow to medium, permeability is slow, and the available water capacity is very low. Water erosion is a slight hazard.

Typically, the Rock outcrop is dolomitic limestone that is barren of soil except in narrow fractures in the rock. Some areas may have as much as 3" of soil on top of the outcrop.

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

Narrative Description of the Site Geology

The project site is currently developed as the Hoffmann Lane Elementary School. Area 1 consists of a small portion of the property surrounded by concrete walkways and buildings that is proposed for a small building addition. Area 2 consists of a larger portion of the property characterized by a service road, a stormwater basin, and sand filtration basin. Frost GeoSciences, Inc. did not identify any manmade features in bedrock or natural karst features capable of consideration of recharge within the limits of the two areas of proposed construction at the time of the on-site inspection on August 7, 2009.

Frost GeoSciences, Inc. reviewed a previous Geologic Assessment for Hoffmann Elementary School performed by R.A. Burns Environmental Consultants. This geologic assessment indicated an area of vuggy limestone in an arcuate outcrop pattern near the filtration basin. This PRF was identified in the Burns GA as S-3. The feature was not listed as a sensitive feature. Frost GeoSciences, Inc. performed a visual inspection of this area and found that the construction of roads, utilities, stormwater basins and filtration basins have obscured the original outcrop and FGS found no evidence of this PRF in the field at the time of our site inspection. As a result, it was not listed in this report as a PRF.

The project site is covered by a sparse stand of vegetative cover. 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.*), and mesquite and a sparse stand of native grasses. The variations in the vegetative cover across the project site are visible in the 2009 aerial photograph on Plate 8 in Appendix A and in the site visit photographs included in Appendix B.

According to the USGS 7.5 Minute Quadrangle Map, Bulverde, Texas Sheet (1988), the elevation of the project site ranges from 900 feet to 932 feet. These elevations are calculated above mean sea level (AMSL). According to topographic data obtained from Moy Civil Engineers, the elevations on the project site range from 924 to 928 feet in Area 1, and from 900 feet to 911 feet in Area 2. Copies of the site plan, indicating the boundary of the project site and the elevations, are included on Plate 1 in Appendix A and on the Site Geologic Map in Appendix C of this report.

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

The Leached and Collapsed Member of the Edwards Person Limestone consists of crystalline limestone, mudstone to grainstone with chert, and collapsed breccia. This member is stromatolitic limestone. The Leached and Collapsed Member is characterized by bioturbated iron stained beds separated by massive limestone beds. This member is typically one of the most permeable and has extensive lateral development with large rooms. Overall thickness ranges from 70 to 90 feet thick.

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

BEST MANAGEMENT PRACTICE (BMP)

Based on a visual inspection of the ground surface and the research performed for this project, the overall potential for fluid flow from the project site into the Edwards Aquifer appears

to be low. The potential always exists to encounter subsurface features that lack a surface expression. Frost GeoSciences, Inc. recommends that we be included in the pre-construction meeting to inform construction personnel of the potential to encounter subsurface karst features during excavating activities. Construction personnel should also be informed of the proper protocol to follow in the event that a solution cavity and/or cave is encountered during the excavation and development of the property.

DISCLAIMER

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

This report has been prepared for and may be relied upon by Comal Independent School District, and Moy Civil 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, Hunter, Texas Sheet (1994),

2) Official Edwards Aquifer Recharge Zone Map 31, Bulverde, 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 48091C0290F (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".

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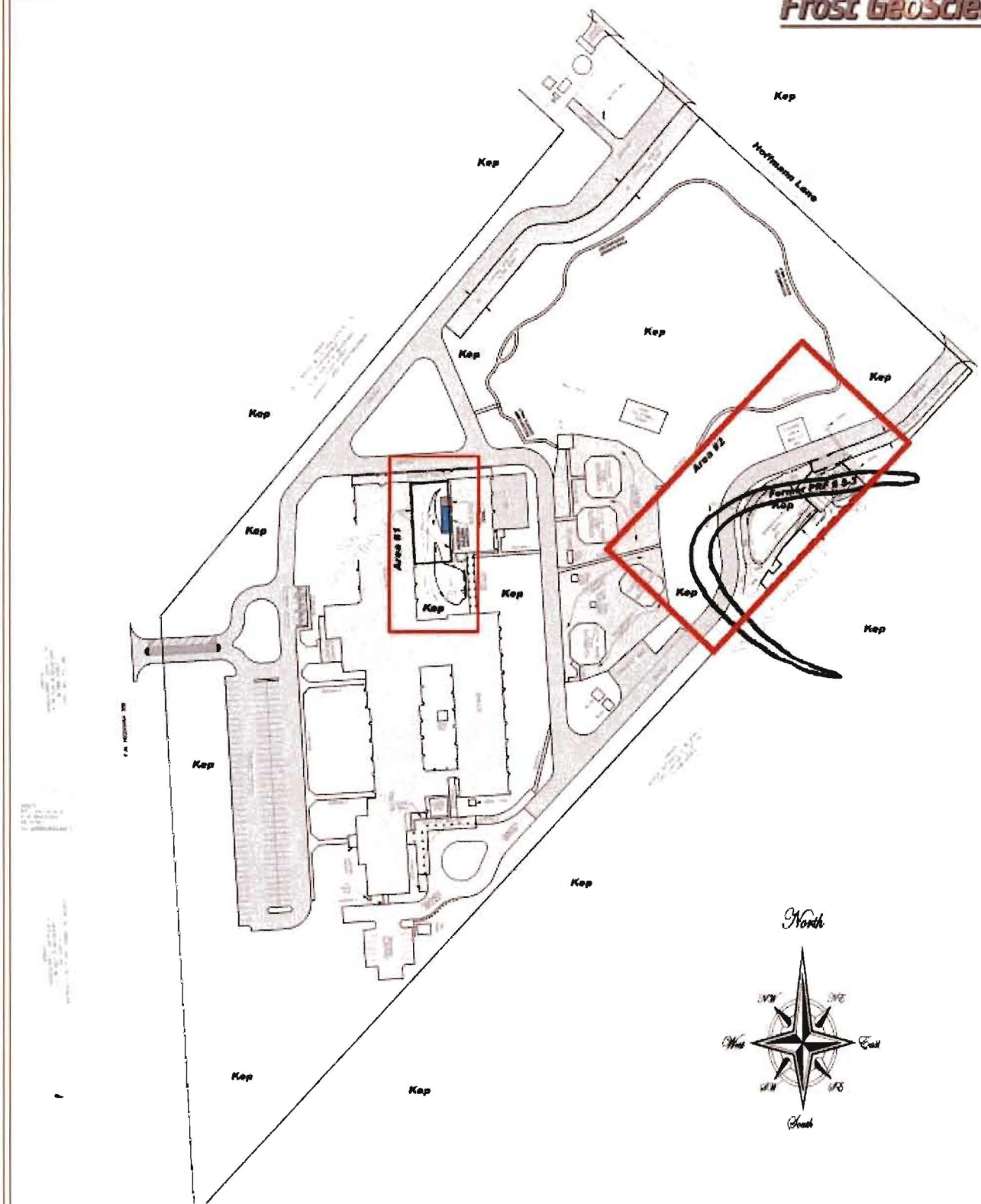

PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School
Comal County, Texas

Site Plan

PROJECT NO.: FGS-E09145

DATE: August 12, 2009

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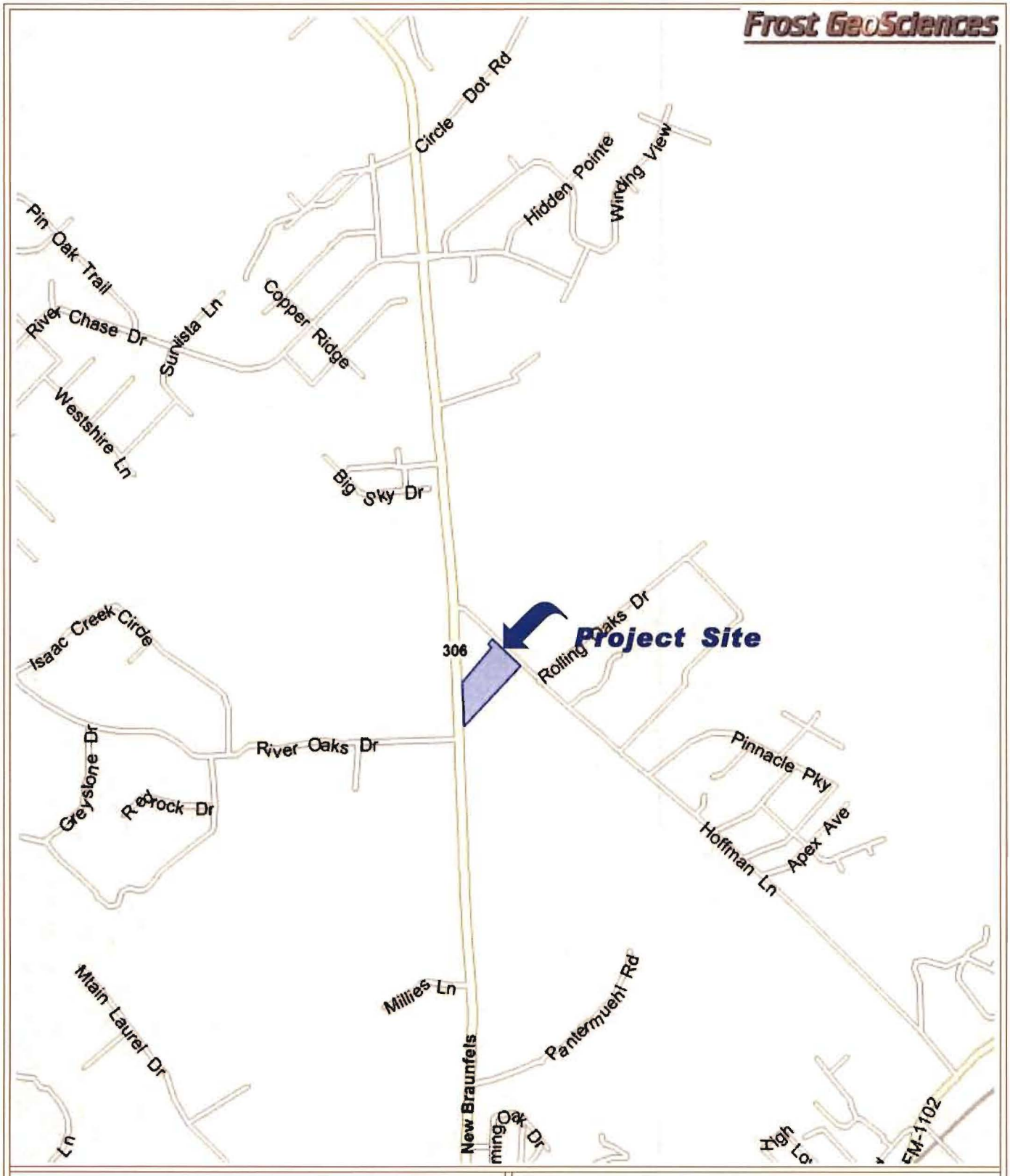
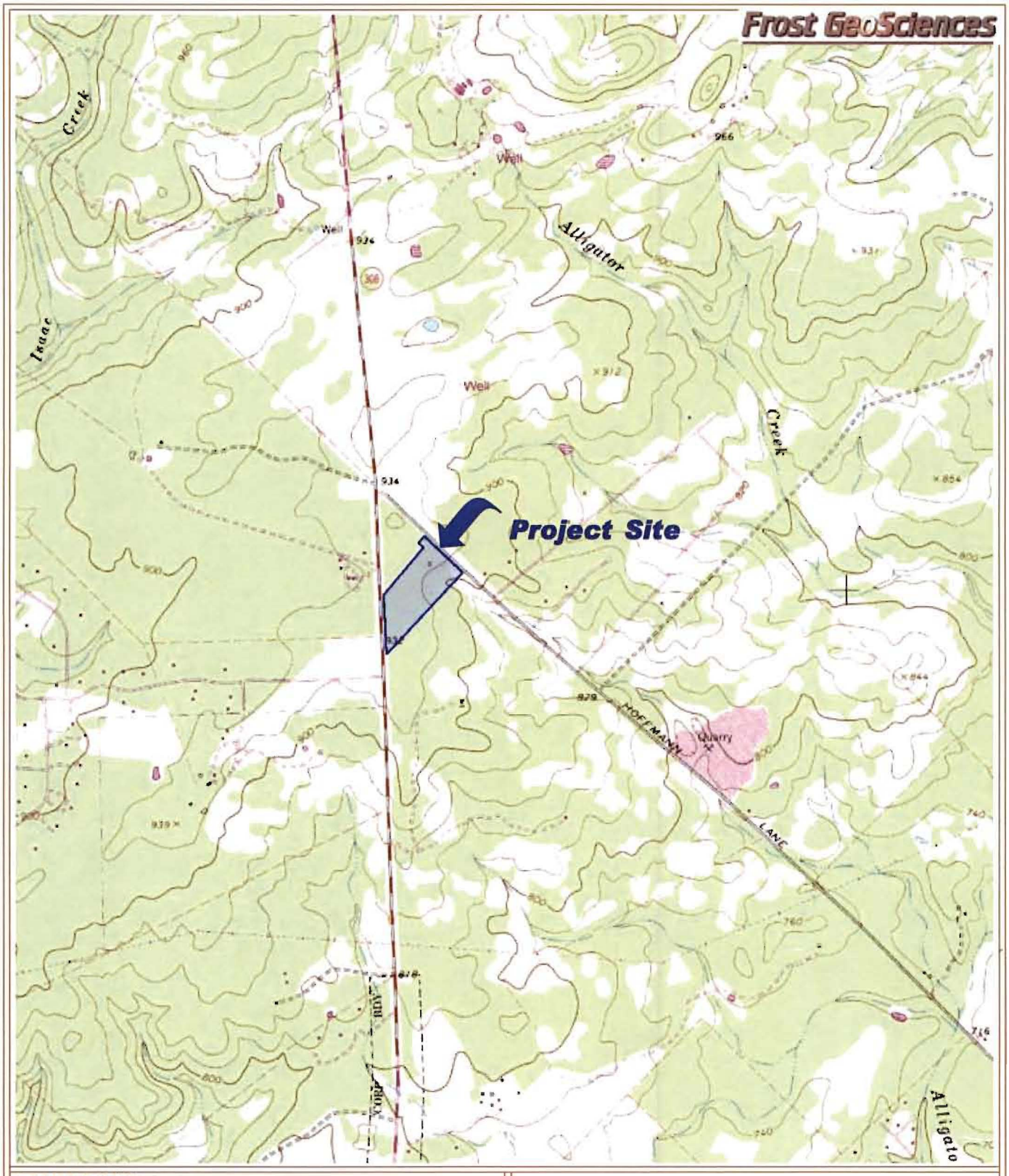


PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Hoffmann Lane Elementary School Comal County, Texas	Street Map
	PROJECT NO.: FGS-E09145 / **DATE:** August 12, 2009

Geologic and Environmental Consulting

PLATE NO. 2



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Hoffmann Lane Elementary School Comal County, Texas	U.S.G.S. 7.5 Minute Quadrangle Map Hunter, Texas Sheet (1994)
PROJECT NO.: FGS-E09145	**DATE:** August 12, 2009

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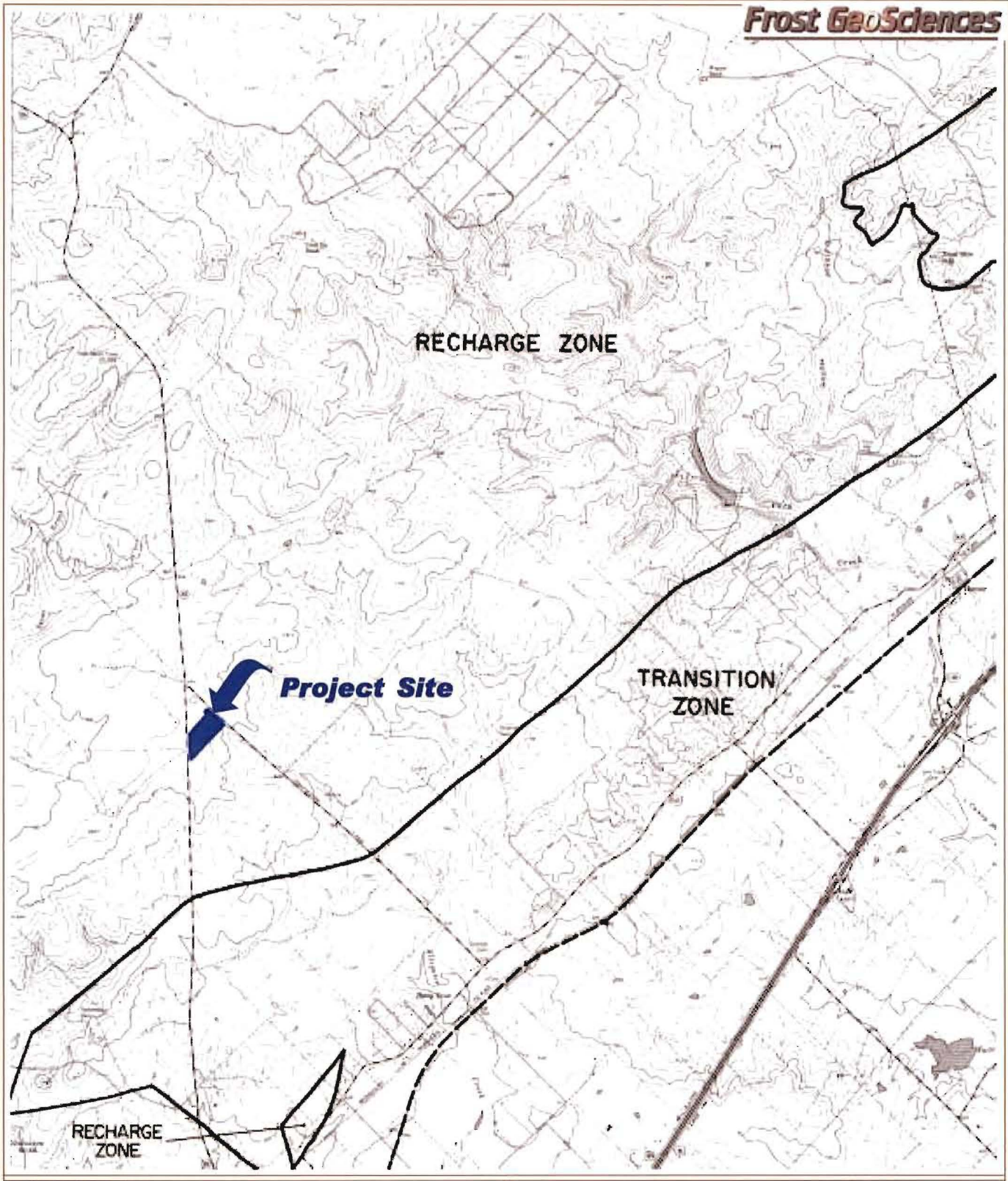
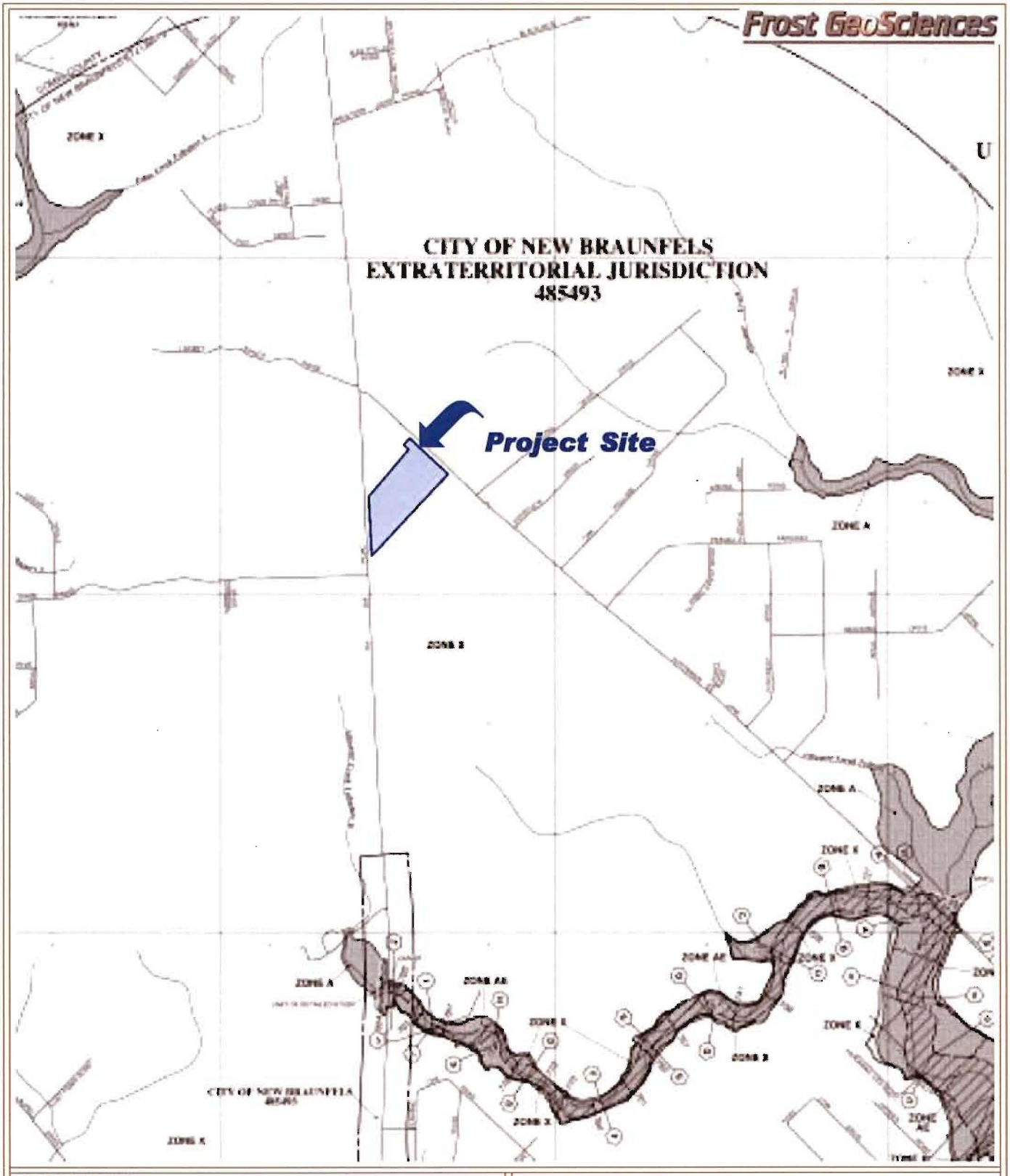


PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Hoffmann Lane Elementary School Comal County, Texas	Official Edwards Aquifer Recharge Zone Map Hunter, Texas Sheet (1996)
PROJECT NO.: FGS-E09145	**DATE:** August 12, 2009

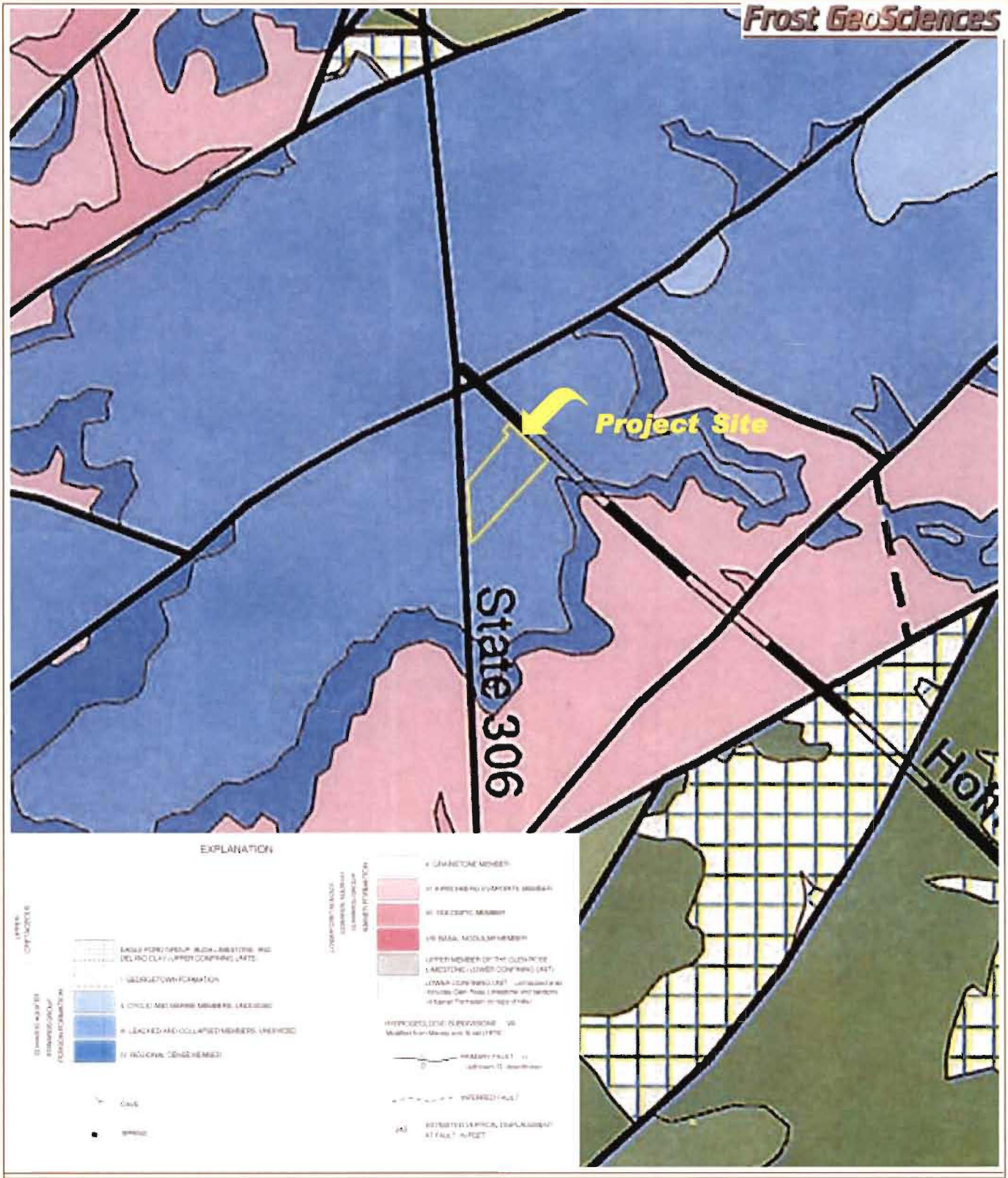


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School
Comal County, Texas

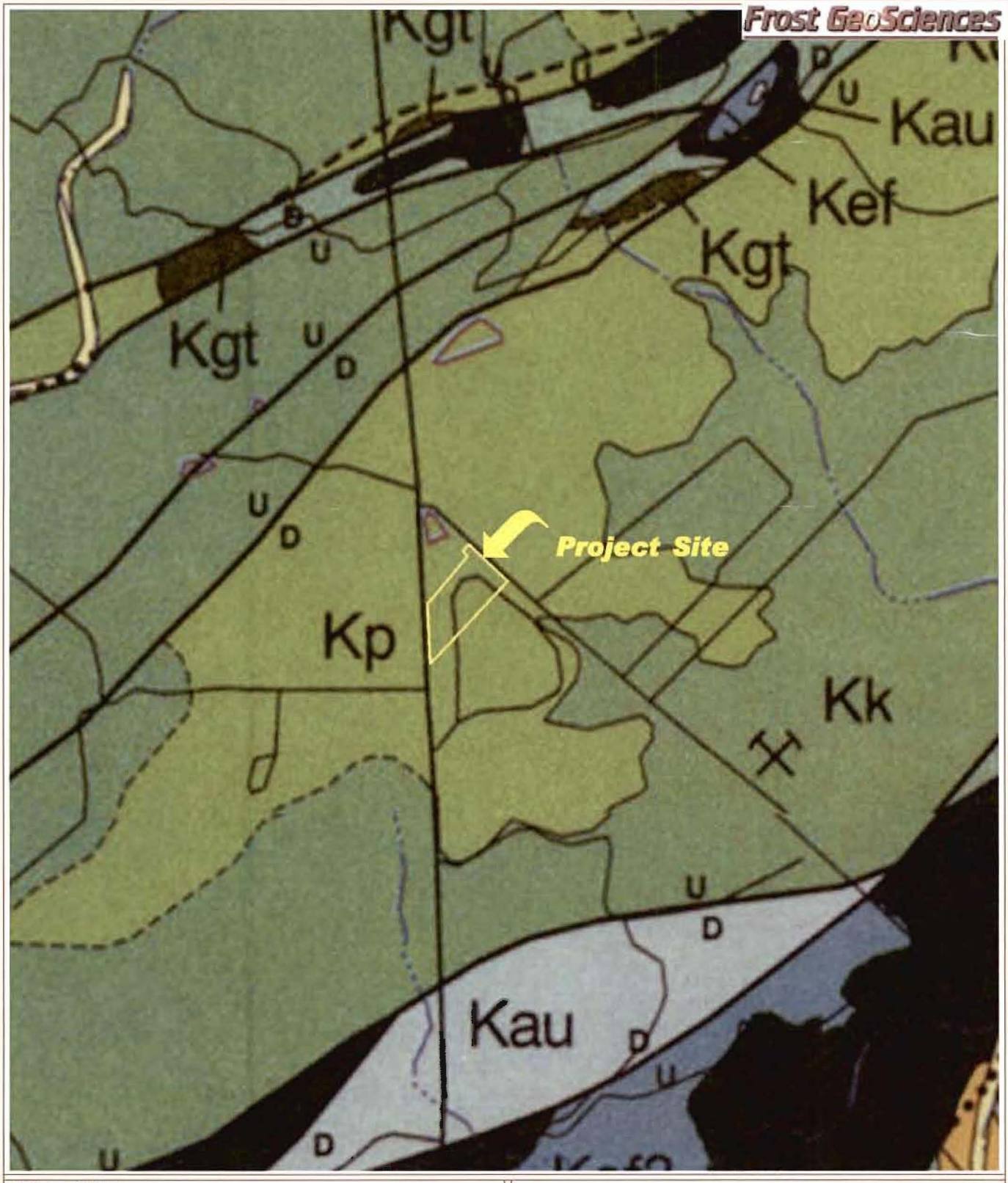
Flood Insurance Rate Map (FIRM)
Community Panel # 48091C0290F
(Revised 9/02/09)

PROJECT NO.: FGS-E09145

DATE: August 12, 2009



PROJECT NAME:	United States Geologic Survey Water Resources Investigations #94-4117 Geologic Map of Comal County, Texas	
Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Hoffmann Lane Elementary School Comal County, Texas	PROJECT NO.: FGS-E09145	DATE: August 12, 2009



PROJECT NAME: Geologic Site Assessment (WPAP) for Regulated Activities / Development on the Edwards Aquifer Recharge / Transition Zone Hoffmann Lane Elementary School Comal County, Texas	Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle (2000)
PROJECT NO.: FGS-E09145	**DATE:** August 12, 2009

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PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School
Comal County, Texas

2009 Aerial Photograph
Landiscor Aerial Information

PROJECT NO.:	DATE:
FGS-E09145	August 12, 2009

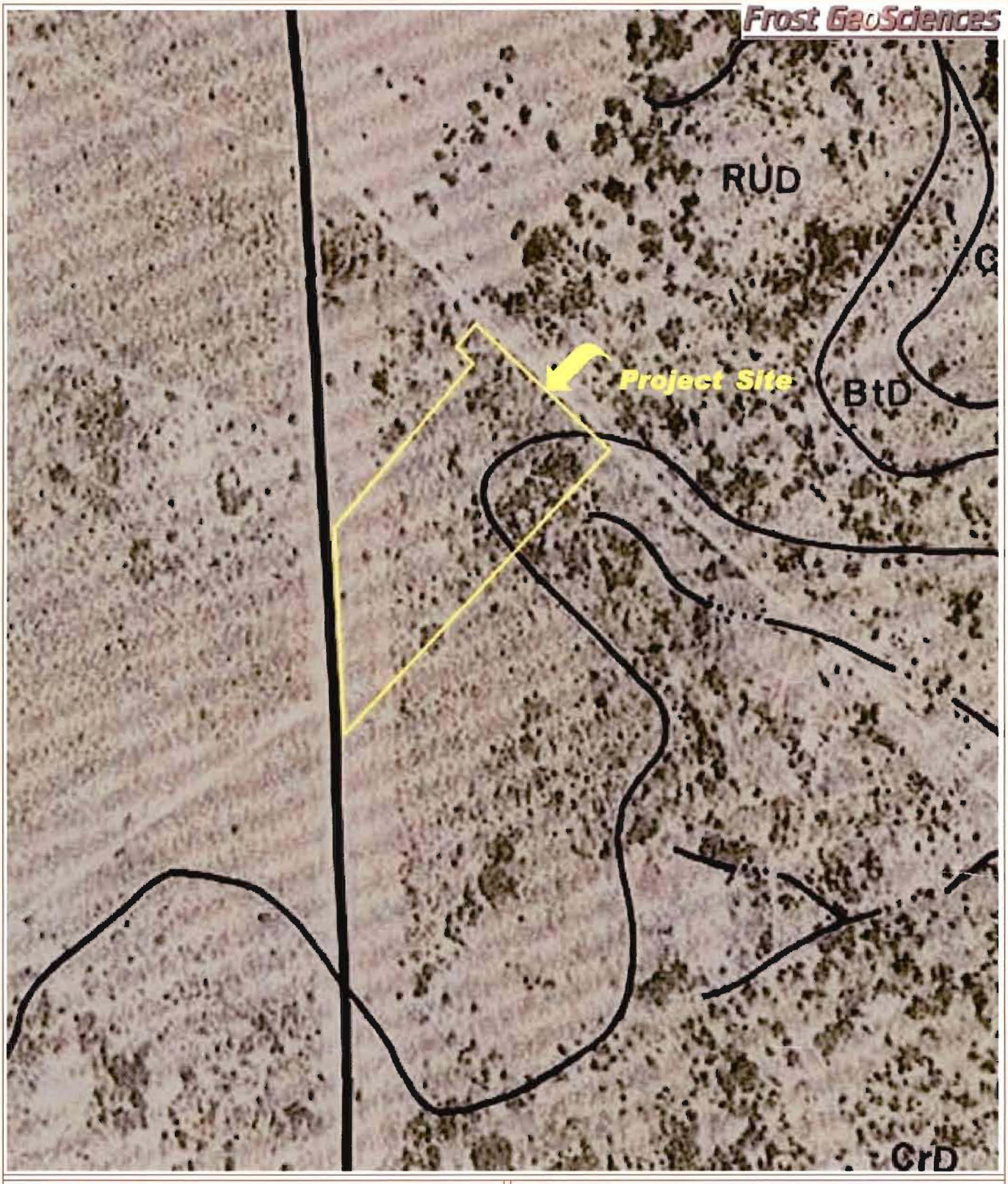


PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School
Comal County, Texas

2009 Aerial Photograph with PRF's
Landiscor Aerial Information

PROJECT NO.: FGS-E09145

DATE: August 12, 2009



PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Hoffmann Lane Elementary School
Comal County, Texas

1973 Aerial Photograph

United States Department of Agriculture

PROJECT NO.:	DATE:
FGS-E09145	August 12, 2009



View to the North, of Area 1.



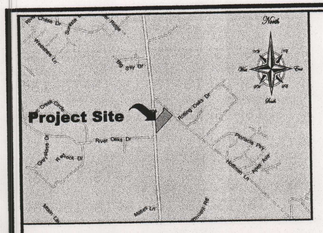
View to the south, of Area 1.



View of a stormwater basin and sand filtration basin in Area 2.



View to the northeast, of the project site along the southeastern edge of Area 2.



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Site Geologic Map

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
for the
Hoffmann Elementary School Improvements
Two Areas
Comal County, Texas

Frost GeoSciences, Inc. Control # FGS-E09145

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 # 48091C0290F, 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)

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

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

North
NW NE
West East
SW SE
South

Graphic Scale
60 0 30 60 120
(In Feet)

1 inch = 60 feet
Representative Fraction 1:720

Contour Interval - 1 foot

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: Comal ISD Hoffman Lane Elementary School
Original Regulated Entity Name: Comal ISD Hoffman Lane Elementary School
Assigned Regulated Entity Numbers (RN): 1) 101281202, 2) _____, 3) _____

X The applicant has not changed and the Customer Number (CN) is: CN 600249825
___ The applicant has changed. A new Core Data Form has been provided.

2. X **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):

X 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;
X change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
___ development of land previously identified as undeveloped in the original water pollution abatement plan;
___ physical modification of the approved organized sewage collection system;
___ physical modification of the approved underground storage tank system;
___ physical modification of the approved aboveground storage tank system.

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

WPAP Modification Summary	Approved Project	Proposed Modification
Acres	21.370	21.370
Type of Development	School	School improvements
Number of Residential Lots	N/A	N/A
Impervious Cover (acres)	6.155	7.461
Impervious Cover (%)	28.8%	34.9%
Permanent BMPs	Vegetated filter strip, Full sedimentation/filtration pond	Partial sedimentation/filtration pond
Other		

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. X **Attachment B: Narrative of Proposed Modification**. A narrative description of the nature of the proposed modification is provided at the end of this form. It discusses what was approved, including previous modifications, and how this proposed modification will change the approved plan.

6. X **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.

X 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.

X Acreage has not been added to **or** removed from the approved plan.

8. X One (1) original and 3 copies of the complete application has been provided.

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:

Duane A. Moy
Print Name of Customer/Agent

Duane A Moy
Signature of Customer/Agent

8/3/09
Date

ATTACHMENT A
ORIGINAL APPROVAL LETTER AND APPROVED MODIFICATION LETTERS

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Jeffrey A. Saitas, *Executive Director*

FAXED 26 June 00 Allark

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

April 26, 2000

0->99 Bond 306 + Hoffman WPAP + Wtr Systems / HTSC
✓ · Mitchell Steinbeck / Plumber Direct (512) 476-4299
✓ Gerald Goodell / H:0880P
✓ · JT Construction / Attn: George B. Poe III 210 641-1252
✓ · Odessa Pump / Attn: Courtney, Kyle (210) 492-8825
✓ · Russell Masters / (210) 698-4475 2 Please call Guillermo @ Comal ISD (@ Hoffman ETC)

Mr. Roy Linnartz
Comal Independent School District
278 Loop 337
New Braunfels, TX 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Comal ISD - Hoffman Lane Elementary School; Located on the east side of FM 306, approximately 1,500' south of intersection with Hoffman Lane; Comal County, Texas
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 File No. 1455.00

Dear Mr. Linnartz:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Russell Masters of AlianzA, LLC on behalf of the Comal Independent School District on March 9, 2000. Final review of the WPAP submittal was completed after additional material was received on April 12, 2000. As presented to the TNRCC, 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, modification to a plan, or exception. A motion for reconsideration must be filed no later than 20 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% of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed school project will have an area of approximately 21.37 acres and will have the following parameters:

- The development will include buildings for classrooms, administration, gymnasium, water well and pump house, and associated parking.
- The proposed impervious cover for the development is approximately 28% of the total area of the site.
- The impervious cover for this school site will be 5.98 acres.
- According to the application, wastewater will be disposed of through the use of on-site sewage facilities. The flow anticipated will be 6,400 gallons per day (gpd), thus exceeding the County Permitting threshold of 5,000 gpd and consequently requiring a TNRCC Permit.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, one sedimentation/filtration basin and three vegetated filter strips will be provided. The individual treatment components will consist of:

1. The full sedimentation/filtration basin is designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." and is sized to capture the first 0.49 inches of stormwater run-off from 10.83 acres, providing a total capture volume of 30,202 cubic feet. The filtration system will consist of:

   A. 1575 square feet of sand, which is 18 inches thick,
   B. an underdrain piping wrapped with geotextile membrane, and
   C. an impervious liner.

2. Three vegetative filter strips are designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." The filter strips will:

   A. be contiguous with developed area,
   B. be at the same elevation as the developed area,
   C. have a level spreading device, and
   D. be sized to filter stormwater run-off from the areas shown in the table below.

Drainage Area	Contributing Area (Acres)	Vegetated Filter Provided (Acres)
1	0.200	0.113
2	0.290	0.165
3	0.034	0.031

GEOLOGY

According to the geologic assessment included with the submittal, there are three possibly sensitive features located on the project site. The San Antonio Regional Office site inspection of April 5, 2000, revealed that the site is as described by the geologic assessment and no additional geologic or manmade features were observed.

SPECIAL CONDITIONS

I. Under 30 TAC §213.6(a)(4), new land application wastewater treatment plants located on the recharge zone must be designed, constructed, and operated such that there are no bypasses of the treatment facilities or any discharges of untreated or partially treated wastewater.

II. Under 30 TAC §213.6(b) Land application systems.

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

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

III. Upon receipt of an approved wastewater permit for the site, provide four copies of the approved permit to the San Antonio Regional Office.

IV. Prior to occupancy of the school and use of the treatment system, provide written certification from a Texas Licensed Professional Engineer that the wastewater treatment system meets the requirements of 30 TAC §213.6(a)(4) and 30 TAC §213.6(b), and that it has been constructed as designed and approved.

V. After the wastewater treatment system has been in operation for six months, provide a follow-up assessment of the system's environmental impact on the Edwards Aquifer, certified by a Texas Licensed Professional Engineer. This assessment is due two months after the end of the six month period.

VI. The sedimentation/filtration basin is designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." The basin will incorporate sedimentation and filtration as described above.

VII. All sediment and or media removed from the full sedimentation/filtration 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 §26.136 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, 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 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.

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 TNRCC 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. Abandoned injection wells must be closed under the requirements of 30 TAC Chapter 331 (relating to Underground Injection Control).

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

<u>During Construction:</u>

9. 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.

10. 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.

11. Two wells exist on the site. All identified abandoned water wells, including injection, dewatering, and monitoring wells must be plugged pursuant to requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Licensing and Regulation of Water Well Drillers and Water Well Pump Installers) and all other locally applicable rules, as appropriate. If any abandoned wells (including water, injection (injection well referenced in Item 7), dewatering, and monitoring well) are encountered during construction, they must be plugged pursuant to requirements of the Texas Department of Licensing and Regulation (16 TAC Chapter 76) and all other locally applicable rules, as appropriate.

12. 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).

13. 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.

14. 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.

15. To the maximum extent practicable, BMPs and measures must maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction. 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. A request to temporarily seal the feature must include a justification that no reasonable and practicable alternative exists. The request will be evaluated by the executive director on a case-by-case basis.

After Completion of Construction:

16. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

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

18. 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.

19. 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.

20. 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 Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4024.

Sincerely,

Jeffrey A. Saitas, P.E.
Executive Director
Texas Natural Resource Conservation Commission

JAS/JEM/eg

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

cc: Mr. Russell Masters, AllianzA, LLC
Mr. John Bohuslav, TXDOT San Antonio District
Mr. Tom Homseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TNRCC Field Operations, Austin

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Kathleen Hartnett White, *Commissioner*
Margaret Hoffman, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 17, 2003

Mr. Guillermo Nieri
Comal Independent School District
278 Loop 337
New Braunfels, TX, 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Comal ISD - Hoffman Lane Elementary School; Located on the northeast side of FM 306 at Hoffman Lane; New Braunfels, Texas
TYPE OF PLAN: Request for Modification of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 1455.00

Dear Mr. Nieri:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the request for modification of the approved WPAP for the referenced project submitted to the San Antonio Regional Office by Harold L. Millegan, P.E. of Lockwood, Andrews, & Newnam, Inc. on behalf of Comal Independent School District on February 21,2003. Final review of the WPAP submittal was completed after additional material was received on June 18, 2003. 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 20 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

This facility was previously approved by letter dated April 26, 2000. As presented, the proposed modification will consist of the following changes:

1. The basin liner will be reinforced concrete rip-rap instead of clay.

2. The sedimentation basin dimensions have been altered. The storage volume for the basin is 2[illegible] cubic feet.

3. A maintenance access ramp, drainpipes, and gate valves were added to the sand filtration basin.

4. The weir/emergency spillway has been downsized and moved, and the inflow structure from the underground storm drain system has been modified.

5. The vegetated filter strip for the north access road (Drainage Area 3) and the water storage facility has been resized.

6. The percent impervious cover of the site was changed from 27.98% to 28.80%.

7. Wastewater will be disposed of by an on-site sewage facility with a drip irrigation disposal system instead of a new wastewater treatment plant. According to Comal County Permit Number 81995 issued March 21, 2001, by the office of the Comal County Engineer, the site is acceptable for the use of on-site sewage facilities.

8. Nine weep holes located below the sand filter in the filtration chamber will be plugged to make a watertight seal.

PERMANENT POLLUTION ABATEMENT MEASURES

A full sedimentation/filtration basin and two vegetated filter strips designed using the TNRCC technical guidance document, *Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (June 1999) will be constructed to treat storm water runoff. The basin treating Drainage Area 1 is designed to provide treatment for 10.83 acres of the site with a minimum capture volume of 23,116 cubic feet and a minimum sand filter area of 2,238 square feet. The Drainage Area 2 vegetated filter strip of 4,350 square feet is designed to provide treatment for 0.2 acres of impervious cover. The Drainage Area 3 vegetated filter strip of 10,800 square feet is designed to provide treatment for 0.496 acres of impervious cover. The approved measures have been presented to meet the required 80 percent removal of the increased load in total suspended solids caused by the project.

SPECIAL CONDITIONS

I. All sediment and or media removed from the partial sedimentation/filtration basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335 as applicable.

II. Please note that for full sedimentation/filtration basins, the Technical Guidance Manual on Best Management Practices (1999 edition), suggests using the valve in Section 3.4.7 and Figure 3.14 for the purpose of isolating the sedimentation basin in case of a hazardous material spill in the watershed.

STANDARD CONDITIONS

1. Pursuant to §26.136 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.

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. Abandoned injection wells must be closed under the requirements of 30 TAC Chapter 331 (relating to Underground Injection Control).

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

<u>During Construction:</u>

9. 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.

10. 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.

11. 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.

12. 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).

13. 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.

14. 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.

15. To the maximum extent practicable, BMPs and measures must maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction. 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. A request to temporarily seal the feature must include a justification that no reasonable and practicable alternative exists. The request will be evaluated by the executive director on a case-by-case basis.

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

16. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

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

in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

18. 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.

19. 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.

20. 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 Lynn M. Bumguardner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4023.

Sincerely,

Bobby D. Caldwell

for Margaret Hoffman
Executive Director
Texas Commission on Environmental Quality

MH/LMB/eg

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

cc: Mr. Philip Johnson, Lockwood, Andrews & Newnam, Inc.
Mr. John Bohuslav, TXDOT San Antonio District
Mr. Tom Hornseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Doc# 200306023662
Pages 7
07/03/2003 08:08:44 AM
Filed & Recorded in
Official Records of
COMAL COUNTY
JOY STREATER
COUNTY CLERK
Fees $21.00

STATE OF TEXAS
COUNTY OF COMAL

This is to certify that this document was FILED and RECORDED in the Official Public Records of Comal County, Texas on the date and time stamped thereon.

Joy Streater
COUNTY CLERK

Doc# 200306023662

ATTACHMENT B
NARRATIVE OF MODIFICATIONS TO A PREVIOUSLY APPROVED WPAP PLAN
COMAL INDEPENDENT SCHOOL DISTRICT
HOFFMAN LANE ELEMENTARY SCHOOL

Background

The existing site consists of an Elementary School, parking and drives, playgrounds, onsite sewage facility, and full sedimentation/filtration basin. A Water Pollution Abatement Plan was approved for the construction of the school site on April 26, 2000. The original application described an existing impervious cover of 5.98 acres. An approved modification to the WPAP dated June, 17 2003, increased the impervious cover to 6.155 acres.

Modification

This modification is being submitted for a proposed addition to an existing building, proposed A/C pad and alterations to the existing full sedimentation/filtration basin. With the completion of all the proposed improvements, the impervious cover will be 7.461 acres.

Some improvements have been done to the site between the application of this modification and the previous modification. These improvements include playgrounds and sidewalks. The increase in impervious cover was accounted for in the proposed 7.461 acres and will bring the overall impervious cover of the site to 34.9%. Modifications to the permanent erosion control structures are described in the following paragraphs.

1. The full sedimentation/filtration pond currently at the site will not be sufficient for the increase in impervious cover. A partial sedimentation/filtration pond has been proposed and will require modifications to the original structure.

2. The east wall of the filtration basin will need to be removed to allow for additional filter area and storage. The wall that separates the sedimentation basin and filtration basin will also need to be removed and replaced with rock gabions to allow water levels in both basins to equalize.

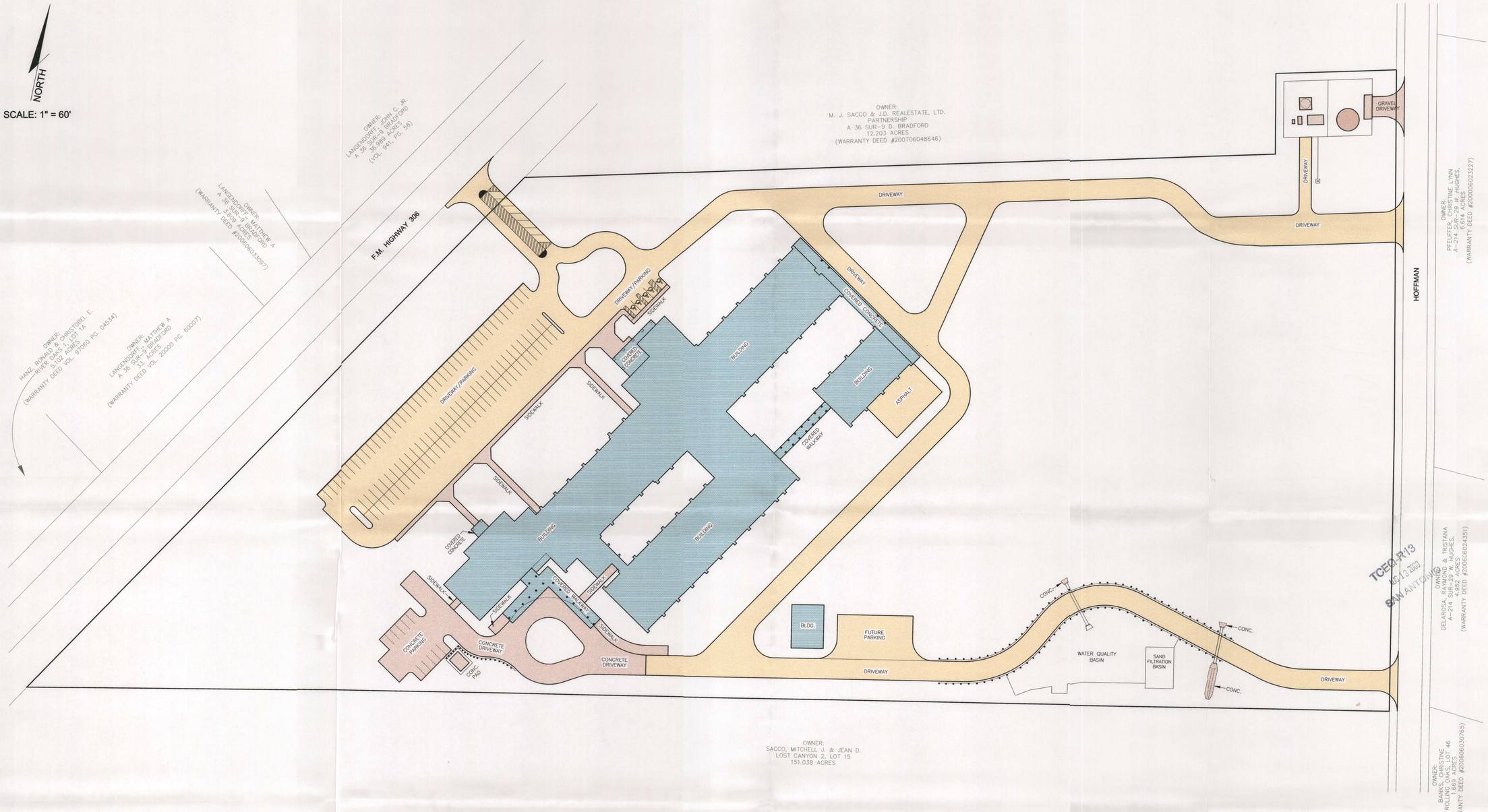
3. The storage of the existing pond is approximately 23,120 cubic feet and will be increased to 38,257 cubic feet. The sand filter areas will be increased from 1,291 SF to 3,034 SF.

4. Due to the increase in impervious cover, the depth of flow over the existing flow splitter weir increased. To accommodate the increased depth, the top of pond elevation was raised with an approximate 12" high wall extension.

ATTACHMENT C
CURRENT SITE PLAN OF THE APPROVED PROJECT

NORTH

SCALE: 1" = 60'



LEGEND

TOTAL = 29,351 SF		MISCELLANEOUS: CONCRETE SIDEWALKS / CONCRETE PADS, PLAY AREAS, A/C PADS, COMPACTED BASE AREAS, ETC.
TOTAL = 144,510 SF		PARKING / DRIVEWAY
TOTAL = 94,251 SF		STRUCTURE / ROOFTOPS
TOTAL = 268,112 S.F.		
TOTAL = 6.155 ACRES APPROVED IMPERVIOUS COVER		

REVISIONS

NO.	DATE	DESCRIPTION	BY:

PROJ. # 090038 | DGN. BY: D.A.M. | DWN. BY: B.D.L. | CHKD. BY: D.A.M. | DATE: 5/27/09

MOY CIVIL ENGINEERS
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5065

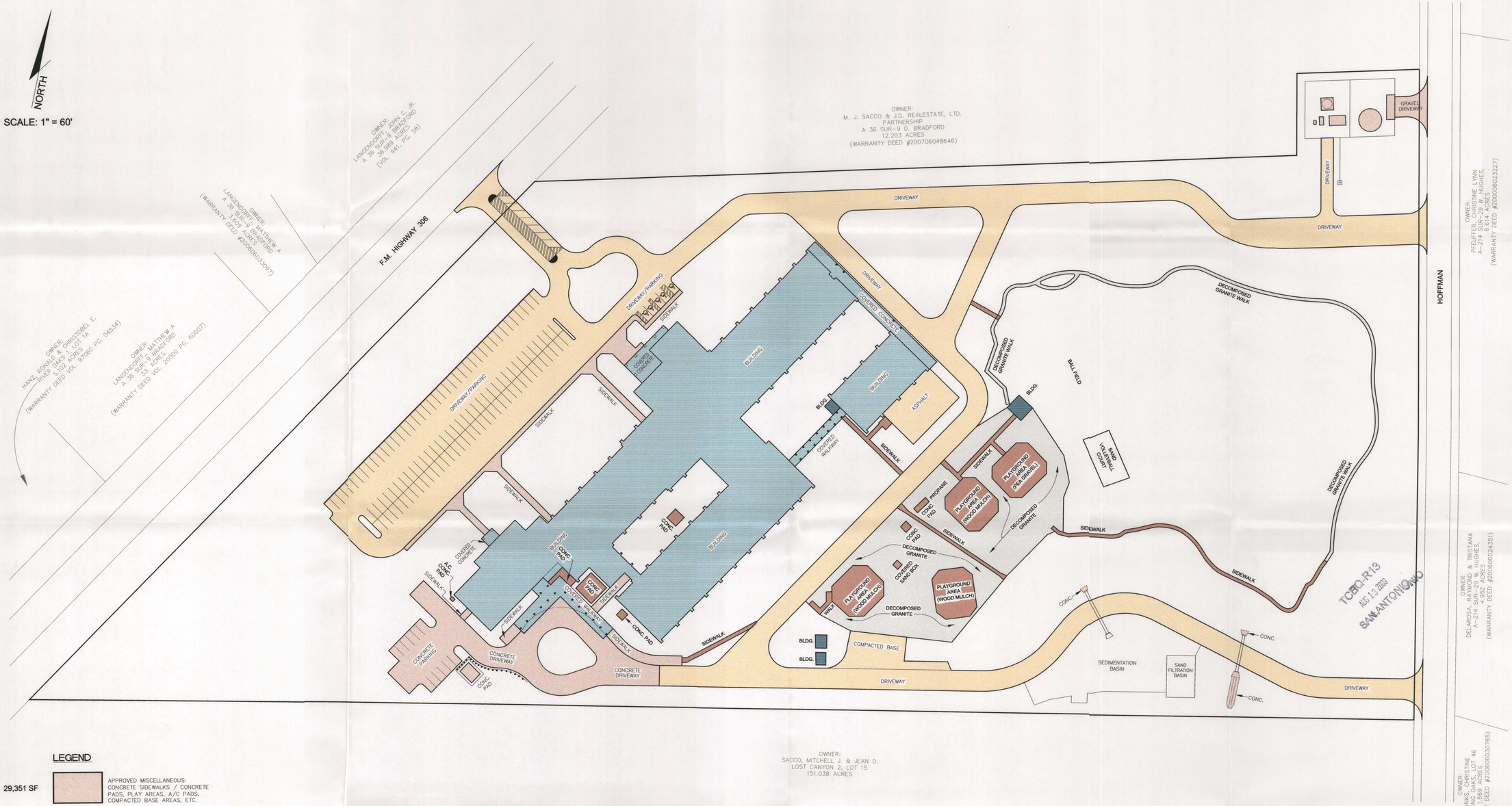
HOFFMAN LANE ELEMENTARY SCHOOL

APPROVED IMPERVIOUS COVER PLAN

SHEET 1 OF 1

NORTH

SCALE: 1" = 60'



LEGEND

TOTAL = 29,351 SF	APPROVED MISCELLANEOUS: CONCRETE SIDEWALKS / CONCRETE PADS, PLAY AREAS, A/C PADS, COMPACTED BASE AREAS, ETC.
TOTAL = 144,510 SF	APPROVED PARKING / DRIVEWAY
TOTAL = 92,091 SF	APPROVED STRUCTURE / ROOFTOPS
TOTAL = 18,081 SF	ADDED MISCELLANEOUS: CONCRETE SIDEWALKS / CONCRETE PADS, PLAY AREAS, A/C PADS, COMPACTED BASE AREAS, ETC.
TOTAL = 39,044 SF	ADDED DECOMPOSED GRANITE
TOTAL = 1,085 SF	ADDED STRUCTURE / ROOFTOPS

TOTAL = 324,162 S.F.

TOTAL = 7.442 ACRES EXISTING IMPERVIOUS COVER

NO.	DATE	REVISIONS DESCRIPTION	BY

PROJ. #	DSN. BY:	DWN. BY:	CHKD. BY:	DATE:
090038	D.A.M.	B.D.L.	D.A.M.	5/21/09

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FAX: (210) 698-5085

HOFFMAN LANE ELEMENTARY SCHOOL

EXISTING IMPERVIOUS COVER PLAN

SHEET 1 OF 1

V:\090030- Comal ISD Gym Addition\Hoffmann Elementary\dwg\09-0616-COLOR-EXH-COMPETE-Hoffman elementary school-.dwg, 8/4/2009 7:57:00 AM, SSmith, 1:60

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: Comal ISD Hoffman Lane Elementary School

REGULATED ENTITY INFORMATION

1. The type of project is:
   - ___ Residential: # of Lots: _____
   - ___ Residential: # of Living Unit Equivalents: _____
   - ___ Commercial
   - ___ Industrial
   - _X_ Other: School

2. Total site acreage (size of property): 21.370

3. Projected population: 900 – (800 students, 100 faculty and staff)

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	93,780	÷ 43,560 =	2.15
Parking	144,510	÷ 43,560 =	3.32
Other paved surfaces	86,692	÷ 43,560 =	1.99
Total Impervious Cover	324,982	÷ 43,560 =	7.46
Total Impervious Cover ÷ Total Acreage x 100 =			34.9%

5. _X_ **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.

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

FOR ROAD PROJECTS ONLY

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

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

8. Type of pavement or road surface to be used:
   - ___ Concrete
   - ___ Asphaltic concrete pavement
   - ___ Other: _____

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

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

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

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

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. **ATTACHMENT B - Volume and Character of Stormwater.** A 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. 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.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

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

100 % Domestic	6400 gallons/day
__% Industrial	_____ gallons/day
__% Commingled	_____ gallons/day

TOTAL 6400 gallons/day

15. Wastewater will be disposed of by:
_X_ **On-Site** Sewage Facility (OSSF/Septic Tank): **(EXISTING TREATMENT FACILITY)**
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 _____(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.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = __60__'.

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.
_X_ 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 – Comal County Panel No. 4854630110C 9/29/86

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.):
_X_ There are _1_(#) 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.
_X_ The wells are not in use and will be properly abandoned.
__ The wells are in use and comply with 30 TAC §238.
__ 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 and possibly sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.
_X_ No **sensitive and possibly sensitive** geologic or manmade features were identified in the Geologic Assessment.
__ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. Geologic or manmade features were found and are shown and labeled.
__ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. No geologic or manmade features were found.

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

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

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

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

26. _N/A_ Surface waters (including wetlands).

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

ADMINISTRATIVE INFORMATION

28. _X_ One (1) original and three (3) copies of the completed application have been provided.

29. _X_ Any modification of this WPAP will require TCEQ 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:

Diane A. Moy
Print Name of Customer/Agent

Diane A Moy — 8/3/09
Signature of Customer/Agent — Date

ATTACHMENT A
FACTORS AFFECTING WATER QUALITY

Landscaping, vehicular traffic, and various construction activities may affect the quality of stormwater originating on the proposed site. These factors may cause small amounts of oil, grease, suspended solids, fertilizers, and pesticides to enter into the stormwater runoff. However, BMPs, both temporary and permanent, have been designed on the basis of the Technical Guidance Manual to treat the required amount of stormwater runoff as to not adversely affect water quality entering into any surface water or groundwater.

ATTACHMENT B
VOLUME AND CHARACTER OF STORMWATER

Volume

The rational method (Q=CIA) was used to calculate the 25 year storm event. The run off area that will be treated in the partial sedimentation/filtration basin is 10.83 acres. The following areas and volumes were calculated:

Entire Site – 21.37 acres

Existing Conditions
Area = 21.370 acres
Impervious Cover = 6.155 acres
Percent Impervious = 28.8%
Q_{25} = 103.8 cfs

Post-Development Conditions
Area = 21.370 acres
Impervious Cover = 7.463 acres
Percent Impervious = 34.9%
Q_{25} = 125.86 cfs

Character

The existing developed property is vegetated with native grasses and live oak trees, and slopes from northwest to southeast with slopes averaging 6-10 percent. The tract is currently divided topographically into two sub-drainage areas. Runoff from the developed western portion (approximately 10.83 acres) currently drains to the sedimentation/filtration basin, and is conveyed by underground storm drains. Runoff from the developed eastern portion (approximately 0.54 acres) drains to the southeast and enters a bar ditch that runs parallel to Hoffman Lane and eventually running into Alligator creek. Water quality is sufficient since a majority of the impervious cover is treated by the sedimentation/filtration basin and two (2) vegetative filter strips.

Runoff from the parking lots of the development includes total suspended solids (TSS), oil and grease (O&G) from vehicular traffic. Trace amounts of fertilizer may be expected from landscaping and lawn care. The runoff will flow into the proposed partial sedimentation/filtration basin where large sediment will separate in the sedimentation basin and then enter the sand filtration basin for further filtration and then finally exit the basin. Two (2) existing vegetative filter strips treat the runoff from impervious cover that does not drain into the sedimentation/filtration pond. The three (3) permanent BMPs will remove at least 80% of the overall TSS generated by this development.

Attachment C



Comal County

OFFICE OF COMAL COUNTY ENGINEER

License to Operate
On-site Sewage Treatment and Disposal Facility

Date Issued: 8/16/2002

Permit Number: 81995

Location Description:	Hoffmann Lane @ FM 306, 21.485 Acres, New Braunfels, TX 78130 Lot n/a, Block n/a, Daniel Bradford Surv 9 Abst 36 Subdivision
Type of System:	Septic Tank Treatment with Drip Emitters Discharge
License issued to:	Comal Independent School District

This license is authorization for the owner to operate and maintain a private facility at th location described in accordance to the rules and regulations for on-site sewerage facilitie of Comal County, Texas, and the Texas Natural Resource Conservation Commission.

The license grants permission to operate the facility. It does not guarantee successful operation. It is the responsibility of the owner to maintain and operate the facility in satisfactory manner.

Inspection and licensing of a facility indicates only that the facility meets certain minimum requirements. It does not impede any governmental entity in taking the proper steps to prevent or control pollution, to abate nuisance, or to protect the public health.

This license to operate is valid for an indefinite period. The holder may transfer it to a succeeding owner, provided the facility has not been remodeled and is functioning properly.

Licensing Authority

Comal County Environmental Health

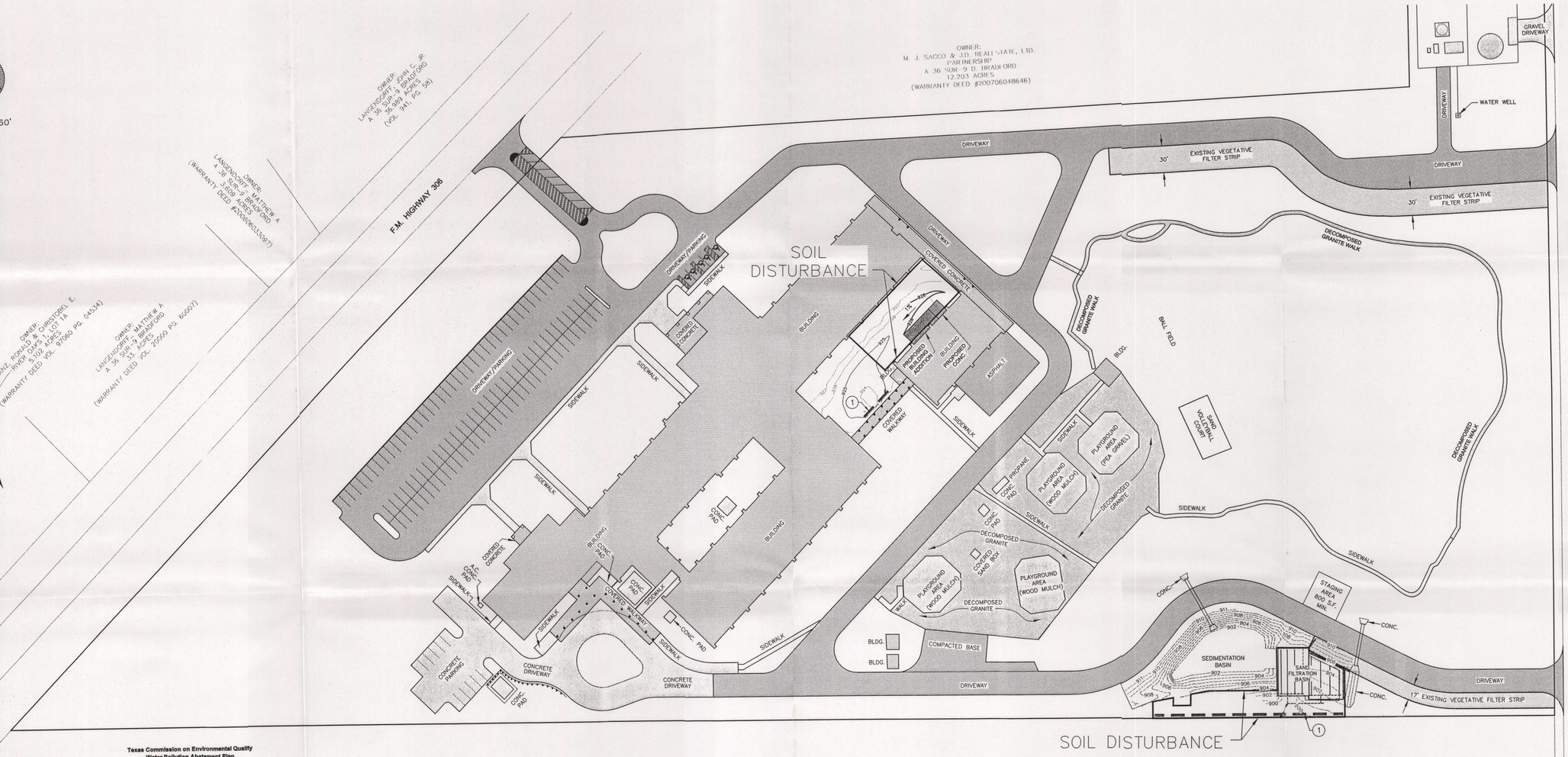
OS8479
ENVIRONMENTAL HEALTH INSPECTOR

OS7722
ENVIRONMENTAL HEALTH COORDINATOR

This "License-Operate" report was printed on 8/20/2002 by: Comal County Environmental Health, , operator, using CASST Ver.2.1

195 David Jonas Drive • New Braunfels, Texas 78130 • (830) 608-2090 FAX (830) 608-2009

SCALE: 1"=60'



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 than48 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 conditionsof its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
4. No temporary aboveground hydrocarbon and hazardous substance storage tank system is installedwithin 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 mustremain 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 removedat a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washd 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 desig 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 fro 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&Scontrols. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner ofhe site must receive approval of a water pollution abatement plan for the placement of fill material or mass gradg 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 tivity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measure by the 14th day after construction activity temporary or permanently cease is precluded by weather condition stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the sh is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measuresdo not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilizatn 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 datewhen major grading activities occur; the dates when construction activities temporarily or permanently cease on portion of the site; and the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
    A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office 2800 S. IH 35, Suite 100 Austin, Texas 78704-5712 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

GENERAL NOTES

LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED. THESE ARE THE TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES.

SOIL STABILIZATION PRACTICES SHALL OCCUR OVER THE AREAS DISTURBED THROUGH THE USE OF CONCRETE, BUILDINGS, GRASS SOD, GRASS SEEDING AND/OR MULCH.

THERE ARE NO LOCATIONS WHERE STORMWATER DISCHARGES TO SURFACE WATER.

INSPECTION OF TEMPORARY BMPS (SILT FENCES, BAGGED GRAVEL INLET FILTERS, ROCK BERMS, AND TEMPORARY CONSTRUCTION ENTRANCE/EXIT DEVICES) SHALL BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

NO 100 YR FEMA FLOODPLAIN. SEE ATTACHED EXHIBIT FOR BMP CATCHMENT AREAS.

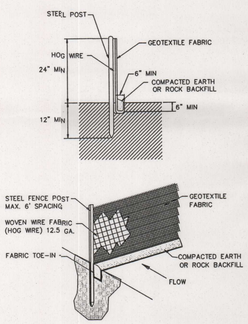
SOIL DISTURBANCE WILL ONLY OCCUR AT BUILDING ADDITION AND SEDIMENTATION/FILTRATION POND AREAS AS LABELED ON THIS DRAWING.

LEGEND

- ------1200------ EXISTING CONTOURS
- ——1200—— PROPOSED CONTOURS
- ▬▬▬▬▬ LIMITS OF SOIL DISTURBANCE

BMP KEYNOTES

① SILT FENCE - - - - -



SILT FENCE
N.T.S.

RECEIVED
AUG 13 2009
SAN ANTONIO

NO.	DATE	REVISIONS DESCRIPTION	BY

PROJ. #	DGN. BY:	DWN. BY:	CHKD. BY:	DATE:
090038	D.A.M.	B.D.L.	D.A.M.	5/21/09

MOY CIVIL ENGINEERS
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
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FAX. (210) 698-5085

STATE OF TEXAS
DANIEL A. MOY
68228
REGISTERED PROFESSIONAL ENGINEER

HOFFMAN LANE ELEMENTARY SCHOOL
WPAP SITE PLAN

SHEET
1 OF 1

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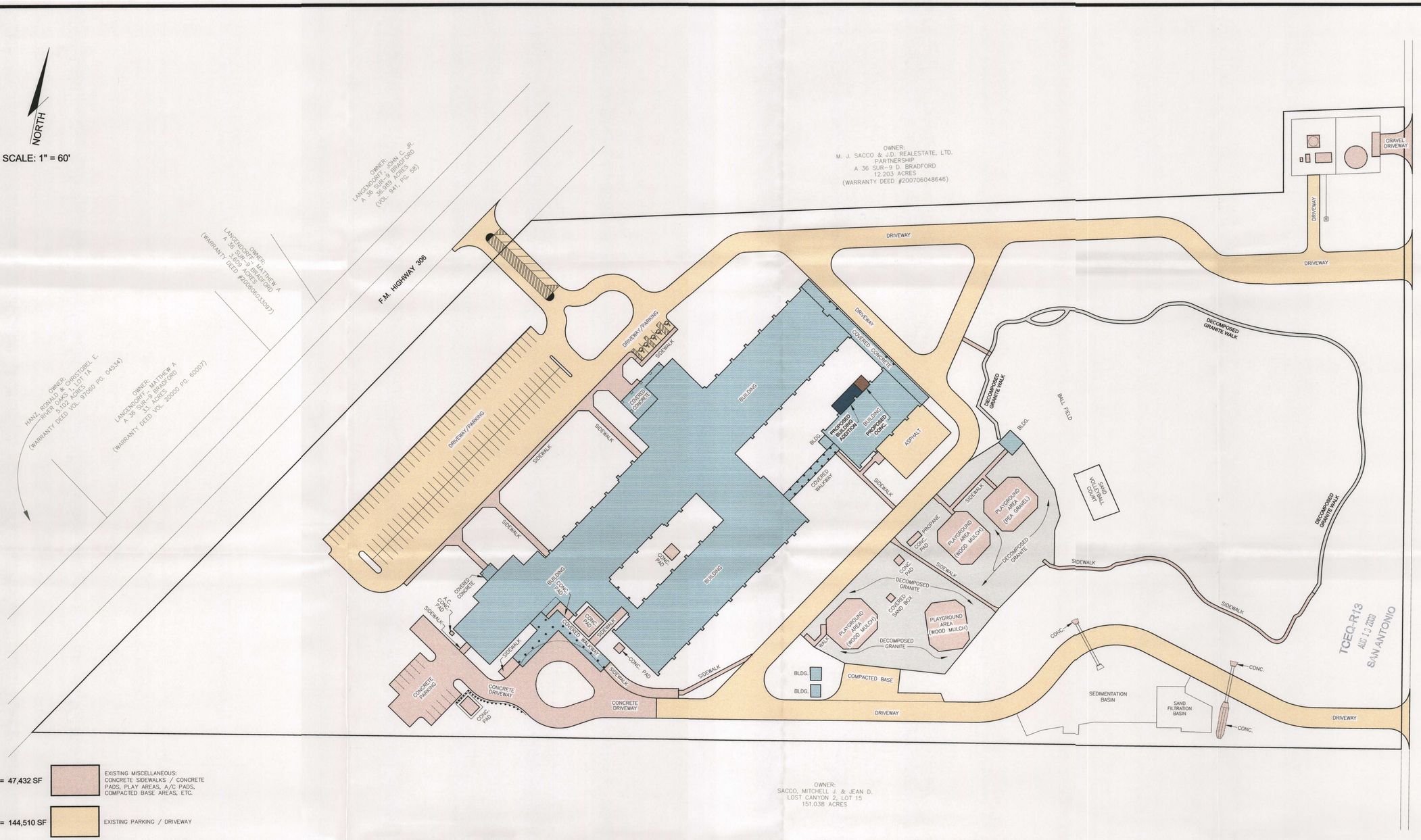
NORTH

SCALE: 1" = 60'



TOTAL = 47,432 SF		EXISTING MISCELLANEOUS: CONCRETE SIDEWALKS / CONCRETE PADS, PLAY AREAS, A/C PADS, COMPACTED BASE AREAS, ETC.
TOTAL = 144,510 SF		EXISTING PARKING / DRIVEWAY
TOTAL = 93,176 SF		EXISTING STRUCTURE / ROOFTOPS
TOTAL = 39,044 SF		EXISTING DECOMPOSED GRANITE
TOTAL = 216 SF		PROPOSED MISCELLANEOUS: CONCRETE SIDEWALKS / CONCRETE PADS, PLAY AREAS, A/C PADS, COMPACTED BASE AREAS, ETC.
TOTAL = 604 SF		PROPOSED STRUCTURE / ROOFTOPS

TOTAL = 324,982 S.F.

TOTAL = 7.461 ACRES PROPOSED IMPERVIOUS COVER

REVISIONS						
NO.	DATE	DESCRIPTION	BY:			

PROJ. #	DGN. BY:	DWN. BY:	CHKD. BY:	DATE:
090038	D.A.M.	B.D.L.	D.A.M.	5/21/09

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12770 OMARION PATH, SUITE 100
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TEL: (210) 698-5051
FAX: (210) 698-5085

HOFFMAN LANE ELEMENTARY SCHOOL

PROPOSED IMPERVIOUS COVER PLAN

SHEET 1 OF 1

V:\090030- Comal ISD Gym Addition\Hoffmann Elementary\dwg\09-0616-COLOR-EXH-COMPETE-Hoffman elementary school-.dwg, 8/4/2009 8:37:57 AM, SSmith, 1:60

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: Comal ISD Hoffman Lane Elementary School

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 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.

   _X_ Fuels and hazardous substances will not be stored on-site.

2. _X_ **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. _X_ 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. _X_ **ATTACHMENT B - Potential Sources of Contamination.** Describe 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.

SEQUENCE OF CONSTRUCTION

5. _X_ **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. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. _X_ 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: Alligator 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. _X_ **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. 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.

_X_ 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

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.

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.

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

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.

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

__ **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. _X_ **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.

10. _X_ **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided at the end of this form 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.

_X_ 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.

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. _X_ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repairs, 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. _X_ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. _X_ 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. _X_ 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. _X_ 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. _X_ **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.

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

ADMINISTRATIVE INFORMATION

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

21. X 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. X 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:

Duane A. May
Print Name of Customer/Agent

Duane A May — 8/3/09
Signature of Customer/Agent — Date

ATTACHMENT A
SPILL RESPONSE ACTIONS

1. Housekeeping

   A. Minimize materials: An effort will be made to store only enough materials required to do the job.

   B. Storage: All materials stored on site will be stored in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not feasible, then the materials will be covered with polyethylene or polypropylene sheeting to protect them from the elements.

   C. Labeling: Products will be kept in their original containers with the original manufacturer's label affixed to each container.

   D. Mixing: Substances will not be mixed with one another unless this is recommended by the manufacturer.

   E. Disposal: Whenever possible, all of a product will be used prior to disposal of the container. Manufacturer's recommendations will be followed for proper use and disposal of materials on site.

   F. Inspections: The site superintendent will inspect the site daily to ensure proper use and disposal of materials on site.

   G. Spoil Materials: Any excavated earth that will not be used for fill material and all demolished pavement will be hauled off site immediately and will be disposed of properly, in accordance with all applicable state/local regulations.

2. Product Specific Practices

   A. Petroleum Products: All on site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. If petroleum products will be present at the site, then they will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used on site will be applied according to the manufacturer's recommendations.

   B. Concrete Trucks: Ready/Transit Mix Trucks will not be allowed to wash out or discharge surplus concrete or drum wash water except in the designated location on site as shown on the SWPPP site plan.

   C. Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be poured into storm sewer system or drainage channels, but will be properly disposed of according to manufacturers' instructions or state/local regulations.

   D. Fertilizers: Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. The fertilizer will be stored in a covered area, and any partially used bags will be transferred to a sealable plastic bin to avoid spills.

3. Spill Control and Response Measures

A spill prevention and response team will be designated by the site superintendent. In addition, the following practices will be followed for spill cleanup:

A. Information: Manufacturers' recommended methods for spill cleanup will be clearly posted, and site personnel will be made aware of the procedures and location of the information and cleanup supplies.

B. Equipment: Materials and equipment necessary for spill cleanup will be present on the site at all times. Equipment and materials will include, but not be limited to brooms, shovels, rags, gloves, goggles, absorbent materials (sand,sawdust,etc.) and plastic or metal trash containers specifically designed for this purpose. The materials and equipment necessary for spill cleanup will be dependent upon the nature and quantity of the material stored on site.

C. Response: All spills will be cleaned up immediately upon discovery.

Cleanup

(1) Clean up leaks and spills immediately

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in TCEQ Technical Guidance Manual RG-348 for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:
(1) Contain spread of the spill.
(2) Notify the project foreman immediately.
(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
(5) If the spill occurs during rain, cover the spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:
(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
(3) Notification should first be made by telephone and followed up with a written report.
(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up untilo the appropriate and qualified staffs have arrived at the job site.
(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

D. Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
(8) Oil filters disposed of in trash cans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can be recycled. Ask the oil supplier or recycler about recycling oil filters.
(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

E. Vehicle and Equipment Fueling
(1) If fueling must occur onsite, use designated areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
(2) Discourage "topping off" of fuel tanks.
(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

F. Safety: The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.

G. Reporting: Spills of toxic or hazardous material (if present on site) will be reported to the appropriate state or local government agency, regardless of the spill's size.

H. Record Keeping: The spill prevention plan will be modified to include measures to prevent this type of spill from recurring as well as improved methods for cleaning up any future spills. A description of each spill, what caused it, and the cleanup measures used will be kept with this plan.

ATTACHMENT B
POTENTIAL SOURCES OF CONTAMINATION

Potential Source	Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
Preventive Measure	Vehicle maintenance when possible will be performed within a construction staging area specified by the General Contractor.
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	Stormwater contamination from excess application of fertilizers, herbicides and pesticides.
Preventive Measure	Fertilizers, herbicides and pesticides will be applied only when necessary and in accordance with manufacturers directions.
Potential Source	Soil and mud from construction vehicle tires as they leave the site.
Preventive Measure	A stabilized construction exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.
Potential Source	Sediment from soil, sand, gravel and excavated materials stockpiled on site.
Preventive Measure	Silt fence shall be installed on the downgradient side of all stockpiled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

ATTACHMENT C
SEQUENCE OF MAJOR ACTIVITIES

Construction Sequencing

A. Installation of Temporary BMPs as shown on the WPAP Site Plan. Silt fence will be placed along the down gradient boundary. (0.1 acres disturbed)

B. Grading for Building Addition and Pond expansion (0.3 acres disturbed)

C. Building construction. (0.1 acres disturbed)

D. Sedimentation / Filtration basin construction. (0.2 acres disturbed)

E. Installation of topsoil and permanent vegetation for stabilization. (0.2 acres disturbed)

ATTACHMENT D
TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Description of Temporary Best Management Practices:

1. Temporary Construction Entrance/Exit (Item A) – A stabilized pad of crushed stone located at any point where traffic will be entering or leaving the construction site from a public R.O.W., street, alley, sidewalk or parking area. It shall be a minimum of 50 feet long, 12 feet wide and 8 inches thick. The rock shall be 4" to 8" in size.

2. Silt Fence (Item B) – A barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. Silt fences shall be installed on the downgradient side of the proposed areas to be disturbed that have a drainage area of 2 or less acres.

3. Rock Berm (Item C) – A sediment trap consisting of 3" to 5" diameter rock wrapped in woven wire sheathing. The berm shall have a minimum height of 18" and a minimum top width of 2 feet. A rock berm shall be placed at locations of concentrated flows where the drainage area is between 2 and 5 acres.

4. Temporary Seeding – Temporary seeding of disturbed areas shall be performed if disturbed areas are expected to have no construction activity for a period of at least 21 days.

Sequence of installation during construction process for each phase of construction:

1. Silt Fence (Item B) shall be installed along the downgradient sides of the site as indicated on the WPAP Site Plan prior to any disturbance of the site.

Up gradient storm water flowing across the site:

Contributing storm water runoff from the up gradient right-of-way adjacent property on the west side of the site will be diverted around the proposed impervious cover areas and will be treated with onsite runoff. Up gradient storm water flows that flow across the site will be treated prior to leaving the site.

Onsite storm water flowing across and off the site:

The storm water originating onsite and flowing off the site will be treated through temporary BMPs. Silt fences will be installed at all locations where non-concentrated storm water exits the site. Silt fence will also be installed down gradient of the building addition to prevent sediment buildup.

Prevention of pollutants from entering surface streams, sensitive features and the aquifer:

The storm water originating onsite and flowing off the site will be treated using temporary BMPs prior to it entering surface streams, sensitive features and the aquifer. Silt fences will be installed at all locations where non-concentrated storm water may leave the site. These silt fences should filter the storm water prior to it leaving the site.

Maintaining flow to naturally-occurring sensitive features:

The storm water originating onsite and flowing off the site will continue to flow into the down gradient receiving waters. Any sensitive features downstream will continue to receive flow originating on the site. Prior to the flow leaving the site, it will be treated through temporary BMPs. These temporary BMPs should remove sediment, pollutants and debris if installed and maintained properly.

ATTACHMENT F
STRUCTURAL PRACTICES

Runoff discharge of pollutants from exposed areas of the site will be limited through the utilization of temporary BMPs. Prior to leaving the site, flows containing pollutant discharges will be treated by a silt fence which will limit the amount of pollutants leaving the site.

The silt fence shall be installed prior to the initiation of site preparation and earth moving activities. All temporary BMPs shall be installed and maintained in accordance with TCEQ RG-348 July 2005.

Location of the BMPs is shown on the WPAP Site Plan.

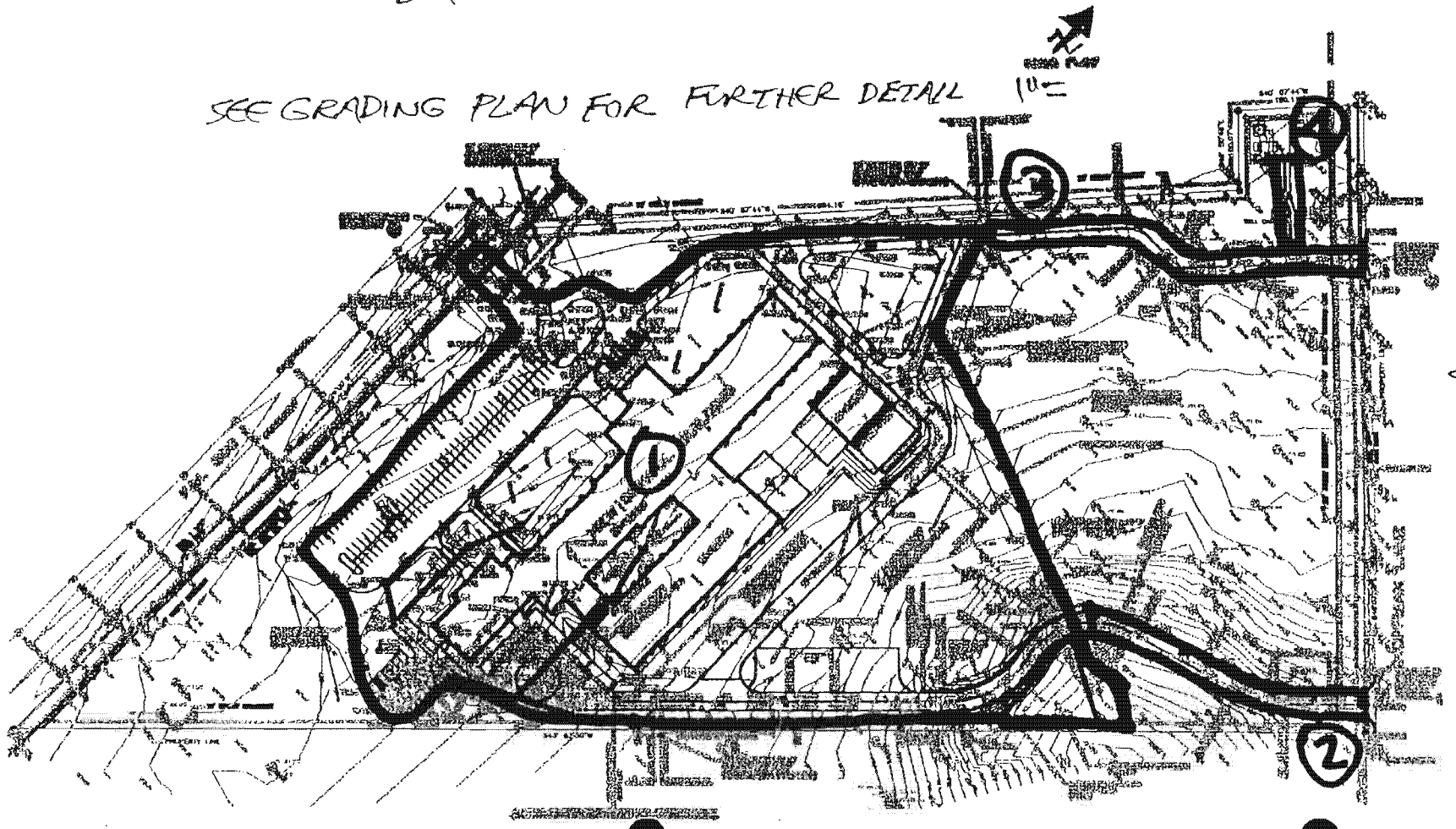
ATTACHMENT G
DRAINAGE AREA MAP

DRAINAGE AREA MAP

ATTACHMENT G

AREAS	ACRES DISTURBED
DA 1 10.83 ac. —	0.3 ac.
DA 2 0.20 ac. —	0 ac.
DA 3 0.29 ac. —	0 ac.
DA 4 0.03 ac. —	0 ac.

SEE GRADING PLAN FOR FURTHER DETAIL



ATTACHMENT I
INSPECTION AND MAINTENANCE FOR BMPS

Silt Fence

1. Inspect all fencing weekly, and after any rainfall.
2. Remove sediment when buildup reaches 6 inches, or install a second line of fencing parallel to the old fence.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed in the course of construction activity.

Rock Berm

1. Inspections should be made weekly and after each rainfall by the responsible party.
2. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner.
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.

Temporary Construction Entrance and Exits

1. The entrance should be maintained in a condition, which will prevent tracking or following of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
2. All sediment spilled, dropped, washed or tracked on to public rights-of-ways should be removed immediately by contractor.
3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
5. All sediment should be prevented from entering any storm drain, ditch, or water course by using approved methods.

Bagged Gravel Inlet Filter

1. Inspections should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by 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.

HOFFMAN LANE ELEMENTARY SCHOOL

Inspection Report

Note: Contractor shall retain the inspection report on site for review by regulating agencies.

Pollution Prevention Measure		Inspected	Corrective Action	
			Description	Date Completed
Silt Fences	Inspections			
	Fencing			
	Sediment Removal			
	Torn Fabric			
	Crushed/Collapsed Fencing			

Inspector's Name

Inspector's Signature

Inspection Date

ATTACHMENT J
SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

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 temporarily or permanently ceases 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 the 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.

Temporary stabilization shall consist of temporary seeding of disturbed areas that are denuded beyond 14 days without construction restart within 21 days.

As pad sites (buildings, sidewalks and pavement) are completed, permanent landscaping and sod shall be planted and irrigated. Curb and gutter will direct runoff into the permanent water quality basin.

Temporary vegetation stabilization techniques shall be in accordance with the TCEQ Technical Guidance Manual RG-248 (*Complying with the Edwards Aquifer Rules – Technical Guidance on Best Management Practices*), Chapter 1 Temporary Best Management Practices, Section 1.3.8 Temporary Vegetation, as follows:

Temporary Vegetation

Vegetation is used as a temporary or permanent stabilization technique for areas disturbed by construction, but not covered by pavement, buildings, or other structures. As a temporary control, vegetation can be used to stabilize stockpiles and barren areas that are inactive for long periods of time.

Vegetative techniques can and should apply to every construction project with few exceptions. Vegetation effectively reduces erosion in swales, stockpiles, berms, mild to medium slopes, and along roadways.

Other techniques may be required to assist in the establishment of vegetation. These other techniques include erosion control matting, mulches, surface roughening, swales and dikes to direct runoff around newly seeded areas, and proper grading to limit runoff velocities during construction. (NCTCOG, 1993b)

Materials:

The type of temporary vegetation used on a site is a function of the season and the availability of water for irrigation. For areas that are not irrigated, the year can be divided into two temporary planting seasons and one season for planting of permanent

warm weather groundcovers. These periods are shown in Figure 1-19 for Bexar, Comal, Kinney, Medina, and Uvalde Counties. Appropriate temporary vegetation for these areas are shown in Table 1-4.

Other vegetation may perform as well as the recommended varieties, especially where irrigation is available. County agricultural extension agents are a good source for suggestions for other types of temporary vegetation. All seed should be high quality, U.S. Dept. of Agriculture certified seed.

Installation:
(1) Interim or final grading must be completed prior to seeding, minimizing all steep slopes. In addition, all necessary erosion structures such as dikes, swales, and diversions, should also be installed.

(2) Seedbed should be well pulverized, loose, and uniform.

(3) Fertilizer should be applied at the rate of 40 pounds of nitrogen and 40 pounds of phosphorus per acre, which is equivalent to about 1.0 pounds of nitrogen and phosphorus per 1000 square feet. Compost can be used instead of fertilizer and applied at the same time as the seed.

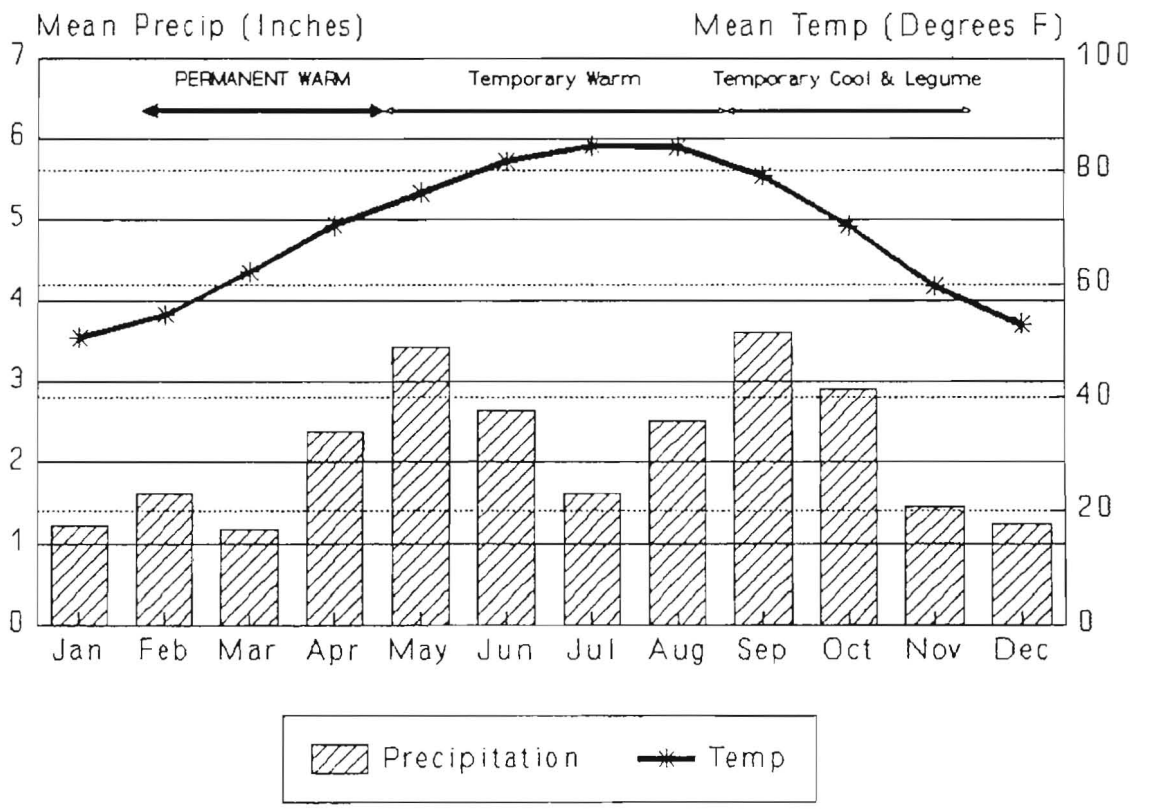


Figure 1-19 Planting Dates for Bexar, Comal, Kinney, Medina, and Uvalde Counties (Northcutt, 1993)

Table 1-4 Temporary Seeding for Bexar, Comal, Kinney, Medina, and Uvalde Counties (Northcutt, 1993)

Dates	Climate	Species (lb/ac)	
Sept 1 to Nov 30	Temporary Cool Season	Tall Fescue	4.0
		Oats	21.0
		Wheat (Red, Winter)	30.0
		Total	**55.0**
Sept 1 to Nov 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug 31	Temporary Warm Season	Foxtail Millet	30.0

(4) Seeding rates should be as shown in Table 1-4 or as recommended by the county agricultural extension agent.

(5) The seed should be applied uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed, fertilizer and binder).

(6) Slopes that are steeper than 3:1 should be covered with appropriate soil stabilization matting as described in the following section to prevent loss of soil and seed.

Irrigation

Temporary irrigation should be provided according to the schedule described below, or to replace moisture loss to evapotranspiration (ET), whichever is greater. Significant rainfall (on-site rainfall of ½" or greater) may allow watering to be postponed until the next scheduled irrigation.

Time Period	Irrigation Amount and Frequency
Within 2 hours of installation	Irrigate entire root depth, or to germinate seed
During the next 10 business days	Irrigate entire root depth every Monday, Wednesday, and Friday
During the next 30 business days or until Substantial Completion	Irrigate entire root depth a minimum of once per week, or as necessary to ensure vigorous growth
During the next 4 months or until Final Acceptance of the Project	Irrigate entire root depth once every two weeks, or as necessary to ensure vigorous growth

If cool weather induces plant dormancy, water only as necessary to maintain plant health. Irrigate in a manner that will not erode the topsoil but will sufficiently soak the entire depth of roots.

Inspection and Maintenance Guidelines:

(1) Temporary vegetation should be inspected weekly and after each rain event to locate and repair any erosion.

(2) Erosion from storms or other damage should be repaired as soon as practical by regrading the area and applying new seed.

(3) If the vegetated cover is less than 80%, the area should be reseeded.

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: Comal ISD Hoffman Lane Elementary School

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

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

2. X 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.

   X 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. X 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.

   X This site will not be used for low density single-family residential development.

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

__ **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** 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.

_X_ 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.**

_X_ 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.

__ 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.

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

_X_ 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.

__ 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.

8. _X_ **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. Each feature identified in the Geologic Assessment as "sensitive" has been addressed.

9. _X_ 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.

_X_ 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.

__ **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. _X_ **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. 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. X **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. X 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.

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

13. X **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. 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.

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

14. X 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. X 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:

Duane A. Moy
Print Name of Customer/Agent

Duane A Moy — 8/3/09
Signature of Customer/Agent — Date

ATTACHMENT B
BMPs FOR UPGRADIENT STORMWATER

Stormwater originating upgradient is minimal and continues to sheet flow to the southeastern portion of the site. There is a 100 foot ridge on the north corner of the site which forces water away from the site. The water that does flow across the site from the north to southeast eventually runs into a bar ditch that flows on the west side of Hoffman Lane Rd. No upgradient stormwater will flow across any disturbed areas.

ATTACHMENT C
BMPs FOR ON-SITE STORMWATER

This site has two main drainage areas, one of which is 11 acres that drains a majority of the parking, roofs, sidewalks, and roadways. Due to the fact that there is not enough vegetative surface area to treat the water a sedimentation/filtration basin was needed to meet the required amount of TSS removal. There are two areas next to roadways that will be treated with vegetated filter strips. The basin treats water from two 24" underground inlets.

Due to the additional impervious cover added to the school, the volume and sand filter area of the existing basin is no longer adequate and needs to be modified. A partial sedimentation/filtration system is being proposed and will require the west wall to be removed to allow for a larger filtration basin. The wall previously dividing the sedimentation and filtration basin with PVC risers will also be removed and replaced with rock gabions to allow for water levels between the two basins to equalize.

The original design of the weir did not take into account the entire 25 year storm event and thus, additional head over the weir needs to be accounted for. We are proposing to add a concrete wall to the existing berm and increase the wall height of the filtration basin by approximately one (1) foot to an elevation of 907.30'. This will allow the weir to pass the 25 year storm event with approximately 5 inches of freeboard.

ATTACHMENT D
BMPs FOR SURFACE STREAMS

There are no surface streams present on this site.

ATTACHMENT F
CONSTRUCTION PLANS

See full size plans following this section.

ATTACHMENT F

Texas Commission on Environmental Quality

TSS Removal Calculations 02-05-2009

Project Name: Hoffman Elementary School
Date Prepared: 7/27/2009

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

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

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

where.

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

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

County =	comal	
Total project area included in plan * =	21.37	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	7.461	acres
Total post-development impervious cover fraction * =	0.35	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	6697	lbs

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

Number of drainage basins / outfalls areas leaving the plan area = 3

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	10.83	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	6.679	acres
Post-development impervious fraction within drainage basin/outfall area =	0.62	
$L_{M\ THIS\ BASIN}$ =	5995	lbs

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type.
AQ	Aqualogic™ Cartridge Filter
BR	Bioretention
CS	Contech StormFilter
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
VF	Vegetative Filter Strip
WB	Wet Basin
WV	Wet Vault
ST	Stormceptor
VR	Vortechs

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

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

where:

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

A_C =	10.83	acres
A_I =	6.679	acres
A_P =	4.151	acres
L_R =	6853	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 6197 lbs.

F = 0.90

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

Rainfall Depth =	**1.70**	inches
Post Development Runoff Coefficient =	**0.43**	
On-site Water Quality Volume =	**28921**	cubic feet

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

Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**5784**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**34705**	cubic feet

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

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

Required Water Quality Volume for retention basin =	**NA**	cubic feet	
Irrigation Area Calculations:			
Soil infiltration/permeability rate =	**0.1**	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	**NA**	square feet	
	NA	acres	

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

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

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	**34705**	cubic feet	
Minimum filter basin area =	**1607**	square feet	
Maximum sedimentation basin area =	**14460**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**3615**	square feet	**For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**34705**	cubic feet	
Minimum filter basin area =	**2892**	square feet	
Maximum sedimentation basin area =	**11568**	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	**723**	square feet	**For maximum water depth of 8 feet**

10. Bioretention System Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin =	**NA**	cubic feet

11. Wet Basins Designed as Required in RG-348 Pages 3-66 to 3-71

Required capacity of Permanent Pool =	**NA**	cubic feet	**Permanent Pool Capacity is 1.20 times the WQV**
Required capacity at WQV Elevation =	**NA**	cubic feet	**Total Capacity should be the Permanent Pool Capacity plus a second WQV.**

12. Constructed Wetlands Designed as Required in RG-348 Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands =	**NA**	cubic feet

13. AquaLogic™ Cartridge System Designed as Required in RG-348 Pages 3-74 to 3-78

**** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.**

Required Sedimentation chamber capacity =	**NA**	cubic feet
Filter canisters (FCs) to treat WQV =	**NA**	cartridges
Filter basin area (RIA_F) =	**NA**	square feet

14. Stormwater Management StormFilter® by CONTECH

Required Water Quality Volume for Contech StormFilter System =	**NA**	cubic feet

Texas Commission on Environmental Quality

TSS Removal Calculations 02-05-2009

Project Name: Hoffman Elementary School
Date Prepared: 7/27/2009
VFS Drainage Area # 2

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
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1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

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

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

County =	comal	
Total project area included in plan * =	0.20	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	0.20	acres
Total post-development impervious cover fraction * =	1.00	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	180	lbs

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

Number of drainage basins / outfalls areas leaving the plan area = 3

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	10.83	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	6.60	acres
Post-development impervious fraction within drainage basin/outfall area =	0.61	
$L_{M\ THIS\ BASIN}$ =	5924	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type.
AQ	Aqualogic™ Cartridge Filter
BR	Bioretention
CS	Contech StormFilter
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
VF	Vegetative Filter Strip
WB	Wet Basin
WV	Wet Vault
ST	Stormceptor
VR	Vortechs

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

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

where:

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

A_C =	10.83	acres
A_I =	6.60	acres
A_P =	4.23	acres
L_R =	6774	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	5296	lbs.
F =	0.78	

Texas Commission on Environmental Quality

TSS Removal Calculations 02-05-2009

Project Name: Hoffman Elementary School
Date Prepared: 7/27/2009
VFS Drainage Area # 3

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
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1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

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

Site Data Determine Required Load Removal Based on the Entire Project

County =	comal	
Total project area included in plan * =	0.496	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	0.356	acres
Total post-development impervious cover fraction * =	0.72	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	320	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = 3

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

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	10.83	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	6.60	acres
Post-development impervious fraction within drainage basin/outfall area =	0.61	
$L_{M\ THIS\ BASIN}$ =	5924	lbs

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	sf	abbreviation
Removal efficiency =	89	percent

BMP Code:	BMP Type.
AQ	Aqualogic™ Cartridge Filter
BR	Bioretention
CS	Contech StormFilter
CW	Constructed Wetland
ED	Extended Detention
GS	Grassy Swale
RI	Retention / Irrigation
SF	Sand Filter
VF	Vegetative Filter Strip
WB	Wet Basin
WV	Wet Vault
ST	Stormceptor
VR	Vortechs

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

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

where:

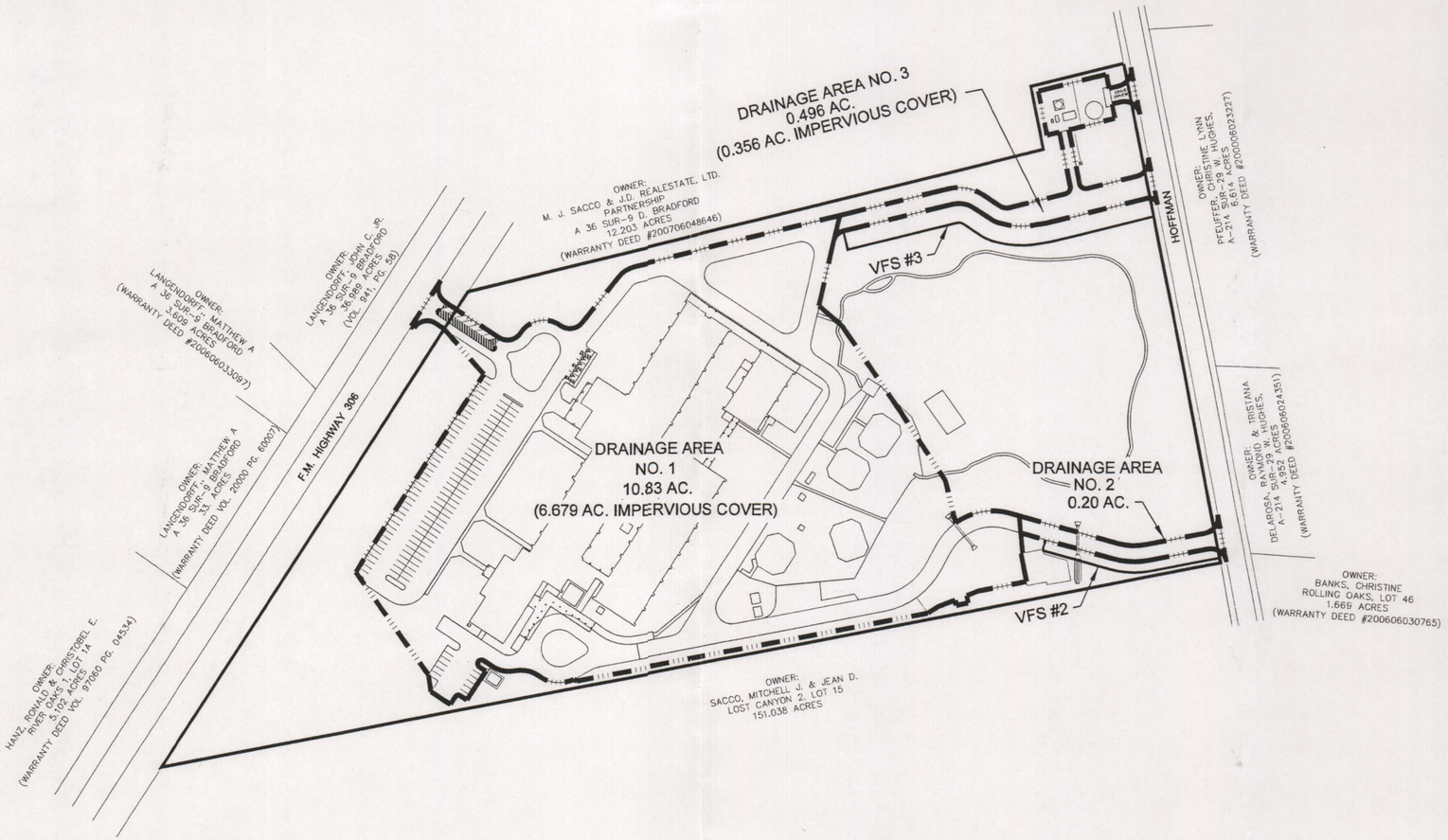
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	10.83	acres
A_I =	6.60	acres
A_P =	4.23	acres
L_R =	6774	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	5296	lbs.
F =	0.78	

PERMANENT BM P
DRAINAGE AREA MAP



SCALE = 1":200'
DATE: 08/03/09

MOY CIVIL ENGINEERS
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085

HOFFMAN LANE ELEMENTARY SCHOOL

V:\090030- Comal ISD Gym Addition\Hoffmann Elementary\dwg\COLOR-EXH-11X17 COMPETE-Hoffman elementary school-.dwg, Model, 8/3/2009 6:03:28 PM, bdeluna, RW-240WP.pc3, 11x17, 1:200

SCALE: 1"=10'

SOUTH ENTRANCE RD.
(BUS ROAD - ASPHALT)

EXIST. 24" RCP WITH HEADWALLS TO REMAIN

EXISTING RIP-RAP TO REMAIN

EXISTING SEDIMENTATION BASIN TO REMAIN
AS-BUILT VOLUME = 24,661 C.F.

APPROX. BOTTOM OF EXISTING SEDIMENT BASIN

EXISTING VARIABLE HEIGHT WING WALLS TO REMAIN

EXISTING 6' HIGH CHAIN-LINK SECURITY FENCE TO REMAIN

5' TYP.

TO HOFFMAN LANE

2-EXIST. SWING GATES TO REMAIN

EXIST. 30" RCP WITH HEADWALLS TO REMAIN

REMOVE EXISTING CONC. WALL, TRASH RACKS, PIPES AND CONC. APRON (SEE SECTION B-B)

EXIST. RAMP TO REMAIN

EXIST. RAMP TO REMAIN

EXTENSION 8" WALL ON TOP OF EXISTING CONCRETE RIPRAP TOP ELEV.=907.30

REMOVE AND REINSTALL EXIST. FENCE

RAISE 8" WALL TO 907.30

EXISTING CHAINLINK FENCE TO BE REMOVED

WALL TO REMAIN

RAISE EXIST. 8" WALL TO TOP ELEV.=907.30 (EXIST. TOP=906.30±) RE: SECTION F-F

CLEANOUT (TYP.)

EXIST. SAND FILTRATION BASIN (35'X50') REMOVE EXIST. PIPE, SAND, GRAVEL AND CLAY

EXIST. VEHICLE ACCESS RAMP TO REMAIN

PROPOSED ROCK GABIONS MIN. TOP ELEV. 906.00

4" DIA. PERFORATED PVC SCH. 40 PIPE

SURFACE ELEV.=905.95
SAND ELEV.=901.15

DESIGN WATER TOP OF SAND

4" DIA. PERFORATED PVC SCH. 40 PIPE

EXISTING WALL, FOOTING AND CHAINLINK FENCE TO BE REMOVED

SEDIMENT DEPTH MARKERS

PROP. 16' CHAINLINK SECURITY FENCE

EXIST. CONCRETE LINED CHANNEL WITH STILLING BASIN TO REMAIN

RAISE EXIST. 6' WALL TO TOP ELEV.=907.30 (EXIST. TOP = 906.30±)

EXISTING 4' CONCRETE RIP-RAP BERM

EXTENSION OF 6" WALL TOP ELEV.=907.30 (RE: SECTION A-A FOR WALL DETAILS)

FLUSH WITH CONC. RIPRAP AT ELEV.=907.30

EXIST. WEIR ELEV.=905.95

NEW 6" WALL TOP=907.30

RAISE 8" WALL TO 907.30

EXIST. CHAINLINK FENCE TO REMAIN

TOE OF SLOPE

24" R.C.P. OUTFALL DRAIN FROM MAIN PARKING TO REMAIN

EXIST. 17' FLOW SPLITTER WEIR TO REMAIN

PROPOSED 5" TO 8" (12" MIN. DEPTH) ROCK RUBBLE (12" MIN. DEPTH) UNDERLAIN WITH FILTER FABRIC

REMOVE AND REINSTALL EXIST. FENCE ON TOP OF RAISED WALL

RAISE 8" WALL TO 907.30

CLEAN OUT

4" DIA. NON-PERFORATED PVC SCH. 40 PIPE

6" DIA. NON-PERFORATED PVC SCH. 40 PIPE

6" GATE VALVE W/ VALVE BOX & WRENCH

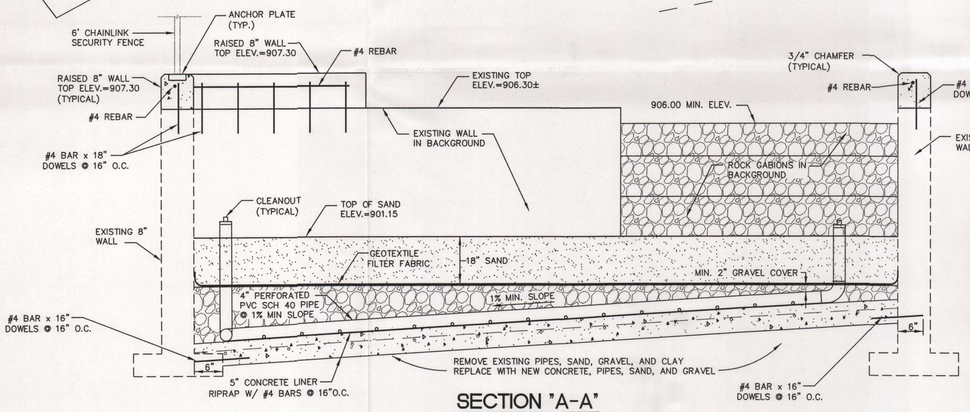
REMOVED EXIST. ROCK BERM

SEE DETAIL "1" SHEET C-2

10' UTILITY EASEMENT

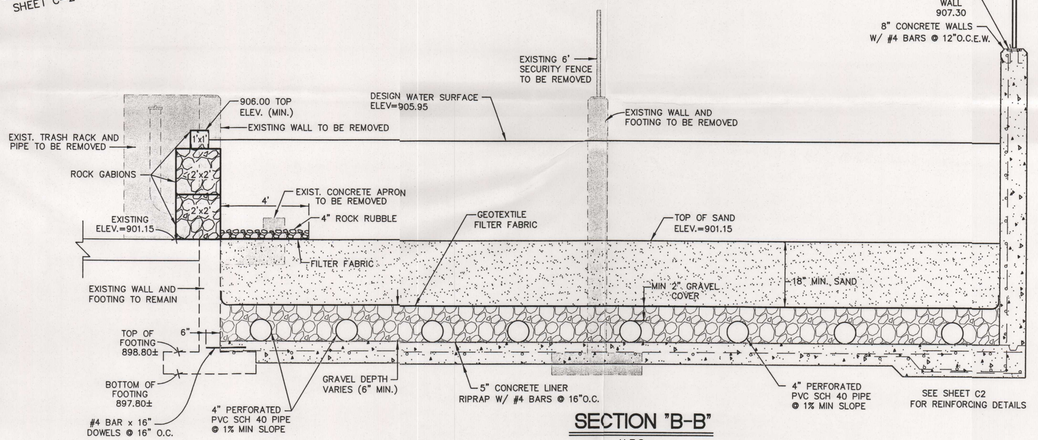
PROPERTY LINE

"A" "B" "C" "E" "F" "G"



SECTION "A-A"

N.T.S.



SECTION "B-B"

N.T.S.

NO.	DATE	DESCRIPTION	BY

REVISIONS

PROJ. # | DSN. BY: | DWN. BY: | CHKD. BY: | DATE:
D.A.M. | BDL | D.A.M. | 7/29/09

MOY CIVIL ENGINEERS
TEL: (210) 698-5051
FAX: (210) 698-5085
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249

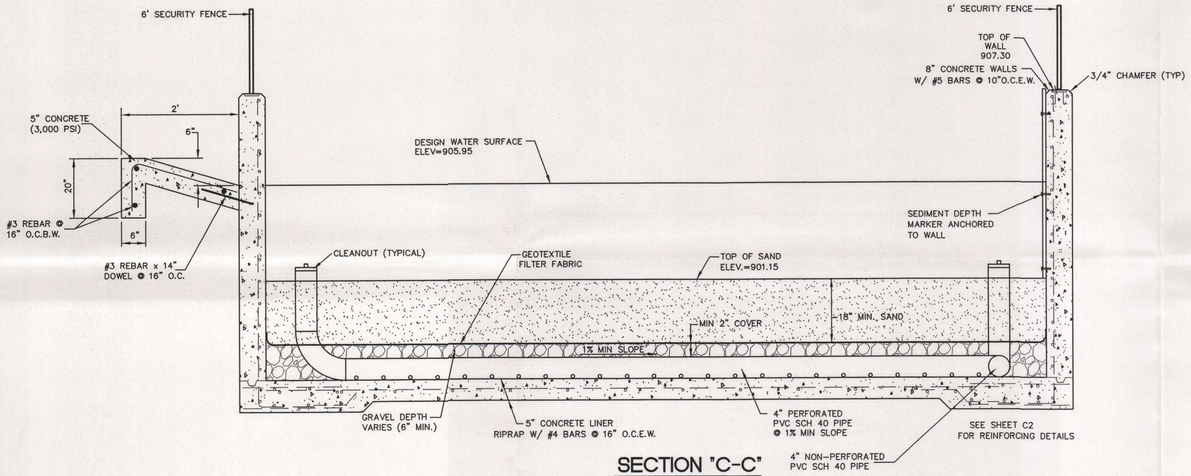
STATE OF TEXAS
DUANE A. MOY
69258
REGISTERED
PROFESSIONAL
ENGINEER
7/29/09

HOFFMAN LANE ELEMENTARY SCHOOL

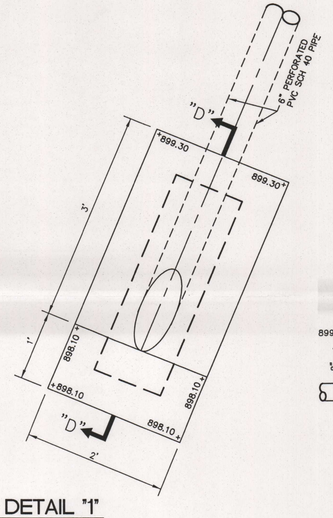
SAND FILTRATION POND

CONSTRUCTION PLANS

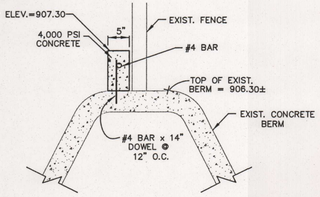
SHEET
C1



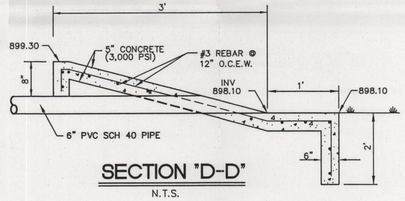
SECTION "C-C"
N.T.S.



DETAIL "1"
N.T.S.



SECTION "E-E"
N.T.S.



SECTION "D-D"
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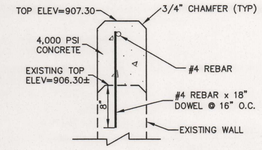

SECTION "F-F"
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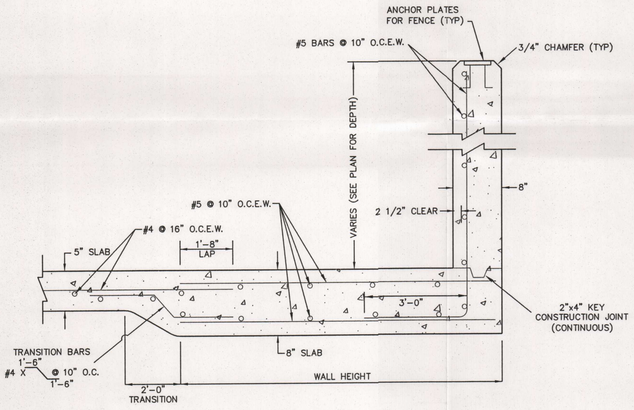
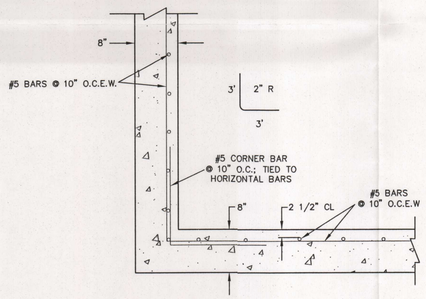
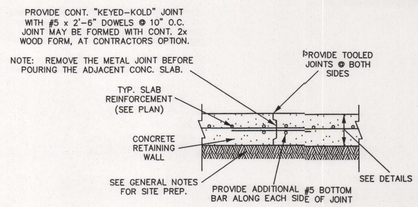


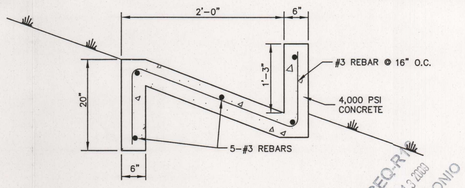
1 FOOTING SLAB TRANSITION (TYP)
N.T.S.



2 PLAN VIEW OF WALL AT CORNERS (TYP)
N.T.S.

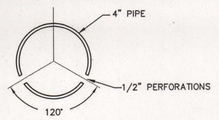


3 CONSTRUCTION JOINT DETAIL
N.T.S.



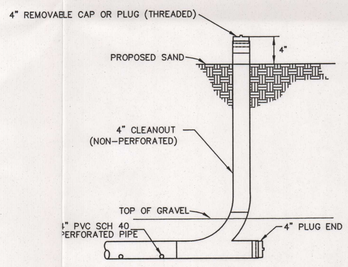
SECTION "G-G"
N.T.S.

TCEQ-RMA
AUG 13 2009
SAN ANTONIO

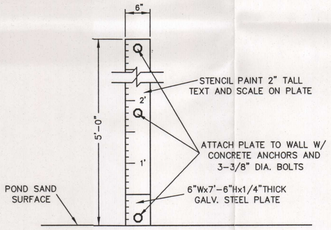


NOTE:
1. MINIMUM DIAMETER = 4"; SCHEDULE 40 PVC. (SEE PLAN VIEW)
2. THE MAXIMUM SPACING BETWEEN ROWS OF PERFORATIONS SHOULD NOT EXCEED 6".
3. SET PERFORATIONS DOWN.
4. PERFORATIONS SHOULD NOT BE LESS THAN A 1/2".
5. PIPES SHOULD LIE FLAT ON CONCRETE BOTTOM WHICH HAS BEEN GRADED TO DRAIN AS SHOWN ON PLAN VIEW.
6. ALL CLEANOUTS SHALL BE SOLID PIPE WITH A CLEANOUT AT THE END OF EACH LINE.

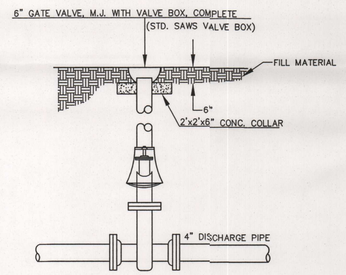
5 4" PERFORATED PIPE
N.T.S.



6 TYPICAL CLEANOUT DETAIL
N.T.S.



7 SEDIMENT DEPTH MARKER
N.T.S.



NOTE:
1. VALVE WILL BE SET PARTIALLY CLOSED SO AS TO PROVIDE A MINIMUM DRAWDOWN TIME OF 24 HOURS. SEE GATE VALVE OPERATIONS NOTES.
2. CONTRACTOR SHALL PROVIDE OWNER WITH VALVE OPERATING KEY/ROD PRIOR TO PROJECT COMPLETION

4 6" GATE VALVE DETAIL
N.T.S.

GATE VALVE OPERATION NOTES:

DISCHARGE FROM THE WATER QUALITY POND IS GENERALLY REGULATED BY THE SIZE OF THE DISCHARGE PIPE.

PRIOR TO INSTALLATION OF THE 6" GATE VALVE, THE CONTRACTOR SHALL DETERMINE THE NUMBER OF REVOLUTIONS OF THE VALVE KEY REQUIRED TO FULLY OPEN OR CLOSE THE VALVE.

THE 6" GATE VALVE SHALL INITIALLY BE INSTALLED IN THE FULLY OPEN POSITION TO ALLOW FOR MAXIMUM DISCHARGE.

AFTER COMPLETION OF POND CONSTRUCTION AND VALVE INSTALLATION, AND UPON THE FIRST RAIN EVENT WHICH FILLS THE POND TO SUCH POINT THAT RUNOFF WATER NO LONGER FLOWS OVER THE FLOW SPLITTER DEVICE (POND AT FULL DESIGN CAPACITY), THE CONTRACTOR SHALL PERFORM THE FOLLOWING PROCEDURE TO VERIFY CORRECT VALVE SETTING:

1. VERIFY THAT 6" GATE VALVE IS IN FULLY OPEN POSITION
2. MAKE NOTE OF WATER SURFACE ELEVATION AND TIME.
3. AT SUCH POINT THAT WATER SURFACE ELEVATION HAS DROPPED BY 2.0 FEET, THE CONTRACTOR SHALL AGAIN MAKE NOTE OF WATER ELEVATION AND TIME.
4. IF THE TIME REQUIRED FOR THE WATER SURFACE ELEVATION TO DROP 2.0 FEET IS LESS THAN 10 HOURS OR GREATER THAN 15 HOURS, THEN THE VALVE SHALL BE OPENED OR CLOSED, ACCORDINGLY, 1/4 OF THE TOTAL NUMBER OF REVOLUTIONS REQUIRED FOR FULL OPERATION OF THE VALVE.
5. AT SUCH POINT THAT WATER SURFACE ELEVATION HAS DROPPED BY 2.0 MORE FEET, THE CONTRACTOR SHALL AGAIN MAKE NOTE OF WATER ELEVATION AND TIME.
6. IF THE TIME REQUIRED FOR THE WATER SURFACE ELEVATION TO DROP 2.0 FEET IS LESS THAN 10 HOURS OR GREATER THAN 15 HOURS, THEN THE VALVE SHALL BE OPENED OR CLOSED, ACCORDINGLY, 1/8 OF THE TOTAL NUMBER OF REVOLUTIONS REQUIRED FOR FULL OPERATION OF THE VALVE.
7. UPON THE NEXT RAIN EVENT WHICH FILLS THE POND TO SUCH POINT THAT RUNOFF WATER NO LONGER FLOWS OVER THE FLOW SPLITTER DEVICE (POND AT FULL DESIGN CAPACITY), THE CONTRACTOR SHALL REPEAT THE VERIFICATION PROCEDURE BEGINNING AT STEP 3 ABOVE AND, IF REQUIRED, ADJUST VALVE BY ONE HALF OF THE PREVIOUS AMOUNT OF ADJUSTMENT UNTIL SUCH POINT THAT THE FULL POND COMPLETELY DISCHARGES WITHIN A TIME FRAME OF NOT LESS THAN 24 HOURS NOR MORE THAN 48 HOURS.

REVISIONS						
NO.	DATE	DESCRIPTION	BY			
				PROJ. #	DSN. BY:	DWN. BY:
					D.A.M.	BDL

CHKD. BY: D.A.M. DATE: 07/29/09

MOY CIVIL ENGINEERS
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085

STATE OF TEXAS
DIANE A. MOY
68258
REGISTERED PROFESSIONAL ENGINEER
07/29/09

HOFFMAN LANE ELEMENTARY SCHOOL
POND DETAILS
CONSTRUCTION PLANS

SHEET
C2

POND VOLUME CALCULATIONS

CONTOUR INTERVAL	AREA IN S.F.	VOLUME AT CONTOUR INTERVALS (C.F.)
901.15	3,034	–
902.00	7,198	4,349
903.00	7,861	7,529
904.00	8,558	8,210
905.00	9,303	8,930
905.95	10,148	9,239
	TOTAL VOLUME	38,257 C.F.

BASIN DESIGN DATA

DRAINAGE AREA	RAINFALL DEPTH	RUNOFF COEFF.	REQUIRED CAPTURE VOLUME	REQUIRED SAND AREA	SAND BED WATER DEPTH	DESIGN CAPTURE VOLUME	DESIGN SAND AREA
10.83 AC.	1.70 IN.	0.43	34,705 C.F.	2,892 S.F.	4.80 FT.	38,257 C.F.	3,034

FENCE NOTE:
6' HIGH SECURITY FENCE REQUIRED AROUND POND WITH ACCESS GATES AT THE MAINTENANCE RAMP LOCATIONS SHOWN. OWNER TO SPECIFY THE TYPE OF FENCE.

FLOW SPLITTER
17-ft WEIR CALCULATIONS

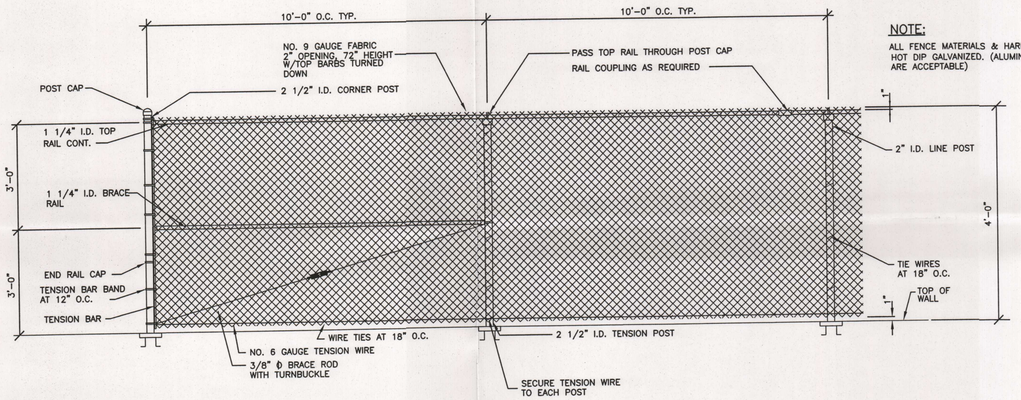
17' LONG WEIR w/ 47 cfs 25-YR FLOW

$Q = C \times L \times h^{3/2}$

where

C = 3.087
Q_{25} = 47 cfs
L = 17' FT

TOTAL HEAD DEPTH FOR WEIR = 0.93 Feet



NOTE:
ALL FENCE MATERIALS & HARDWARE TO BE HOT DIP GALVANIZED. (ALUMINUM WIRE TIES ARE ACCEPTABLE)

CONSTRUCTION NOTES:

1. ALL CONCRETE SHALL BE A MINIMUM 4,000 PSI IN 28 DAYS.
2. ALL REBAR SHALL BE ASTM A615, GRADE 60.
3. ALL REBAR SPLICES AND LAPS SHALL BE A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE INDICATED ON DETAILS.
4. ALL REBAR BENDS SHALL HAVE A MINIMUM INSIDE RADIUS OF 3X NOMINAL BAR DIAMETER.
5. ALL REBAR SHALL HAVE A MINIMUM OF 2" CONCRETE COVER UNLESS OTHERWISE SPECIFIED.
6. FILTRATION SAND SHALL BE CLEAN, WASHED CONCRETE SAND. (ASTM C-33 FINE AGGREGATE.)
7. GRAVEL SHALL BE CLEAN, WASHED 1" DIAMETER GRAVEL.
8. CLEAN-OUTS SHALL BE NON-PERFORATED AND SHALL BE PROVIDED AT ALL UPGRADIENT ENDS OF PIPES.
9. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

FILTER FABRIC SPECIFICATIONS

THE SEPARATION LAYER BETWEEN THE SAND AND GRAVEL LAYERS SHALL BE A DRAINAGE MATTING CONSISTING OF NON-WOVEN FILTER FABRIC MEETING THE FOLLOWING SPECIFICATIONS:

PROPERTY	TEST METHOD	SPECIFICATION
WEIGHT (OZ/SY)	ASTM D 3776	40
GRAB STRENGTH (LBS.)	ASTM D 4632	90
ELONGATIONS (%)	ASTM D 4632	55
PUNCTURE (LBS)	ASTM D 3787	60
AOS (SIEVE #)	ASTM D 4751	70-80
FLOW RATE (GPM/SF)	ASTM D 4491	120

FABRIC OVERLAP SHALL BE A MINIMUM OF 24".
ALL OVERLAPS SHALL BE WIRE TIED AT A MAXIMUM OF 36" INTERVALS

GENERAL NOTES:

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 CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING STAGES:

   a.) REINFORCING STEEL FOR BASIN SIDES AND FLOOR LINER HAS BEEN SET, CONCRETE HAS NOT BEEN PLACED.

   b.) CONCRETE SIDES AND FLOOR IN PLACE AND PERFORATED DRAIN SYSTEM IS IN PLACE WITHOUT GRAVEL.

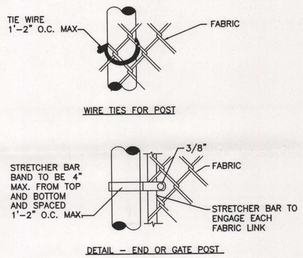
   c.) GRAVEL AROUND UNDER DRAIN SYSTEM IS IN PLACE AND FILTER FABRIC IS INSTALLED AND ATTACHED TO WALLS WITHOUT SAND ON TOP.

   d.) SAND FILTER MEDIA HAS BEEN PLACED & BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3.) WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH ABOVE STAGES. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 48 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.

4.) BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASIN AND RE-ESTABLISH IT TO THE PROPER OPERATING CONDITION.

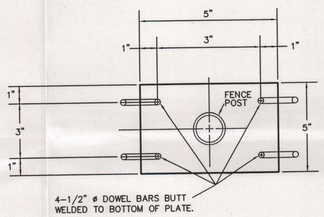
5.) THE MINIMUM DRAIN TIME FOR A FULL BASIN IS 24 HOURS. THE CONTRACTOR SHALL RESTRICT THE BASIN FLOW BY ADJUSTING THE GATE VALVE ON THE DISCHARGE PIPE, SO AS TO PROVIDE A MINIMUM 24 HOUR DRAW DOWN TIME. SEE GATE VALVE OPERATION NOTES.

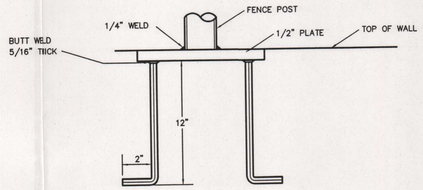


WIRE TIES FOR POST

DETAIL - END OR GATE POST

CHAIN LINK FENCE DETAIL (2" OPENING)
N.T.S.





PIPE ANCHORAGE DETAIL
N.T.S.

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Notes

1. Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor and the name and telephone number of the contact person.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
4. No temporary aboveground hydrocarbon and hazardous substance storage tank system is installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
6. Prior to commencement of construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. Controls specified in the temporary storm water section of the approved Edwards Aquifer Protection Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
6. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
7. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. Stabilization measures shall be initiated as soon as practicable in portions of the site where

TCEQ-0592 (Rev. 3/15/07) Page 1 of 2

construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

11. The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
    A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office 2800 S. IH 35, Suite 100 Austin, Texas 78704-5712 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

TCEQ-0592 (Rev. 3/15/07) Page 2 of 2

TCEQ-R13
AUG 13 2009
SAN ANTONIO

REVISIONS

NO.	DATE	DESCRIPTION	BY

PROJ. # | DSN. BY: | D.A.M. | DWN. BY: | BDL | CHKD. BY: | D.A.M. | DATE: 07/29/09

MOY CIVIL ENGINEERS
12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085

STATE OF TEXAS
DUANE A. MOY
69258
REGISTERED PROFESSIONAL ENGINEER
8/3/09

HOFFMAN ELEMENTARY SCHOOL
POND DETAILS
CONSTRUCTION PLANS

SHEET
C3

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"ATTACHMENT G"

SAND FILTRATION SYSTEM

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN/CHECKLIST

Maintenance Task Item	Description of Maintenance/Repairs to be Performed	Typical Frequency	Date Inspected	Corrective Action Taken
Basin and Inlet	Visually inspect and note items which need repair or maintenance performed (pipes, concrete drainage structures, retaining walls, cracks, voids or undermining, etc.). Check for erosion areas inside and outside the basins and if required, repair and revegetate immediately. Insure the inlet and flow splitter are not clogged.	Each site visit.		
Trash Removal	Remove trash from the basins and inlet structure. Properly dispose of all removed material.	Each site visit.		
Sediment Removal	Remove sediment from the inlet and sedimentation basin. Properly dispose of all removed material.	When sediment is greater than 6 inches in depth or when proper functioning of basin is impaired.		
Media (Sand) Replacement	Remove and replace upper layer of contaminated and discolored sand (usually limited to the top 2 to 3 inches).	When drawdown time exceeds 48 hours.		
Flow Splitter & Outfall	Visually inspect outfall and flow splitter to verify that discharge is leaving the pond unrestricted.	Each site visit.		
Underdrain Piping	Periodically clean underdrain piping through clean-outs to insure unimpeded discharge of filtered stormwater.	Five year intervals or when design drawdown time is not maintained.		
Mowing	Limit surrounding vegetation and vegetation in pond to 18 inches in height. Mow as required to prevent the establishment of woody vegetation.	Semi-annually or more often if necessary.		
Security Fencing	Observe that the BMP security fence is undamaged and closed with locked gates at all times.	Each site visit.		
Documentation	Prepare site visit report noting all items of maintenance and/or repair performed during each site visit.	Each site visit.		

Notes:

1. All maintenance activities, including entering confined space, will be performed in accordance with applicable OSHA regulations.
2. Site visits shall be performed quarterly or after each significant rainfall event, whichever occurs more often.
3. Properly dispose of trash and sediment in accordance with applicable regulations.
4. At least one inspection per year shall be done during or immediately following wet weather.
5. Documentation of maintenance inspections shalll be maintained for a minimum of five (5) years to be reviewed by the regulatory agency during normal business hours.
6. Sand media used for replacement of removed sand shall meet the original specifications.
7. The maximum drawdown time should not exceed 48 hours.

Signed: _____ 7/29/09

Owner / Date

INSPECTION PERFORMED BY:

_____

Signature

_____

Print Name

ATTACHMENT I
MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

No surface streams exist within the project site. The storm water flows discharging from the site will continue to flow as they currently do. Storm water from the site will enter off-site streams in the same manner that it did prior to the improvements to the site.

Temporary and permanent BMPs, as shown on the Site Plan, will be used to minimize sediments leaving the site and flowing into surface stream during and after construction.

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

I Thomas Bloxham,
Print Name

Assistant Superintendent of Support Services,
Title - Owner/President/Other

of Comal Independent School District,
Corporation/Partnership/Entity Name

have authorized Duane A. Moy
Print Name of Agent/Engineer

of Moy Civil Engineers
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 applicants 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.

Applicant's Signature

7/29/09
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Thomas Bloxham 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 29th day of July, 2009.

NANCY J. DENTON
NOTARY PUBLIC STATE OF TEXAS
COMMISSION EXPIRES:
AUGUST 11, 2010

Nancy J. Denton
NOTARY PUBLIC

Nancy J. Denton
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 8/11/2010

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

NAME OF PROPOSED REGULATED ENTITY: Hoffman Lane Elementary School
REGULATED ENTITY LOCATION: 4600 FM 306, New Braunfels, TX 78132
NAME OF CUSTOMER: Comal Independent School District
CONTACT PERSON: Thomas Bloxham PHONE: 830-221-2184
(Please Print)

Customer Reference Number (if issued): CN 600249825 (nine digits)

Regulated Entity Reference Number (if issued): RN 101281202 (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	21.370	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

7/29/09
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

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)*

☒ 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 — Edwards Aquifer WPAP Modification Application

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 600249825		RN 101281202

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy): 07/29/2009

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:*

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)*

☐ 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)*							
	City		State		ZIP		ZIP + 4	
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:	Duane A. Moy	41. Title:	President

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 698-5051		(210) 698-5085	dmoy@moy-ce.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:	Moy Civil Engineers	Job Title:	President
Name *(In Print)*:	Duane A. Moy, P.E.	Phone:	(210) 698-5051
Signature:	Duane A Moy	Date:	8/3/09

EXCEPTION APPLICATION PLAN

RECEIVED
OCT 16 2001
COUNTY ENGINEER

HOFFMANN LANE ELEMENTARY SCHOOL

PLAYING FIELD

COPY #2

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

RECEIVED-TNRCC
2013 OCT 15 AM 9:10
SAN ANTONIO REGION

REGULATED ENTITY NAME: Comal ISD – Hoffmann Lane Elementary School

COUNTY: Comal STREAM BASIN: Guadalupe

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: __ WPAP __ AST X EXCEPTION
__ SCS __ UST __ MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant): Comal Independent School District

Contact Person: Guillermo Nieri
Entity: Comal Independent School District
Mailing Address: 278 Loop 337
City, State: New Braunfels, Texas Zip: 78130
Telephone: 830-221-2119 FAX: 830-221-2009

Agent/Representative (If any):

Contact Person:
Entity:
Mailing Address:
City, State: _____ Zip:
Telephone: _____ FAX:

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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.

5.0 miles North of City of New Braunfels on N.E. side of FM 306 before Hoffmann Lane

4. X **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.

5. X **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:

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

6. X 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. X **ATTACHMENT C - PROJECT DESCRIPTION.** Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
__ Existing commercial site
__ Existing industrial site
__ Existing residential site
__ Existing paved and/or unpaved roads
X Undeveloped (Cleared)
__ Undeveloped (Undisturbed/Uncleared)
__ Other:

PROHIBITED ACTIVITIES

9. X 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. X 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 Contributing Zone Plan.

X 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)

X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TCEQ to the local municipality or county, groundwater conservation districts, and the TCEQ's Central Office.

14. X 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.

__ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with the executive director.

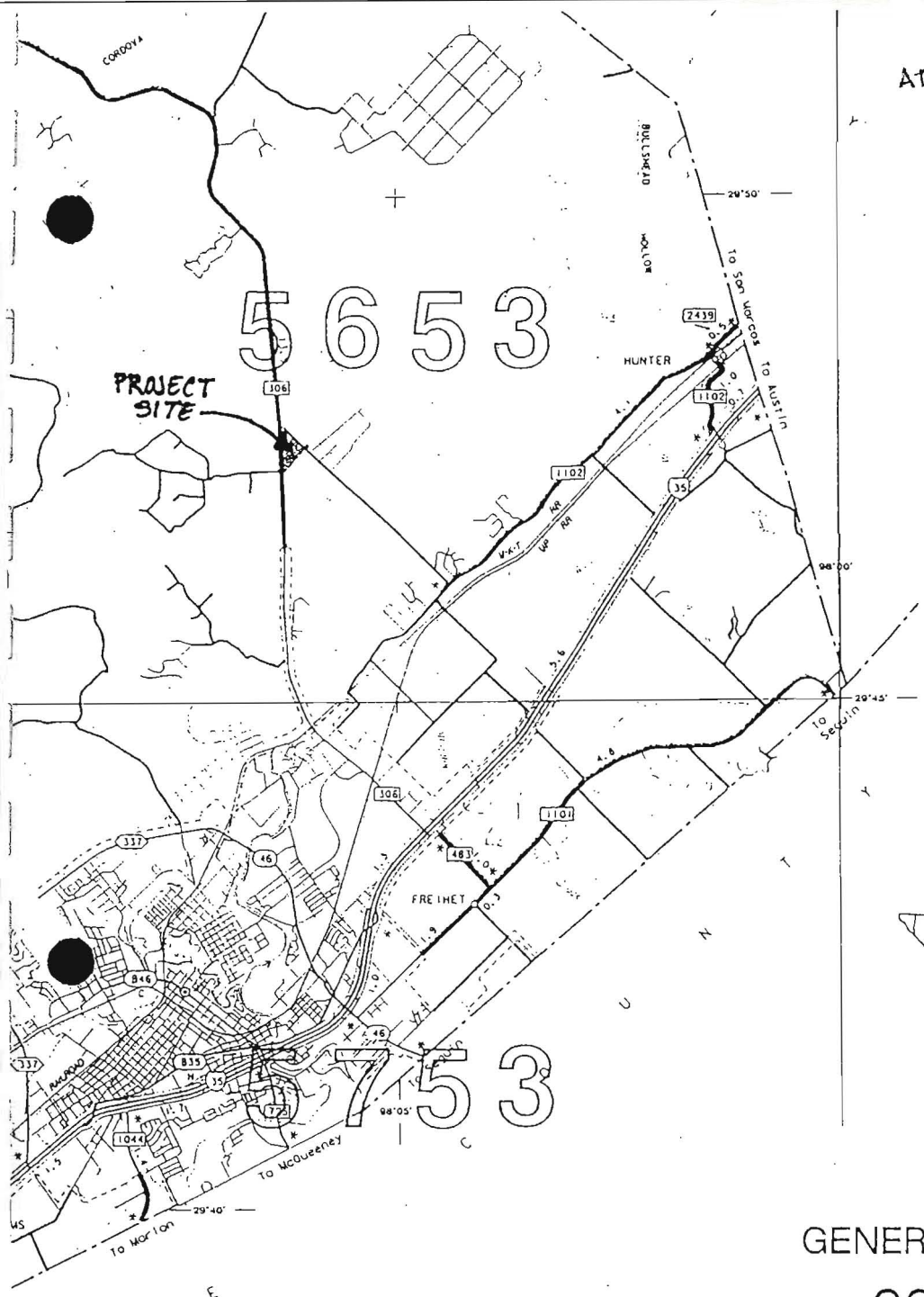
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **GENERAL INFORMATION FORM** is hereby submitted for TCEQ review. The application was prepared by:

Guillermo Nieri
Print Name of Customer/Agent

Guillermo Nieri
Signature of Customer/Agent Date 9/24/03

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.

ATTACHMENT "A"







KEY TO COUNTIES

GENERAL HIGHWAY MAP

COMAL COUNTY

TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

0 1 2 3 4

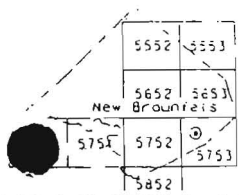
MAP

1988

1990 CENSUS FIGURES

HIGHWAYS REVISED TO JANUARY 1, 1995

LAMBERT CONFORMAL CONIC PROJECTION - 1927 NORTH AMERICAN DATUM
STANDARD PARALLELS 27°25' AND 34°55'



KEY TO SUPPLEMENTARY SHEETS

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation.

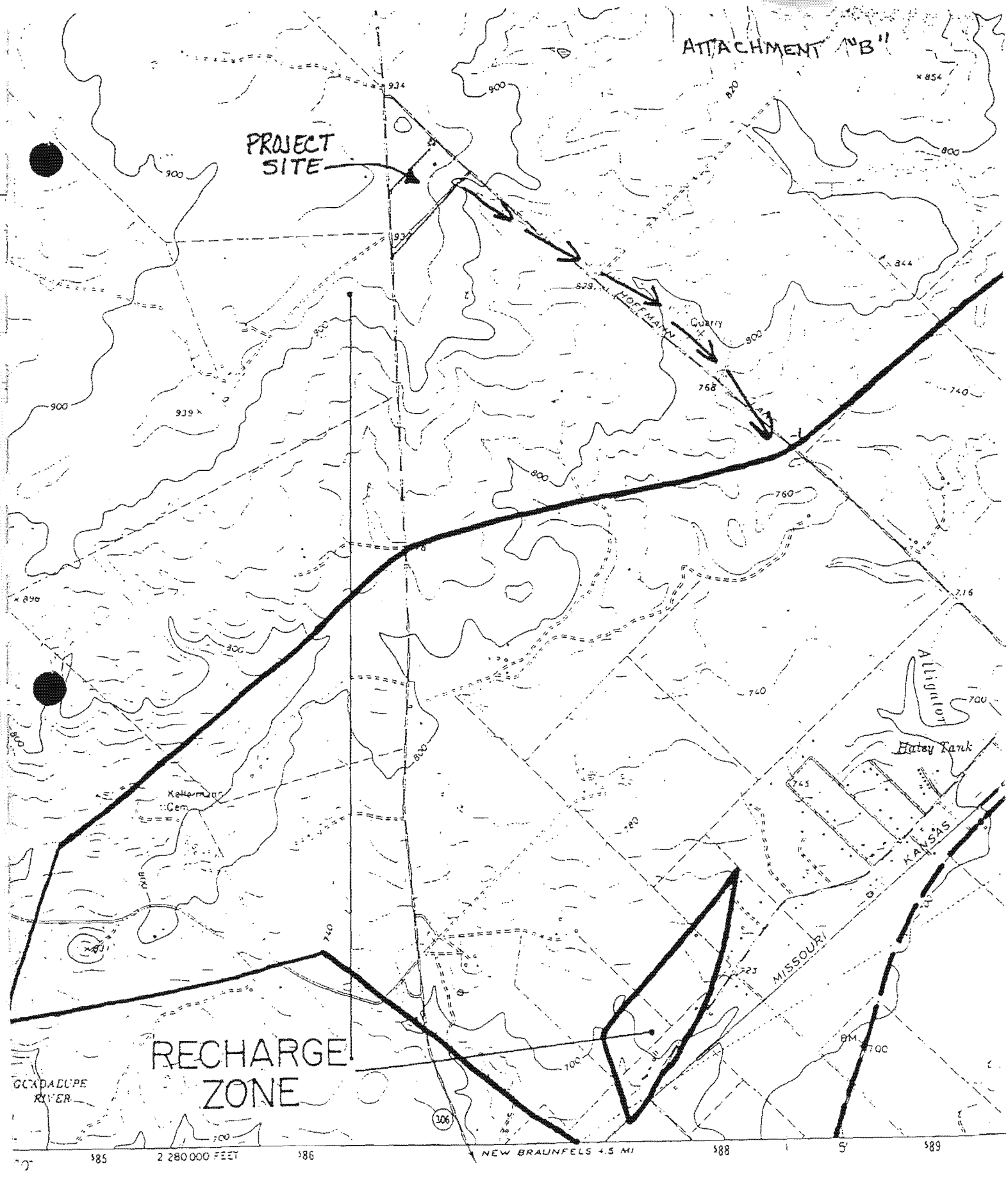
Accuracy is limited to the validity of available data as of dates shown.

TRAVEL INFORMATION

Dial 1-800-452-9292 for travel assistance from a professional Texas travel counselor, including routing in Texas, emergency road condition information, and other travel services, or to register a comment or complaint about department operations.

Copies of this map are available for public use at nominal cost from the Texas Department of Transportation, 4000 Jackson Avenue Austin, Texas 78731 or mail requests may be sent to the Budget and Finance Division, P O Box 5020, Austin, Texas 78763-5020

Comal Sheet 1 of 1 Base Sheet and 5 Supplementary Sheets



ed by the Army Map Service

.0. nd published by the Geological Survey

ontrol by USGS and NOS/NOAA

eography by photogrammetric methods from aerial notographs taken 1958. Field checked by USGS 1964

olyconic projection. 1927 North American datum

HUNTER, TEX.

N2945 – W9800/7 5

1964

PHOTOREVISED 1973

AMS 6343 I SE-SERIES V882

PROJECT DESCRIPTION

Attachment "C"

The Comal Independent School District is planning the development of an outdoor play area on the Hoffmann Lane Elementary School campus for its students. The play area will consist of an established grass playing field of approximately 46,000 square feet, upstream from the existing sediment and filter basins. The play area will be used for general physical education activities such as soccer and softball. The project does not involve the modification of existing grades. No impervious cover/s are involved in this project. See enclosed site plan for project scope and site location. The project site is located on the Edwards Aquifer Recharge Zone, approximately 5 miles north of New Braunfels, Texas on FM 306.

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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

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

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

PROJECT INFORMATION

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

2. Soil cover on the project site is **0.83** feet thick. In general, the soil present appears to have the ability to:

   __ transmit fluid flow to the subsurface.
   X impede fluid flow to the subsurface.

3. X **SOILS ATTACHMENT**. A narrative description of soil units and a soil profile, including thickness and hydrologic characteristics are attached at the end of this form.

4. X 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.

5. X 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.

6. X 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" = 50'
Site Geologic Map Scale	1" = 200'

7. Method of collecting positional data:
   __ Global Positioning System (GPS) technology.
   X Other method(s). **USGS Topographic Maps**

8. X The project site is shown and labeled on the Site Geologic Map.

9. X Surface geologic units are shown and labeled on the Site Geologic Map.

10. X 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.

11. ___ The Recharge Zone boundary is shown and labeled, if appropriate.

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

X There are 2 (#) 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.
X 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.

ADMINISTRATIVE INFORMATION

13. X One (1) original and three (3) copies of the completed assessment has been provided.

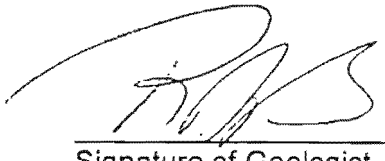
Date(s) Geologic Assessment was performed: 9-25-99
Date(s)

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 213.

ROBERT A. BURNS
Print Name of Geologist

(210) 698-5115
Telephone

Fax



Signature of Geologist

9-26-99
Date

Representing: ~~R. A. BURNS ENVIRONMENTAL CONSULTANT~~ Blidar B
(Name of Company)

Comal ISD Hoffman Lane Elementary School

Geologic Assessment Table Feature List

Feature S1: A new water well (MM) drilled, not completed, to be closed.

Feature S2: A new water well (MM) completed and equipped in compliance with 16 TAC Chapter 76.

Feature S3: Vuggy rock zone (VRZ) exposed along the upper dry creek bed, tributary to Alligator Creek. Infiltration restricted by underlying impervious Grainstone. Vugs do not appear to be interconnected.

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: COMAL ISD FM 306 SITE

FEATURE ID			FEATURE CHARACTERISTICS																						PHYSICAL SETTING														
1A	1B	1C	2	3				4			5	6		7			8			9				10			11	12			13				14					15	16			17
LOCATION	TYPE (1)	POINTS	GEOLOGIC FORMATION	VERTICAL FEATURE (FEET)				HORIZONTAL FEATURE (FEET)			LENGTH & WIDTH (FEET)	TREND (C, CD, FR, FZ, SC, SH)		DENSITY (FR, VF)			APERTURE (FR, VR)			INFILLING (CD, FR, FZ, SC, SH, VR)				RELATIVE INFILTRATION RATE			SUB-TOTAL	SENSITIVITY			DRAINAGE AREA (ACRES)				TOPOGRAPHY (2)					SUB-TOTAL	POTENTIAL RECHARGE			COMMENTS
				C, CD, SC, SH				C, SC			FZ, FR, VR, Z																																
				X	Y	Z		X	Y	Z		DIRECTION	DOMINANT	0	5	10	0	5	10	0	8	10	15	0	10	30		HOT <25	POSSIBLE 25 - 80	SENSITIVE >80	<1	<10	<30	>30	WALL	HILLTOP	HILLSIDE	FLOODPLAIN	STREAM BED		HONE/LOW <15	MODERATE 15 -20	HIGH >20	YES	
S1	MM	35	Kep																					0			35		35		0					5				5	5			X
S2	MM	35	Kep																					0			35		35		0					5				5	5			X
S3	VRZ		Kep								700/20			0					10				15	0			25		25		0						10			10	10			X

(1) C = 35, CD = 10, FR = 0, FZ = 15, MM = 35,
SC = 10, SH = 20, VR = 0, ZONE = 35

(2) WALL = Vertical/near vertical wall above 100-yr floodplain
FLOODPLAIN = 100-yr floodplain
STREAM BED = Ordinary High Water Mark

I have read, understood, and followed the Texas Natural Resource Conservation Commission's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

Geologist signature — Date: 9-26-99

Sheet 1 of 1

TNRCC-0585-Table (Rev. 6/1/99)

Comal ISD
FM 306 Project Site
Site Soils Attachment

Rumple-Comfort Association (80% of Site):

The Comal ISD 306 site is approximately 21.370 acres. The Rumple-Comfort (RUD) associated soils (Soil Survey of Comal & Hays County, June 1984) represent approximately 80% of the study area (see Soils Map). This soil association consists of shallow to moderately deep soils on the upland portion of the study area. The surface layer is dark reddish brown, very cherty clay loam soils up to 10 inches thick (see Table 1). Cobbles and chert nodules on the surface are common.

The soils are well drained and support a thick growth of buffalo grass, Texas persimmon, Ashe juniper, mesquite, Spanish oak, Prickly pear and other assorted cactus.

Surface runoff is slow to medium. Permeability is slow, and available water capacity is low. These factors will impede fluid flow to the subsurface. The rocky surface layer, shallowness to bedrock, clayey and corrosivity to uncoated steel are severe limitations for use of soils for urban and recreation uses.

Comfort-Rock Outcrop Complex (20% of Site):

The Comfort-Rock outcrop (CrD) complex (Soil Survey of Comal & Hays County, June 1984) represents 20% of the study area (see Soils Map). Located within the Alligator Creek drainage, eastern portion of the study area. The Comfort soils consists of shallow, clayey soils and Rock outcrop on side slopes, hilltops and uplands on the Edwards Plateau. Typically the surface layer of the Comfort soils is dark brown extremely stony clay about 6 inches thick. The subsoil extends to a depth of 13 inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone (see Table 1).

The Comfort soil is well drained. Surface runoff is slow to medium. Permeability is slow, and the available water capacity is very low. These factors will impede fluid flow to the subsurface. Water erosion is a slight hazard. The stony surface layer, shallowness to bedrock, and corrosivity to uncoated steel are sever limitations for use of soils for urban and recreation uses. Texas persimmon and blueberry juniper strive in these areas.

TABLE NO.1

Soil Profile, Thickness, Hydraulic Characteristics

(Table derived from the "Soil Survey of Comal & Hays Counties, Texas")

SOIL	DEPTH	DESCRIPTION	HYDRAULIC CHARACTERISTICS
RUD	0-10	Very cherty clay loam,	C/D
	10-28	Very stony clay,	
	28-36	unweathered bedrock.	
CrD	0-6	Extremely stony clay,	D
	6-13	Very stony clay,	
	13-20	unweathered bedrock	

Hydraulic Characteristics

A: high infiltration rate, low run-off potential

B: medium high infiltration rate, medium to low run-off potential

C: medium low infiltration rate, medium to high run-off potential

D: low infiltration rate, high run-off potential

Stratigraphic Column

Summary of the lithologic and hydrologic properties of the hydrogeologic subdivisions of the Edwards aquifer outcrop, Comal County, Texas

[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	Navarro and Taylor Groups, undivided		CU	600	Clay, chalky limestone	Gray-brown clay; marly limestone	None	Low porosity/low permeability
		Austin Group		CU; rarely AQ	130 - 150	White to gray limestone	White-chalky limestone; *Gryphaea aucella*	None	Low porosity; rare water production from fractures/low permeability
		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	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	Edwards aquifer	I	Georgetown Formation	CU	Less than 10	Gray to light tan marly limestone	Marker fossil: *Waconella wacoensis*	None	Low porosity/low permeability
		II	Person Formation	Cyclic and marine members, undivided	AQ	80 - 100	Mudstone to packstone; *miliolid* grainstone; chert	Light tan, massive; some *Toucasia*	Many subsurface; may be associated with earlier karst development	Laterally extensive; both fabric and not fabric/ water-yielding; one of most permeable
		III		Leached and collapsed members, undivided	AQ	80 - 100	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; *Montastrea sp.*	Extensive lateral development, large rooms	Majority not fabric/one of most permeable
		IV		Regional dense member	CU	20 - 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	None, 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; *Toucasia*	Few	Not fabric/recrystallization reduces permeability
		VI		Kirschberg evaporite member	AQ	50 - 60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with noospar 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; locally permeable
		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/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

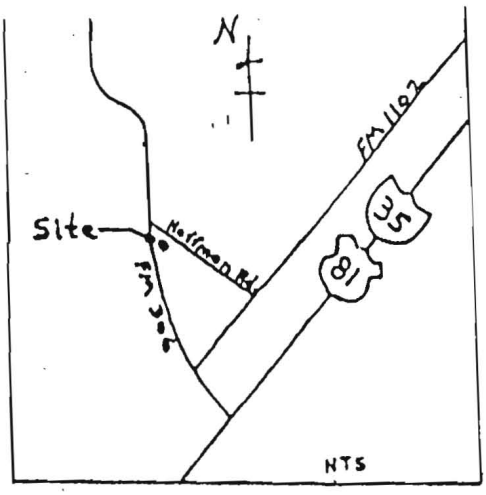
Comal ISD-Hoffman Lane Elementary School

Narrative Description of Site Specific Geology

The Comal ISD school site is covered with a thin rocky soil described later in this report. The site is underlain with crystalline limestone, mudstone, grainstone, chert, and collapsed breccia. These rocks are Lower Cretaceous in age and make up the Person formation of the Edwards Group of rocks. The Person formation is further divided into three members, the Cyclic and marine member, Leached and collapsed member, and the Regional dense member(see stratigraphic column attached).

The Leached and Collapsed(L and C) member, undivided is the only unit exposed in the study area. The L and C member is approximately 80 feet thick with approximately 20 feet of this unit exposed in the site area. This portion of the L and C member appears in the easters portion of the study area and outcrops along the unnamed tributary of Alligator Creek. The L and C member is confined below by the impervious Regional Dense member. No prominent fracture patterns or faulted rock was observed on the site. No potentially significant manmade or significant geologic features were identified by this survey. The following potential recharge features were mapped and described on the attached Geologic Assessment Table.

Comal ISD
FM 306 Project
Site Plan



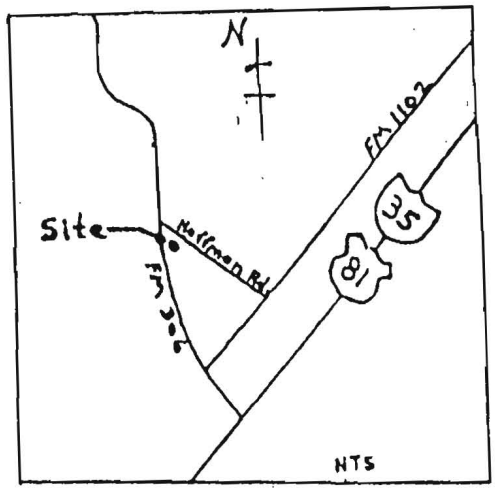
Hoffman Lane

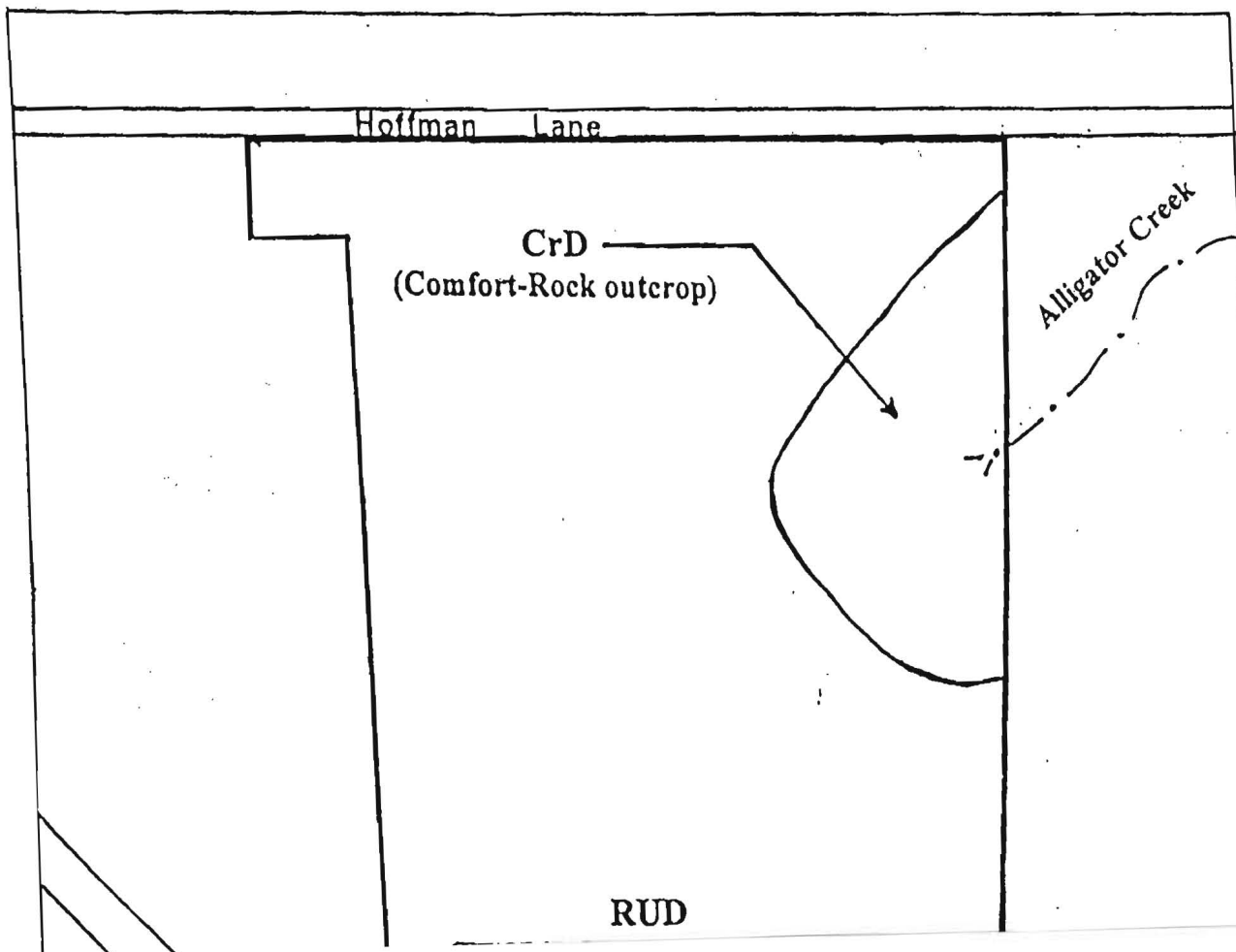
Alligator Creek

LOT 15

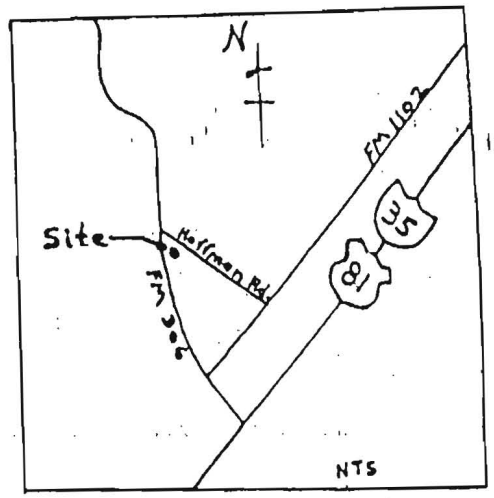
21.370 ACRES

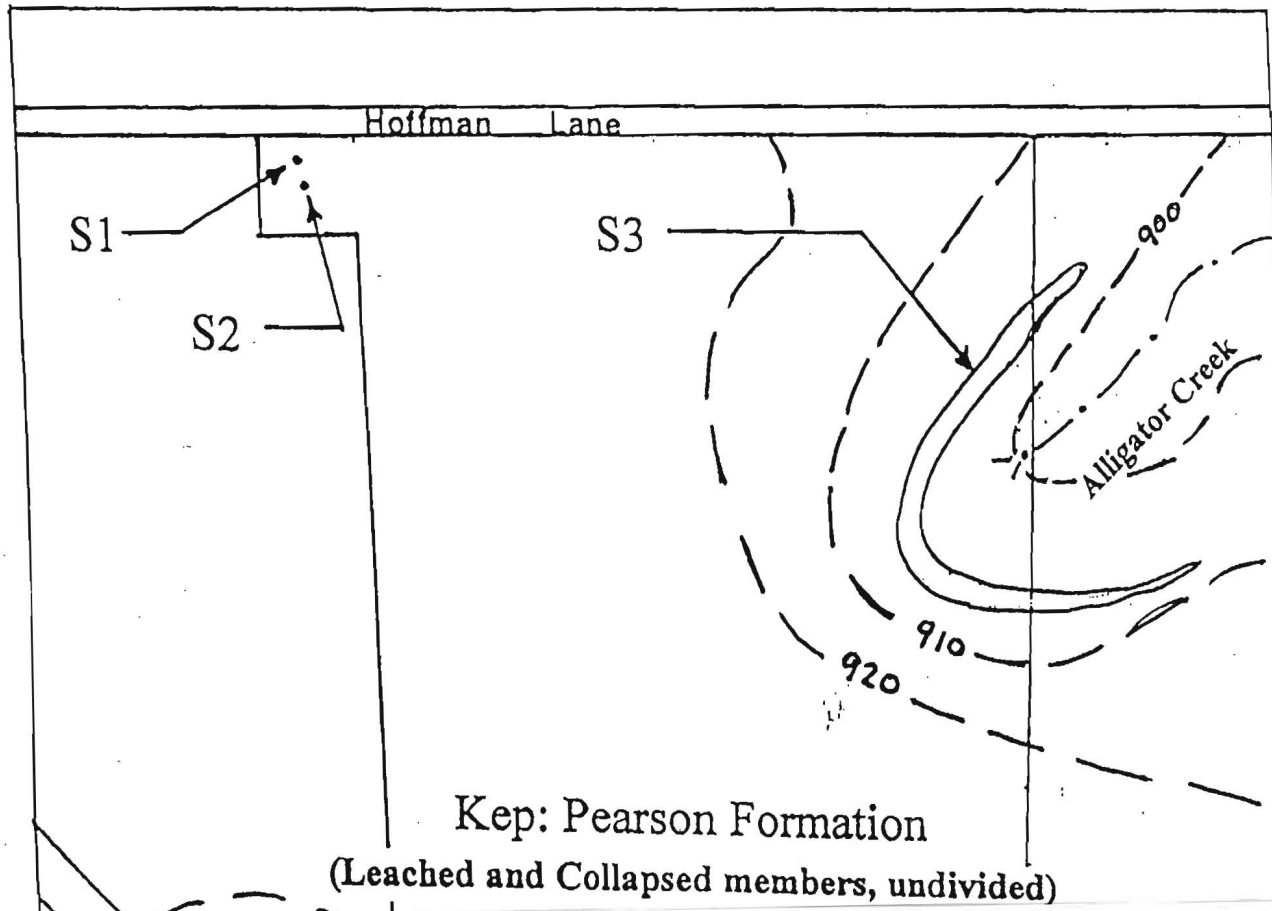
Comal ISD
FM 306 Project Site
Site Soils Map





Comal ISD
FM 306 Project Site
Site Geologic Map





Kep: Pearson Formation

(Leached and Collapsed members, undivided)

Recharge And Transition Zone
Exception Request Form
30 TAC §213.9 Effective June 1, 1999

Regulated Entity Name:

1. X **ATTACHMENT A - Nature of Exception.** A narrative description of the nature of each exception requested is provided as **ATTACHMENT A** at the end of this form. All provisions of 30 TAC §213 Subchapter A for which an exception is being requested have been identified in the description.

2. X **ATTACHMENT B - Documentation of Equivalent Water Quality Protection.** Documentation demonstrating equivalent water quality protection for the Edwards Aquifer is provided as **ATTACHMENT B** at the end of this form.

ADMINISTRATIVE INFORMATION

3. X One (1) original and three (3) copies of the completed application has been submitted to the appropriate regional office of the TNRCC.

4. X The applicant understands that no exception will be granted for a prohibited activity in Chapter 213.

5. X The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.

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 **RECHARGE AND TRANSITION ZONE EXCEPTION REQUEST FORM** application is hereby submitted for TNRCC review and executive director approval. The request was prepared by:

Comal ISD, Guillermo Nieri

Print Name of Customer/Agent

Guillermo Nieri

Signature of Customer/Agent Date 9/29/03

Attachment "A"

This project will involve the development of an elementary school play area consisting of an established grass playing field. This project will comply will all aspects of 30 TAC chapter 213 and the existing approved Water Pollution Abatement Plan for this property. During the development period additional protection of the Edwards Aquifer will be provided by erection of silt fencing which will be maintained until all of the disturbed ground is covered with well established grass.

Attachment "B"

This project adds no additional impervious cover to the site. It will provide for a thicker grass cover than presently exists. The project will not impact existing vegetative filter zone. The vegetative filter zones will by designated as a "NO PARKING ZONE" by signage.

TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

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.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*

Request for exception

2. Attachments				**Describe Any Attachments:** *(ex: Title V Application, Waste Transporter Application, etc.)*
X	YES		NO	**Recharge and Transition Zone Exception, General Information and Geological Assement**

3. Customer Reference Number-*if issued*				**4. Regulated Entity Reference Number-*if issued***		
CN		***(9 digits)***		**RN**	**101281202**	***(9 digits)***

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following:		Owner		Operator	X	Owner and Operator
	Occupational Licensee		Volunteer Cleanup Applicant			Other
TCEQ Use Only		**Superfund**		**PST**		**Respondent**

6. General Customer Information

	New Customer		Change to Customer Information
	Change in Regulated Entity Ownership	X	No Change *

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

7. Type of Customer:					
	Individual		Sole Proprietorship - D.B.A.		
	Partnership		Corporation		Federal Government
	State Government		County Government		City Government
	Other Government	School District		Other:	

8. Customer Name *(If an individual, please print last name first)*	*If new name, enter previous name:*
Comal Independent School District	

9. Mailing Address:	278 Loop 337			
	City	State	ZIP	ZIP + 4
	New Braunfels	Texas	78130	

10. Country Mailing Information *if outside USA*	**11. E-Mail Address *if applicable***

12. Telephone Number	**13. Extension or Code**	**14. Fax Number *if applicable***
830-221-2119	**N/A**	**830-221-2009**

15. Federal Tax ID *(9 digits)*	**16. State Franchise Tax ID Number** *if applicable*	**17. DUNS Number** *if applicable* ***(9 digits)***
1-74-6001777-9		

18. Number of Employees								**19. Independently Owned and Operated?**			
	0-20		**21-100**		**101-250**		**251-500**	X	**501 and higher**	X	**Yes**		**No**

SECTION III: Regulated Entity Information

20. General Regulated Entity Information

	New Regulated Entity		Change to Regulated Entity Information		No Change*

*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*				
22. Street Address (No PO Boxes)				
	City	State	ZIP	ZIP + 4
23. Mailing Address				
	City	State	ZIP	ZIP + 4
24. E-Mail Address:				

25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*

28. Primary SIC Code (4 digits)	29. Secondary SIC Code (4 digits)	30. Primary NAICS Code (5 or 6 digits)	31. Secondary NAICS Code (5 or 6 digits)

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

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.	
33. County	
34. Description of Physical Location	

35. Nearest City	State	Nearest Zip

36. *Latitude (N)*			37. *Longitude (W)*		
Degrees	*Minutes*	*Seconds*	*Degrees*	*Minutes*	*Seconds*

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "Unknown".* If you know a permit or registration # for this entity, please write it below the program."

	Animal Feeding Operation		Petroleum Storage Tank		Water Rights
	Title V - Air		Wastewater Permit		
	Industrial & Hazardous Waste		Water Districts		
	Municipal Solid Waste		Water Utilities		Unknown
	New Source Review - Air		Licensing - TYPE(s)		

Section IV: Preparer Information

39. Name	40. Title
Roy Linnartz	Project Consultant

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
830-221-2053	N/A	830-221-2118
44. *E-mail Address:*	roy.linnartz@comalisd.org	

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Plan
Application Fee Form

RECEIVED-TNRCC
2003 OCT 15 AM 9:10
SAN ANTONIO REGION

NAME OF PROPOSED REGULATED ENTITY: Comal ISD – Hoffmann Lane Elementary School
REGULATED ENTITY LOCATION: FM 306 and Hoffmann Lane, East Central Comal County
NAME OF CUSTOMER: Comal Independent School District

CONTACT PERSON: Guillermo Nieri / Roy Linnartz PHONE: 830-221-2119
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)
Regulated Entity Reference Number (if issued): RN 101281202 (nine digits)

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
X Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. 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):

☒ **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TNRCC**:
TNRCC - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

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

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement, Non-residential	Acres	$
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	$ 250.00
Extension of Time	Each	$

Guillermo Nieri
Signature

Date 9/24/03

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.

RECEIVED-TNRCC
2003 OCT 15 AM 9:10
SAN ANTONIO REGION

1222

HOFFMANN LANE ELEMENTARY SCHOOL
4600 FM 306 PH. 830-885-1799
NEW BRAUNFELS, TX 78132

37-65/1119 1117

DATE 10-13-03

PAY TO THE ORDER OF T.C.E.Q $250.00/no

Two hundred fifty dollars only DOLLARS

Security Features Included Details on Back

WELLS FARGO
Wells Fargo Bank Texas, N.A.
1000 N. Walnut St.
New Braunfels, TX 78130
www.wellsfargo.com

Bonnie J. Patrick

FOR Application Fee

Paron Zacontz

MP

⑈001222⑈ ⑆111900659⑆0662899335⑈

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Program
Application Fee Schedule
30 TAC §213.14 (effective 11/14/97) & 30 TAC §213.9 (effective 6/1/99)

Water Pollution Abatement Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	<5	$500
Multiple Single Family Residential and Parks	<5 5 < 10 10 < 50 ≥50	$1,000 $2,000 $3,000 $5,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 ≥10	$2,000 $3,000 $4,000 $5,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$500 - $5,000

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	$500	$500 - $5,000

Exception Requests

PROJECT	FEE
Exception Request	$250

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$100

Water Pollution Abatement Plan

For

Comal ISD Hoffman Lane Elementary School
Approximately 21.37 Acres on FM 306 at Hoffman Lane
Comal County, Texas

RECEIVED
MAR 9 2000
SAN ANTONIO

Prepared for

Texas Natural Resource Conservation Commission
and
Comal Independent School District

RECEIVED
MAR 2 0 2000
COUNTY ENGINEER

AlianzA, LLC
An Alliance of Environmental Resource Professionals

March 1, 2000
PN99004.1

Water Pollution Abatement Plan

for

Comal ISD Hoffman Lane Elementary School
Comal County, Texas

RECEIVED
MAR 9 2000
SAN ANTONIO

Prepared for

Comal Independent School District
and
Texas Natural Resource Conservation Commission

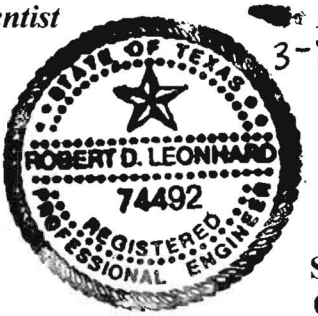
March 1, 2000
PN99004.1

Prepared by

Kenneth M. Cave
Project Manager

Russell Masters
Senior Scientist

Rob Leonhard, P.E.
Professinal Engineer
3-8-00



AlianzA, LLC
P.O. Box 267
Sabinal, Texas 78881
Office: 830-988-2192
FAX: 830-988-3197

AlianzA

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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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**
COUNTY: Comal STREAM BASIN: Guadalupe

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST __ MODIFICATION

APPLICANT INFORMATION

1. Applicant:

Contact Person: **Roy Linnartz / Guilermo Nieri**
Entity: **Comal Independent School District**
Mailing Address: **278 Loop 337**
City, State: **New Braunfels, Texas** Zip **78130**
Telephone: **(830)625-8081** FAX:_____

2. Agent/Representative (If any):

Contact Person: **Russell L. Masters**
Entity: **AlianzA, LLC**
Mailing Address: **P.O. Box 267**
City, State: **Sabinal, Texas** Zip: **78881**
Telephone: **(830)988-2192** FAX **(830)988-3197**

PROJECT LOCATION

3. Site Address: None Assigned at This Time
Street: **FM 306 N. and Hoffman Lane**
City: **East Comal County** Zip:_____

4. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X This project is not located within any city's limits or ETJ.

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

5.0 miles N. of City of New Braunfels on FM 306 N. E. side of 306 before Hoffman Lane

6. X **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.

7. X **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:

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

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

9. X **ATTACHMENT C - PROJECT DESCRIPTION.** Attached at the end of this form is a detailed narrative description of the proposed project.

10. Existing project site conditions are noted below:

   ___ Existing commercial site
   ___ Existing industrial site
   ___ Existing residential site
   ___ Existing paved and/or unpaved roads
   ___ Undeveloped (Cleared)
   X Undeveloped (Undisturbed/Uncleared)
   ___ Other: _____

PROHIBITED ACTIVITIES

11. X 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).

12. X 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

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

X For a Water Pollution Abatement Plan and Modifications, the total acreage of the site where regulated activities will occur.
X 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 Contributing Zone Plan.
___ 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.

14. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TNRCC 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:

___ TNRCC cashier
___ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

15. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TNRCC to the local municipality or county, groundwater conservation districts, and the TNRCC's Central Office.

16. X 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.
___ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with the executive director.

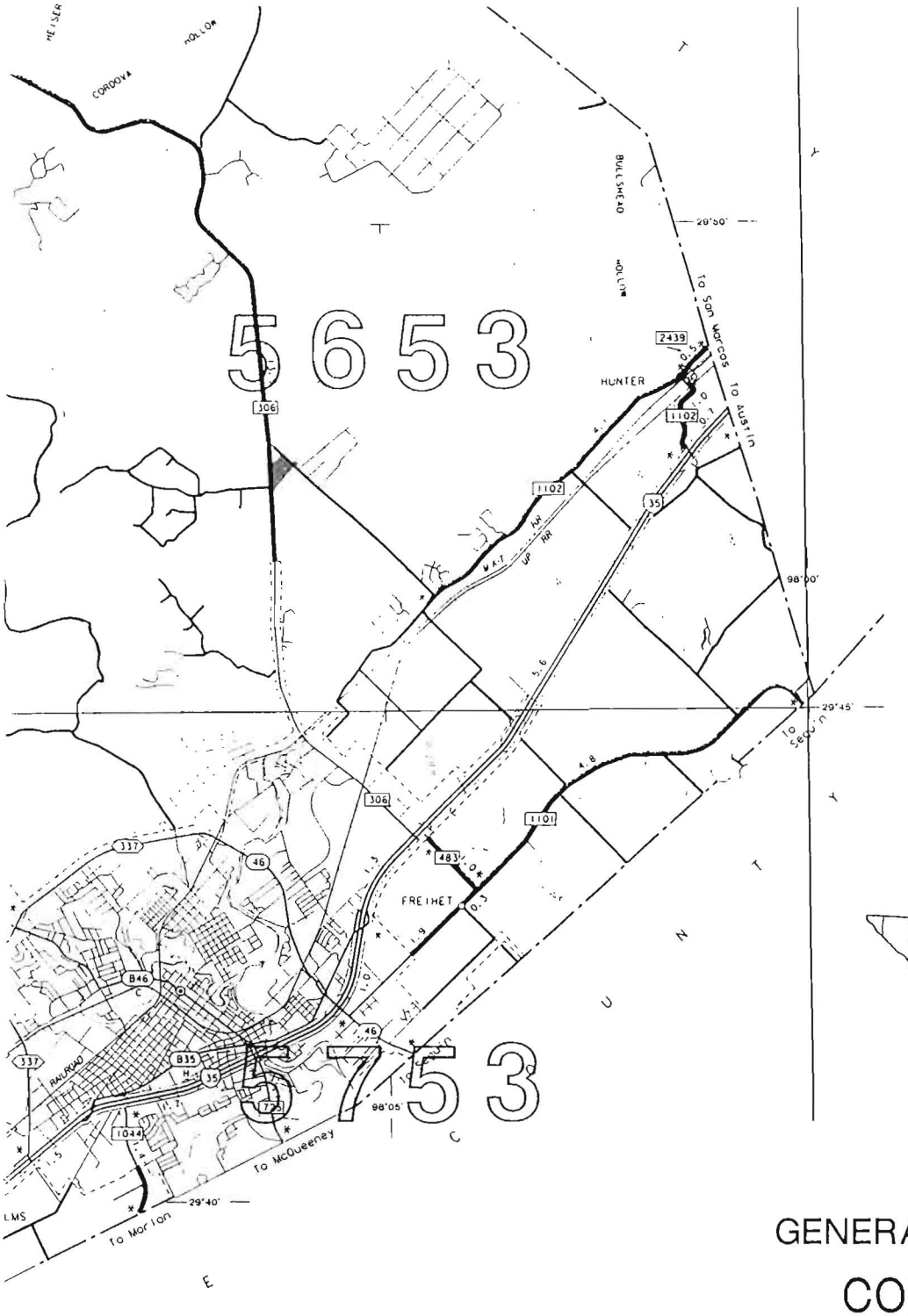
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **GENERAL INFORMATION FORM** is hereby submitted for TNRCC review. The application was prepared by:

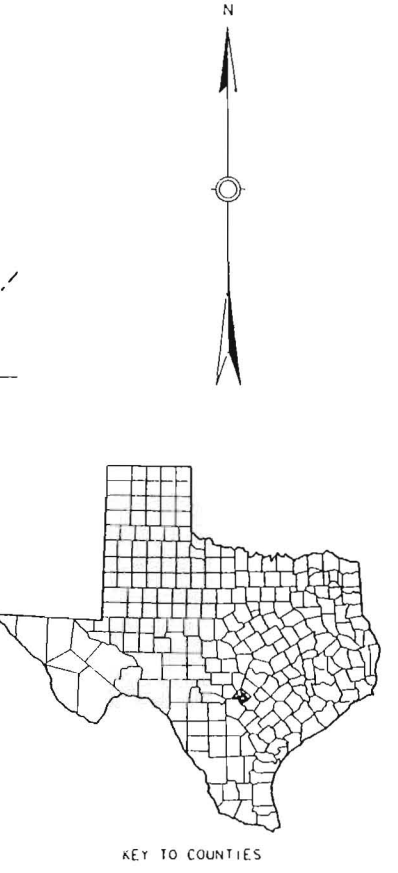
Comal Independent School District(Applicant)/Russell Masters(Agent)
Print Name of Applicant/Owner/Agent

Signature of Applicant/Owner/**Agent** Date 3/8/2000

Attachment A

Road Map Showing Directions to and Location of Project Site





KEY TO COUNTIES

GENERAL HIGHWAY MAP

COMAL COUNTY

TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

0 1 2 3 4

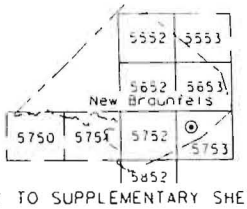
MAP

1988

1990 CENSUS FIGURES

HIGHWAYS REVISED TO JANUARY 1, 1995

LAMBERT CONFORMAL CONIC PROJECTION - 1927 NORTH AMERICAN DATUM
STANDARD PARALLELS 27°25' AND 34°55'



KEY TO SUPPLEMENTARY SHEETS

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

TRAVEL INFORMATION

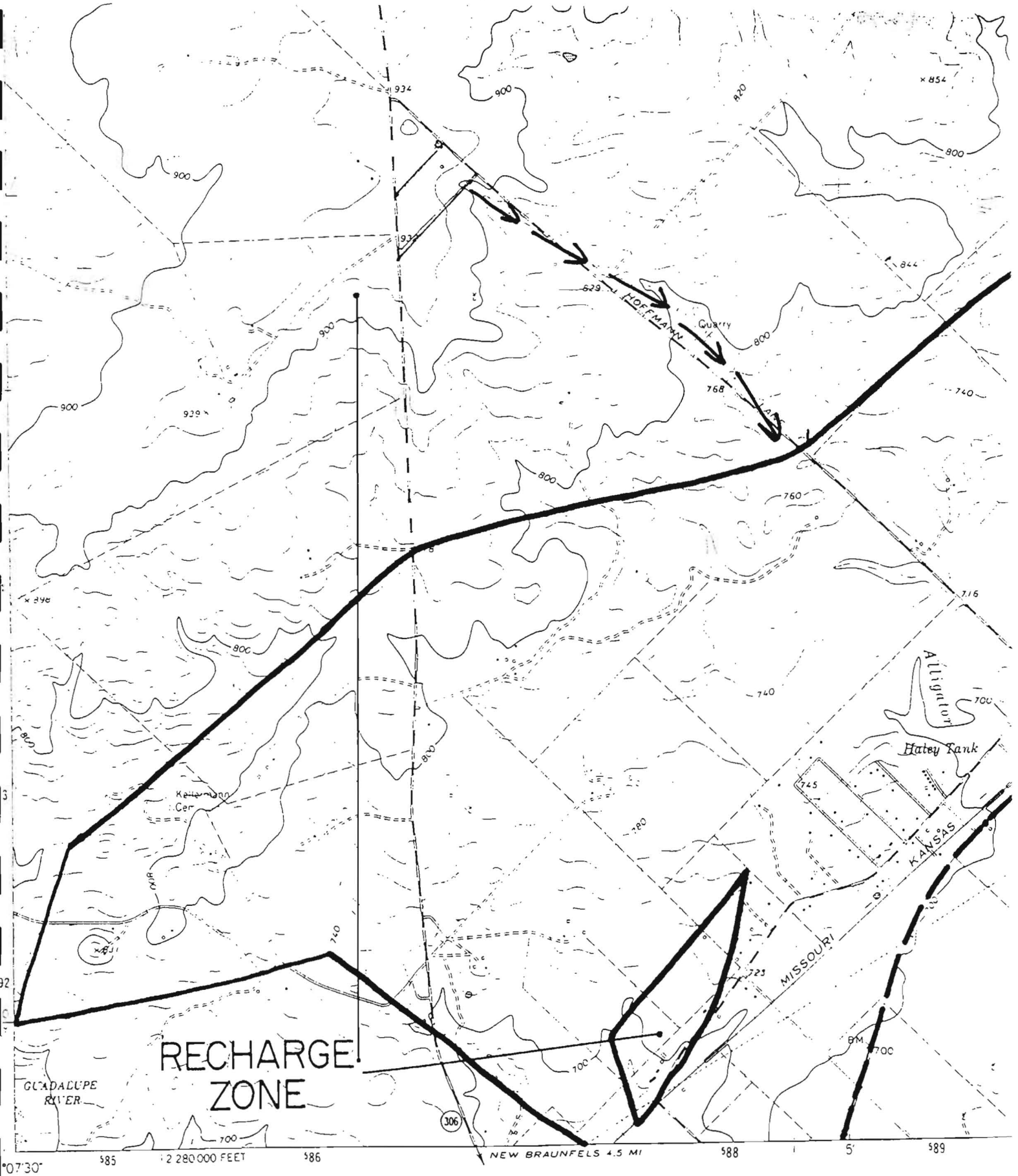
Dial 1-800-452-9292 for travel assistance from a professional Texas travel counselor, including routing in Texas, emergency road condition information, and other travel services, or to register a comment or complaint about department operations.

Copies of this map are available for public use at nominal cost from the Texas Department of Transportation, 4000 Jackson Avenue Austin, Texas 78731 or mail requests may be sent to the Budget and Finance Division, P O Box 5020, Austin, Texas 78763-5020

Comal Sheet 1 of 1 Base Sheet and 5 Supplementary Sheets

Attachment B

USGS/Edwards Recharge Zone Map



Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1958 Field checked by USGS 1964

Polyconic projection 1927 North American datum
10 000-foot grid based on Texas coordinate system, south central zone

HUNTER, TEX.
N2945 - W9800/7 5

1964
PHOTOREVISED 1973
AMS 6343 I SE - SERIES V882

Attachment C

Project Description

This project consists of a 21.37 acre site to be developed into an elementary school for the Comal ISD. The site is located on the Edwards Aquifer Recharge Zone, approximately 5.0 miles N of New Braunfels on FM 306. The site is relatively flat draining in a south-east direction into an unnamed tributary of Alligator Creek at the south-eastern edge of the site, approximately 1.25 miles upstream of the southern boundary of the EARZ.

Development of the property will consist of:

76,711 Sq. ft. of classroom and administrative buildings
9,185 Sq. ft. in a gymnasium
165,932 Sq. ft. of impervious parking and roads
A pumphouse/chlorinator/fuel storage bldg.
Vegetated filter strips
Stormwater features-sedimentation/filtration basins
Wastewater treatment unit & irrigation area

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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

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

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

PROJECT INFORMATION

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

2. Soil cover on the project site is **0.83** feet thick. In general, the soil present appears to have the ability to:

   __ transmit fluid flow to the subsurface.
   X impede fluid flow to the subsurface.

3. X **SOILS ATTACHMENT**. A narrative description of soil units and a soil profile, including thickness and hydrologic characteristics are attached at the end of this form.

4. X 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.

5. X 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.

6. X 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" = 50'
Site Geologic Map Scale	1" = 200'

7. Method of collecting positional data:
   __ Global Positioning System (GPS) technology.
   X Other method(s). **USGS Topographic Maps**

8. X The project site is shown and labeled on the Site Geologic Map.

9. X Surface geologic units are shown and labeled on the Site Geologic Map.

10. X 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.

11. __ The Recharge Zone boundary is shown and labeled, if appropriate.

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

X There are 2 (#) 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.
X 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.

ADMINISTRATIVE INFORMATION

13. X One (1) original and three (3) copies of the completed assessment has been provided.

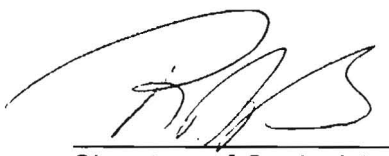
Date(s) Geologic Assessment was performed: 9-25-99
Date(s)

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 213.

ROBERT A. BURNS
Print Name of Geologist

(210) 698-5115
Telephone

Fax



Signature of Geologist

9-26-99
Date

Representing: ~~R. A. BURNS ENVIRONMENTAL CONSULTANT~~ Blidar B
(Name of Company)

Comal ISD FM 360 Project Site
Stratigraphic Column

Summary of the lithologic and hydrologic properties of the hydrogeologic subdivisions of the Edwards aquifer outcrop, Comal County, Texas

[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		Navarro and Taylor Groups, undivided			CU	600	Clay, chalky limestone	Gray-brown clay; marly limestone	None	Low porosity/low permeability
			Austin Group			CU; rarely AQ	130 - 150	White to gray limestone	White-chalky limestone; *Gryphaea aucella*	None	Low porosity; rare water production from fractures/low permeability
			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	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	Edwards aquifer	I	Georgetown Formation			CU	Less than 10	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 - 100	Mudstone to packstone; *miliolid* grainstone; chert	Light tan, massive; some *Toucasia*	Many subsurface; may be associated with earlier karst development	Laterally extensive; both fabric and not fabric/ water-yielding; one of most permeable
		III			Leached and collapsed members, undivided	AQ	80 - 100	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; *Montastrea sp.*	Extensive lateral development, large rooms	Majority not fabric/one of most permeable
		IV			Regional dense member	CU	20 - 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	None, 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; *Toucasia*	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; locally permeable
		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/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

Comal ISD Hoffman Lane Elementary School

Geologic Assessment Table Feature List

Feature S1: A new water well (MM) drilled, not completed, to be closed.

Feature S2: A new water well (MM) completed and equipped in compliance with 16 TAC Chapter 76.

Feature S3: Vuggy rock zone (VRZ) exposed along the upper dry creek bed, tributary to Alligator Creek. Infiltration restricted by underlying impervious Grainstone. Vugs do not appear to be interconnected.

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: COMAL ISD FM 306 SITE

| FEATURE ID | | | FEATURE CHARACTERISTICS | | | | | | | | | | | | | | | | | | | | | | | | PHYSICAL SETTING | | | | | | | | | | | | | | | | | | |

Comal ISD-Hoffman Lane Elementary School

Narrative Description of Site Specific Geology

The Comal ISD school site is covered with a thin rocky soil described later in this report. The site is underlain with crystalline limestone, mudstone, grainstone, chert, and collapsed breccia. These rocks are Lower Cretaceous in age and make up the Person formation of the Edwards Group of rocks. The Person formation is further divided into three members, the Cyclic and marine member, Leached and collapsed member, and the Regional dense member(see stratigraphic column attached).

The Leached and Collapsed(L and C) member, undivided is the only unit exposed in the study area. The L and C member is approximately 80 feet thick with approximately 20 feet of this unit exposed in the site area. This portion of the L and C member appears in the easters portion of the study area and outcrops along the unnamed tributary of Alligator Creek. The L and C member is confined below by the impervious Regional Dense member. No prominent fracture patterns or faulted rock was observed on the site. No potentially significant manmade or significant geologic features were identified by this survey. The following potential recharge features were mapped and described on the attached Geologic Assessment Table.

Comal ISD
FM 306 Project Site
Site Soils Attachment

Rumple-Comfort Association (80% of Site):

The Comal ISD 306 site is approximately 21.370 acres. The Rumple-Comfort (RUD) associated soils (Soil Survey of Comal & Hays County, June 1984) represent approximately 80% of the study area (see Soils Map). This soil association consists of shallow to moderately deep soils on the upland portion of the study area. The surface layer is dark reddish brown, very cherty clay loam soils up to 10 inches thick (see Table 1). Cobbles and chert nodules on the surface are common.

The soils are well drained and support a thick growth of buffalo grass, Texas persimmon, Ashe juniper, mesquite, Spanish oak, Prickly pear and other assorted cactus.

Surface runoff is slow to medium. Permeability is slow, and available water capacity is low. These factors will impede fluid flow to the subsurface. The rocky surface layer, shallowness to bedrock, clayey and corrosivity to uncoated steel are severe limitations for use of soils for urban and recreation uses.

Comfort-Rock Outcrop Complex (20% of Site):

The Comfort-Rock outcrop (CrD) complex (Soil Survey of Comal & Hays County, June 1984) represents 20% of the study area (see Soils Map). Located within the Alligator Creek drainage, eastern portion of the study area. The Comfort soils consists of shallow, clayey soils and Rock outcrop on side slopes, hilltops and uplands on the Edwards Plateau. Typically the surface layer of the Comfort soils is dark brown extremely stony clay about 6 inches thick. The subsoil extends to a depth of 13 inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone (see Table 1).

The Comfort soil is well drained. Surface runoff is slow to medium. Permeability is slow, and the available water capacity is very low. These factors will impede fluid flow to the subsurface. Water erosion is a slight hazard. The stony surface layer, shallowness to bedrock, and corrosivity to uncoated steel are sever limitations for use of soils for urban and recreation uses. Texas persimmon and blueberry juniper strive in these areas.

TABLE NO.1

Soil Profile, Thickness, Hydraulic Characteristics

(Table derived from the "Soil Survey of Comal & Hays Counties, Texas")

SOIL	DEPTH	DESCRIPTION	HYDRAULIC CHARACTERISTICS
RUD	0-10	Very cherty clay loam,	C/D
	10-28	Very stony clay,	
	28-36	unweathered bedrock.	
CrD	0-6	Extremely stony clay,	D
	6-13	Very stony clay,	
	13-20	unweathered bedrock	

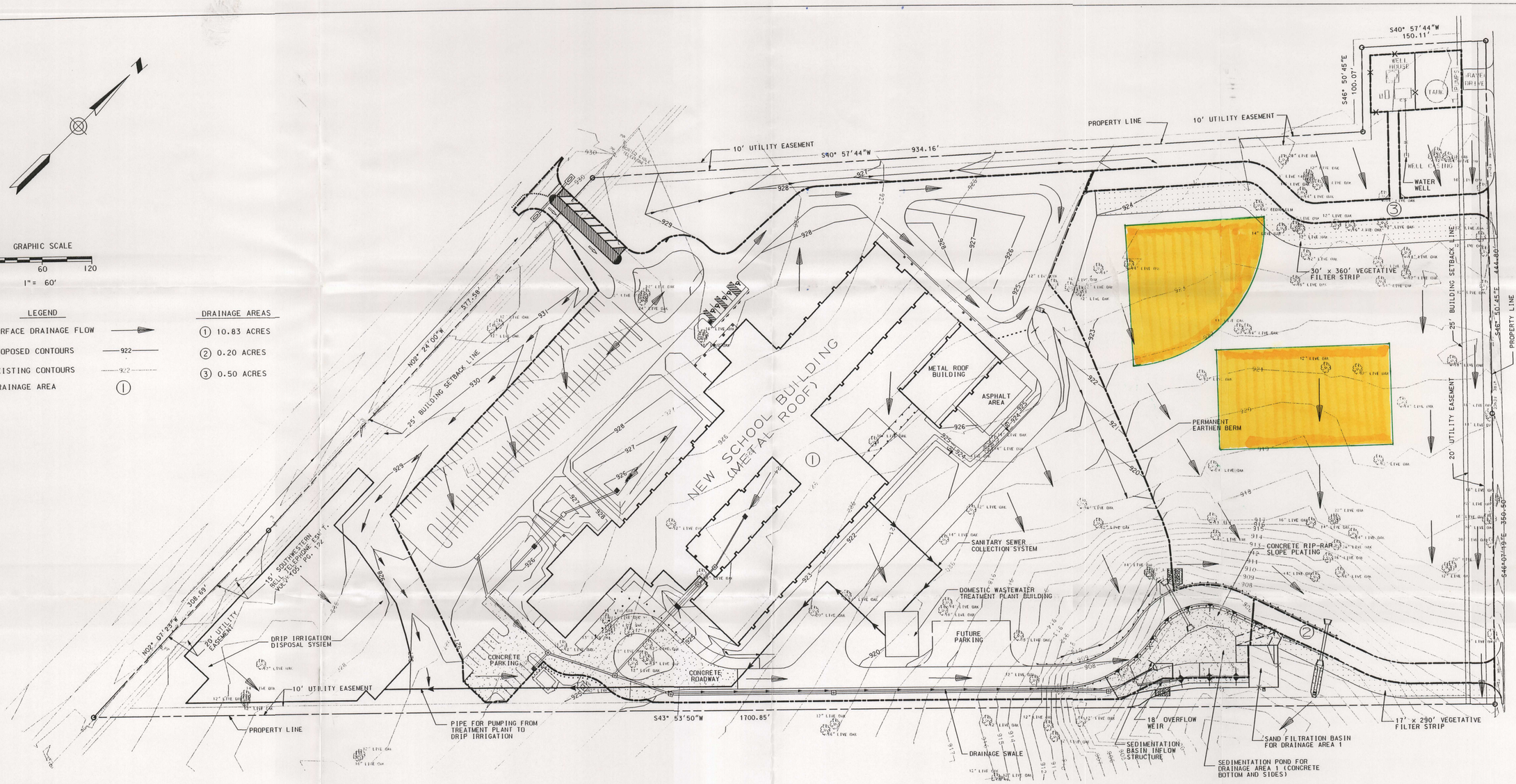
Hydraulic Characteristics

A: high infiltration rate, low run-off potential

B: medium high infiltration rate, medium to low run-off potential

C: medium low infiltration rate, medium to high run-off potential

D: low infiltration rate, high run-off potential



T.C.E.Q. GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TNRCC REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST BE 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 TNRCC 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 TNRCC 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 TNRCC HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF 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 THE DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. IF SEDIMENTS ESCAPE 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 BYTHE 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 STORM WATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER 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 TEMPORARY 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 TNRCC 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. TIE HOLDER OF ANY APPROVED EDWARDS AQUIFER PROTECTION PLAN MUST NOTIF 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 ANY OTHER MODIFICATION SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EWARDS AQUIFER;

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

AUSTIN REGIONAL OFFICE, REGION 11
1921 EDER BEND, SUITE 150
AUSTIN, TEXAS 78758-5336
PHONE (512) 339-2929
FAX (12) 339-3795

SAN ANTONIO REGIONAL OFFICE, REGION 13
14250 JUDSON RD.
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (10) 545-4329

TNRC-0592 (REV.5/01/02)

CIVIL ENGINEERING GENERAL NOTES

1. ALL PHASES OF WORK UNDER THIS CONTRACTOR SHALL STRICTLY ADHERE TO THE REGULATIONS OF THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION, COMAL COUNTY, TEXAS, AND THE COMAL INDEPENDENT SCHOOL AS WELL AS OTHER ORDINANCES, SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.

2. FINAL DECISIONS OR JUDGMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE STANDARDS AND REGULATIONS SHALL BE MADE BY THE ENGINEER, AS APPLICABLE.

3. CONTRACTOR WILL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.

4. THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND DEFEND, INDEMNIFY AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

5. VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.

6. "TNRCC" SHALL SIGNIFY THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. "TGM" SHALL SIGNIFY THE JUNE 1999 TECHNICAL GUIDANCE MANUAL, RG-340.

7. CONSTRUCTION OF THE PONDS ARE SUBJECT TO INSPECTION BY TNRCC REPRESENTATIVES. THEY SHALL NOT BE ACCEPTED BY THE OWNER UNTIL BOTH OF THESE ENTITIES ARE SATISFIED WITH THE INSTALLATION.

8. "TXDOT" SHALL SIGNIFY THE TEXAS DEPARTMENT OF TRANSPORTATION 1993 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES.

9. APPLY "PRIME COAT" (MC-30) AT A RATE OF 0.2 GAL/S.Y. MAXIMUM TO THE TOP OF THE FLEXIBLE BASE COURSE ON ACCESS DRIVES PRIOR TO THE PLACEMENT OF HOT MIX ASPHALTIC PAVEMENT.

10. "HOT MIX ASPHALTIC CONCRETE" (HMAC) PAVEMENT SHALL BE TYPE D ACCORDING TO TXDOT ITEM 340. PLACE THE HMAC ON DRY, COMPACTED BASE AND AT PROPER TEMPERATURES.

11. "FLEXIBLE BASE" SHALL BE TYPE A OR B, GRADE 1 OR 2, ACCORDING TO TXDOT ITEM 247, COMPACTED TO 95% OF MAXIMUM DRY DENSITY AT A MOISTURE CONTENT ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR) PROCEDURES. MAINTAIN WATER CONTENTS NEAR OPTIMUM TO PROMOTE COMPACTION. TEST BY ASTM D-2922 (NUCLEAR METHOD)

12. GRAVEL SHALL BE COMPOSED OF WELL-GRADED, WASHED RIVER GRAVEL, APPROVED BY THE ENGINEER. ONE HUNDRED (100) PERCENT PASSING A TWO-INCH SIEVE, AT LEAST NINETY-FIVE (95) PERCENT PASSING A ONE AND THREE-QUARTER INCH (1¾") SIEVE, AND AT LEAST NINETY PERCENT RETAINED ON A ONE-HALF INCH (½") SIEVE.

13. ALL GEOTEXTILE FABRICS AND CLAY LINERS SHALL MEET THE REQUIREMENTS OF THE TNRCC TGM, PAGE 3-32.

14. PROVIDE CLASS "A" CONCRETE ACCORDING TO TXDOT ITEM 421 WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. CONCRETE SHOULD HAVE 3 TO 5 PERCENT ENTRAINED AIR. CAST AND PLACE CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET FORTH BY THE AMERICAN CONCRETE INSTITUTE.

15. REINFORCING STEEL SHALL BE FROM NEW BILLET AND SHALL HAVE DEFORMATIONS CONFORMING TO ASTM A-615 AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

A-615, GRADE 40.....#3 BARS AND DOWELS.
A-185.....WELDED WIRE FABRIC.
A-615, GRADE 60.....ALL OTHER REINFORCING.

ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS, EXCEPT WHERE REFERRING TO CLEARANCE. USE PLASTIC BAR SUPPORTS (CHAIR) TO HOLD REINFORCEMENT IN POSITION DURING CONCRETE PLACEMENT OPERATIONS. SUPPORT THE REINFORCING STEEL TO OBTAIN A MINIMUM OF 2.5 INCHES OF CONCRETE COVER.

16. CONSTRUCT SITE GRADING IMPROVEMENTS TO THE FOLLOWING ELEVATION TOLERANCES:

DRAINAGE FACILITIES.....+0.02 FOOT
GRADING/LANDSCAPING.....+0.16 FOOT

SHOULD ANY ELEVATIONS BE FOUND TO BE OUT OF LEVEL BEYOND THE STATED TOLERANCE AFTER CONTRACTOR'S OPERATIONS, RETURN AND CORRECT THE GRADING, REMOVE AND DISPOSE OF ALL EXCESS MATERIALS AT CONTRACTOR'S EXPENSE.

17. PROJECT TREES DURING CONSTRUCTION ACCORDING TO FIGURE 2-1 OF THE TNRCC TGM.

18. COVER THE SITE DISTURBED DURING CONSTRUCTION WITH LIVE GRASS BEFORE ACCEPTANCE. USE SOD AND HYDRAULICALLY MULCH WITH OVER SEED THAT WILL PROVIDE AT LEAST 90 PERCENT COVERAGE. DEMONSTRATE GROWTH AND COVERAGE THROUGHOUT ONE YEAR.

19. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION. UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.

20. REPAIR OR REPLACE ANY EXISTING OFF-SITE IMPROVEMENTS OR UTILITY REMOVED, DAMAGED, OR UNDERCUT BY CONTRACTOR'S OPERATIONS AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.

21. POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM D-3034 FOR SDR 35. JOINTS SHALL BE ELASTOMERIC GASKET MATERIALS CONFORMING TO ASTM D-3212. INSTALLATION SHALL CONFORM TO ASTM D-3921.

22. DESIGN CALCULATIONS ARE INCLUDED IN THE REPORT TITLED "MODIFICATIONS TO A PREVIOUSLY APPROVED WATER POLLUTION ABATEMENT PLAN FOR HOFFMAN LANE ELEMENTARY SCHOOL".

MODIFIED PERMANENT EROSION CONTROL PLAN

RECEIVED
OCT 16 2003
COUNTY ENGINEER

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

REGISTERED PROFESSIONAL ENGINEER
LEO A. DALY III
52711
STATE OF TEXAS

RECEIVED-TNRCC
01-6 AM 7:15
NORTH CENTRAL AUSTIN

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

No.	Date	Revision	Approved

SCALE: 1"= 60' DATE: 01/07/03
DESIGNED BY: PJ
DRAWN BY: SMG
CHECKED BY:
APPROVED BY:
PROJECT NO: 2094.20.001.300

Sheet Number
SHT 1 OF 4

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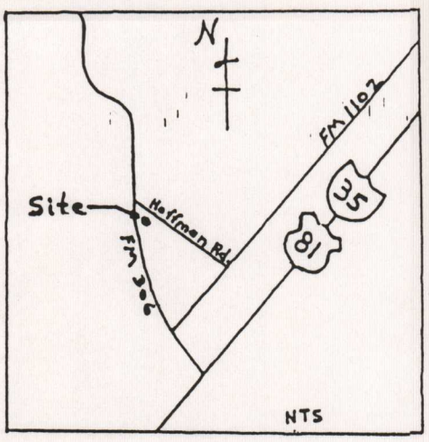
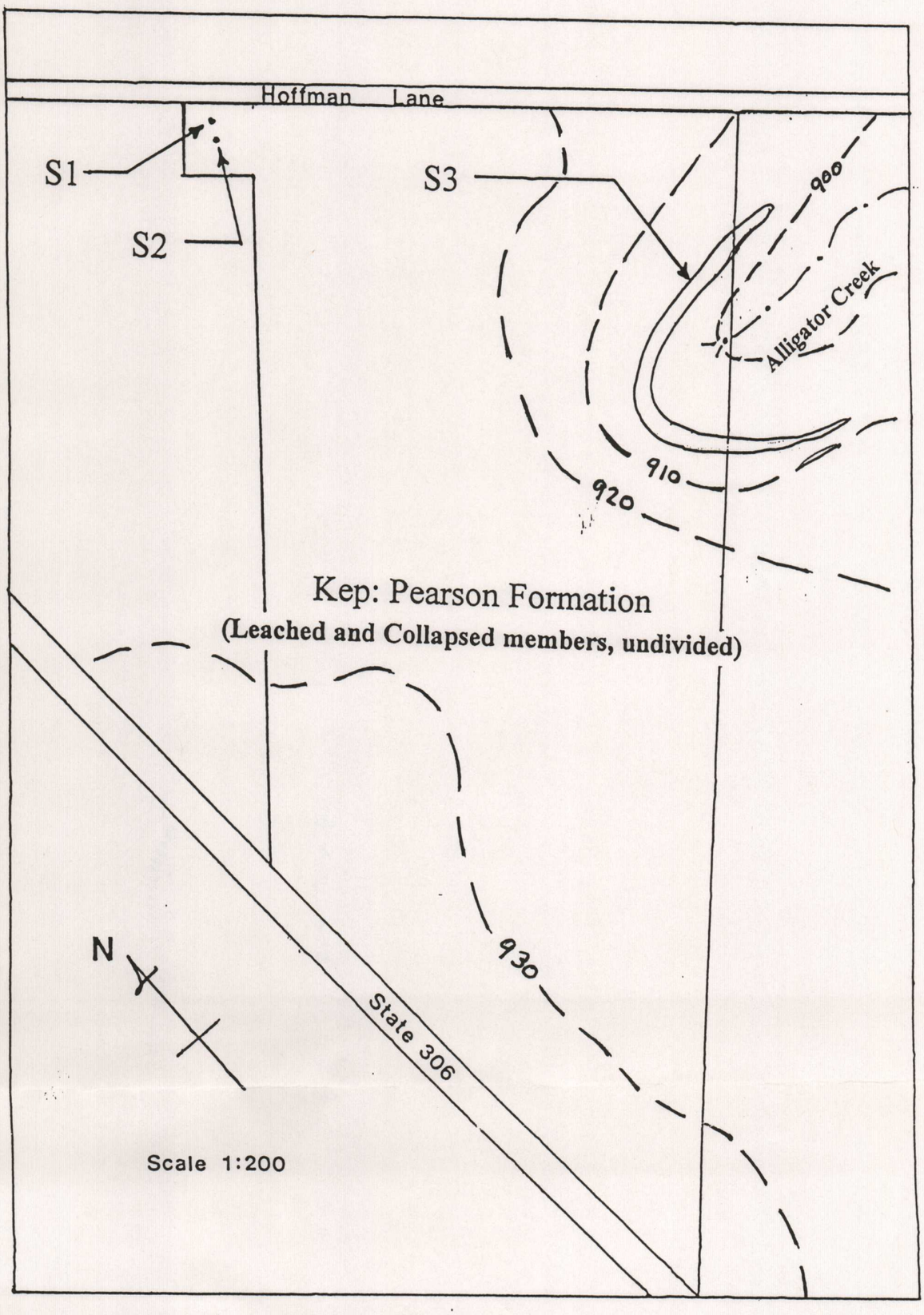
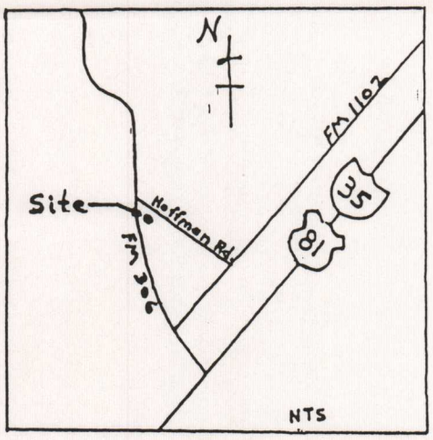
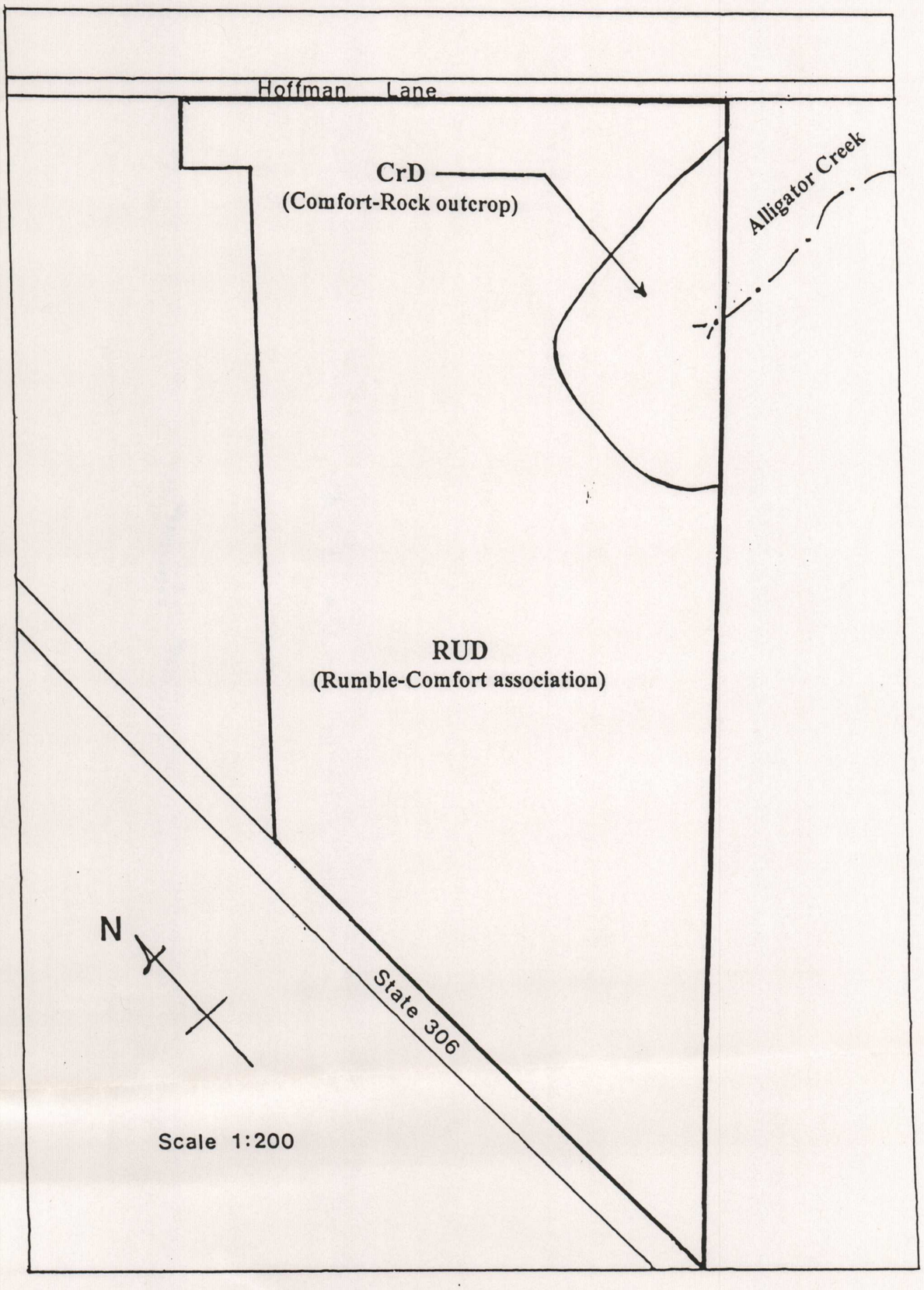
Comal ISD
FM 306 Project Site
Site Geologic Map





Comal ISD
FM 306 Project Site
Site Soils Map





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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

PROJECT INFORMATION

1. The type of project is:
   - ___ Residential: # of Lots: ___
   - ___ Residential: # of Living Unit Equivalents: ___
   - ___ Commercial
   - ___ Industrial
   - X Other: **School**

2. Total site acreage (size of property): **21.370**

3. Projected population: **900 – (800 students, 100 faculty and staff)**

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	94,623	÷ 43,560 =	2.17
Parking	57,642	÷ 43,560 =	1.32
Other paved surfaces	108,290	÷ 43,560 =	2.49
Total Impervious Cover	260,555	÷ 43,560 =	5.98
Total Impervious Cover ÷ Total Acreage x 100 =			27.98%

5. X **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.

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

FOR ROAD PROJECTS ONLY
Complete questions 7-12 if this application is exclusively for a road project.

7. Type of project:
   - ___ TXDOT road project.
   - ___ County road or roads built to county specifications.

__ City thoroughfare or roads to be dedicated to a municipality.
__ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:
__ Concrete
__ Asphaltic concrete pavement
__ Other: _____

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

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

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

12. __ Maintenance and repair of existing roadways that do not require approval from the TNRCC 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 TNRCC.

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. 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.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

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

100 % Domestic	6400 gallons/day
__ % Industrial	_____ gallons/day
__ % Commingled	_____ gallons/day
TOTAL	6400 gallons/day

15. Wastewater will be disposed of by:
X **On-Site** Sewage Facility (OSSF/Septic Tank):
ATTACHMENT C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater. 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. **See attached Preliminary Engineering Report.**

__ 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 §285.

X 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 **On-site domestic wastewater** (name) Treatment Plant**(See Preliminary Engineering Report).** The treatment facility is :

__ existing.

X 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.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 50'.

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.

X 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 – Comal County Panel No.4854630110C 9/29/86

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.):

X There are 2 (#) 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.

X The wells are not in use and will be properly abandoned. **(1) well**

X The wells are in use and comply with 30 TAC §238. **(1) well**

__ 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:

X All **sensitive and possibly sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.

__ No **sensitive and possibly sensitive** geologic or manmade features were identified in the Geologic Assessment.

__ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. Geologic or manmade features were found and are shown and labeled.

__ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. No geologic or manmade features were found.

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

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

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

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

26. X Surface waters (including wetlands).

27. X Locations where stormwater discharges to surface water or sensitive features.

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

ADMINISTRATIVE INFORMATION

28. X One (1) original and three (3) copies of the completed application have been provided.

29. X Any modification of this WPAP will require TNRCC 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 TNRCC review and executive director approval. The form was prepared by:

Comal ISD(Applicant)/Russell Masters(Agent)
Print Name of Applicant/Owner/Agent

Signature of Applicant/Owner/Agent — Date: 3/8/2000

TNRCC 0584 – ATTACHMENT "A"

THE FOLLOWING IS A DESCRIPTION OF THE FACTORS THAT COULD AFFECT SURFACE WATER AND GROUNDWATER QUALITY:

Factors associated with this project that could affect surface and groundwater quality include the following:

1. Construction activity – clearing, grubbing, earthwork, various forms of soil disturbance.

2. Use of chemicals (paints, oils, greases, compounds, etc.) during building construction.

3. Tracking of soil off site before complete vegetation/revegetation is complete.

4. Storm water runoff carrying oils, greases, hydrocarbons downstream from the site.

5. Domestic waste generated by the school activity to be treated and disposed of on-site.

6. Commercial/Industrial waste generated by the food preparation on the school grounds.

Attachment B

Volume and Character of Stormwater

THE FOLLOWING IS A DESCRIPTION OF STORM WATER VOLUME AND CHARACTER:

Using the rational method (Q=CIA) for calculating hydrologic using industry standard methods for computing runoff coefficients, time of concentration, rainfall intensities for corresponding storm events, the quantity of runoff can be expected to be as follows:

Pre-Development Condition

The runoff coefficient is approximately 0.60, that is, about sixty percent of the rain that falls on the site appears as direct runoff. This is a relatively conservative number for a completely undeveloped site with a lot of dense vegetation. The rock strata present at levels very near the surface contribute to the higher runoff.

In determining the runoff developed by the site, the relatively high time of concentration occurs due to the particularly long reach from the furthest point from the collection of storm water before leaving the site.

Using a Soil Conservation Service method (from TR-55) of computing time of concentration, the tc equals 36 minutes. Using intensity-duration-frequency information for the region, the intensity for a 25-year storm is 4.85 inches/hour.

Thus, Q = CIA = (0.60) x (4.85) x (21.3) = 62.0 cfs for the entire site

Post Development Condition

The proposed condition of the site introduces about 25% impervious cover. The time of concentration is still based on a relatively long reach. However, there is essentially no sheet flow and much of the runoff is via pavement, so the time of concentration becomes only ten (10) minutes. The intensity necessarily increases to 7.5 inches/hour.

A good method for computing the runoff coefficient with various types of impervious cover is to use a weighted average. Using values in the 95-100 % range for the parking areas, roads and rooftops, and about 60 % for the grassed/landscaped areas and the remaining natural vegetation, the value becomes 0.65.

Thus, Q = CIA = (0.65) x (7.5) x (21.3) = 103.8 cfs for the entire site.

So an increase from 62.0 cfs to 103.8 cfs, or about two-thirds more runoff is developed in the twenty-five year storm event.

The quality or character of the storm water runoff would be as expected from a parking lot, including a heavy load of school bus traffic. Typical dirt, oils and greases and hydrocarbons that would normally be associated with about 400 vehicles per day, including peak pick-up/drop off by privately owned vehicles and buses, as well as faculty and staff would be within the runoff. But a large portion

of the site will remain naturally vegetated or will be grassed / landscaped. With proper pollution prevention controls, the final quality of the run off can be quite similar to the site's existing, undeveloped condition.

Attachment C

On-Site Sewage Facility
Suitability Letter from Authorized Agent

See attached preliminary Engineering Report. A permit application for a No-Discharge System is being submitted simultaneously to the TNRCC

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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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

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 be stored on the site for less than one (1) year.

   X 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 TNRCC prior to moving the tanks onto the project.

   ___ Fuels and hazardous substances will not be stored on-site.

2. X **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. X 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. X **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.

   ___ The are no other potential sources of contamination.

SEQUENCE OF CONSTRUCTION

5. X **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. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. X 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: Alligator 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. X **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. 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.

___ 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

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.

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.

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

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, TNRCC inspections, or during excavation, blasting, or construction.

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

___ **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. X **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.

10. X **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided at the end of this form 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.

X 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.

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

12. X **ATTACHMENT I - Inspection and Maintenance for TBMPs.** 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. X All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. X 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. X 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. X 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. X **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.

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

ADMINISTRATIVE INFORMATION

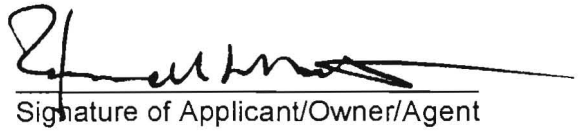
20. X All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. X 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 TNRCC Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TNRCC has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. X 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 TNRCC review and executive director approval. The application was prepared by:

Comal ISD(Applicant)/Russell Masters(Agent)
Print Name of Applicant/Owner/Agent



Signature of Applicant/Owner/Agent

3/8/2000
Date

TNRCC 0602 - ATTACHMENT "A"

SPILL RESPONSE ACTIONS

The following material management practices will be used to reduce the risk of spills or other accidental exposure of material and substance to storm water run-off:

GOOD HOUSEKEEPING:

The following good housekeeping practices will be followed on-site during construction:

1. An effort will be made to store only enough product required to do the job.
2. All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or within an enclosure.
3. Products will be kept in their original containers with the original manufacturer's label until used.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
5. Manufacture's recommendations for proper use and disposal will be followed.
7. The site construction superintendent will inspect during work days to ensure proper use and disposal of materials onsite.

HAZARDOUS PRODUCTS:

1. Products will be kept in original containers unless the containers are not re-sealable.
2. Original labels and material safety data will be retained; they contain important information.
3. If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed.

PETROLEUM PRODUCTS:

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

FERTILIZERS:

Fertilizers used will be applied only as recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered room. The contents of any partially used bags of fertilizer shall be transferred to a sealabel plastic bin.

PAINTS:

Paint products will be stored in tightly sealed containers which are clearly labeled. Any paint product used onsite will be applied according to the manufacturer's recommendations.

CONCRETE TRUCKS:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on-site.

SPILL CONTROL PRACTICES:

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

1. Manufacturer's recommended methods for spill clean-up will be clearly posted and site personnel will be made aware of the procedures and the locations of the information and clean-up supplies.
2. Materials and equipment needed for spill clean-up will be kept in the material storage area on-site. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, sawdust, kitty litter, sand and plastic and metal trash containers specifically for this purpose.
3. All spills will be cleaned up immediately after they are discovered.
4. The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
5. Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size of the spill.
6. The spill prevention plan will be adjusted as needed to prevent any spill from re-occurring and to specify how better to clean it up should a similar spill occur. A description of the spill, what caused it, and the cleanup measures will be kept in the log of the temporary and permanent BMP inspections.
7. The site construction superintendent will be the spill prevention and cleanup coordinator. He will designate at least one other site person who will receive spill prevention and clean-up training. The names of the spill personnel will be posted in the materials storage area and in the office.

TNRCC 0602 - ATTACHMENT "B"

POTENTIAL SOURCES OF CONTAMINATION

The materials or substances listed below are expected to be present onsite during construction:

1. Concrete
2. Detergents
3. Fertilizers
4. Petroleum Based Products
5. Cleaning Solvents
6. Wood
7. Seed or sod
8. CMU block
9. Mortar
10. Paint

TNRCC 0602 – ATTACHMENT "C"

SEQUENCE OF MAJOR ACTIVITIES

The sequence of major activities for this project are as follows:

1. Install Sediment Control (Silt) Fence and Rock Filter Dam at the northwest portion of the site

2. Perform Phase I of the construction activities, the water system infrastructure.

3. Install the permanent berm to the north of the main site, and the small temporary diversion berm at the east, low end of the permanent berm.

4. Install southeast property line Silt Fence and Rock Filter Dam.

5. Install the downstream 650 LF +/- of the underground storm drainage system, which is near the southeast property line. Suitably cap the pipe temporarily to prevent soil from clogging the pipe.

6. Install the temporary diversion berm along the southeast property line.

7. Install the Temporary Sediment Basin at the low end of the site, constructing the identified portion of the permanent earthen berm to be used as part of this temporary control.

8. Begin major site construction activities, including underground utilities, construction of buildings, roads, and parking.

9. Place Temporary Inlet Protection immediately following the installation of the grate and curb inlets for the underground storm sewer system.

10. Construct the Permanent Sedimentation and Filtration Basin along with the associated culverts and adjacent roadway. Simultaneously remove the Temporary Sediment Basin. Ensure the items in #4 are still in place during this activity.

11. When construction activity and soil stabilization is complete (at least 90% vegetative cover) to the satisfaction of the owner and the engineer, remove temporary structural controls and restore any vegetation removed during this process.

Attachment D

Temporary BMPs and Measures

A temporary sedimentation basin of approximately 40,000 sq.ft. (3,600 cf per acre for 11 acres per 1.4.14 Basin Design (1) pg. 1-104)will be constructed at the general site of the permanent BMP where the runoff leaves the property. This temporary feature will be constructed immediately and should trap all sediments that might wash off the site due to construction activities. In addition, silt fences will be installed along the entire east boundary of the property prior to any clearing and grubbing. Two temporary berms will will divert and separate flows.. The temporary sedimentation basin should provide for adequate removal of sediments produced during construction.

TNRCC 0602 – ATTACHMENT "F"

STRUCTURES PRACTICES

Structural practices for the temporary filtration of storm water runoff from this site include the erection of silt fences along one property line and below another upslope area of regulated activity that will be a separate, initial phase of the project. Stabilized construction entrances are strategically placed to afford easy access to the two phases of the project. Diversion berms (2' compacted soil) are used to keep runoff from leaving the site before being treated or before the site is completely regraded to prevent this from happening in the post development condition. A smaller, mid-site diversion berm will be used to separate flows to be treated and those not required to be treated.

Attachment G

Drainage Area Map

See Plan Sheet C-4.

TJRCC 0602

ATTACHMENT G

DRAINAGE AREA MAP

AREAS

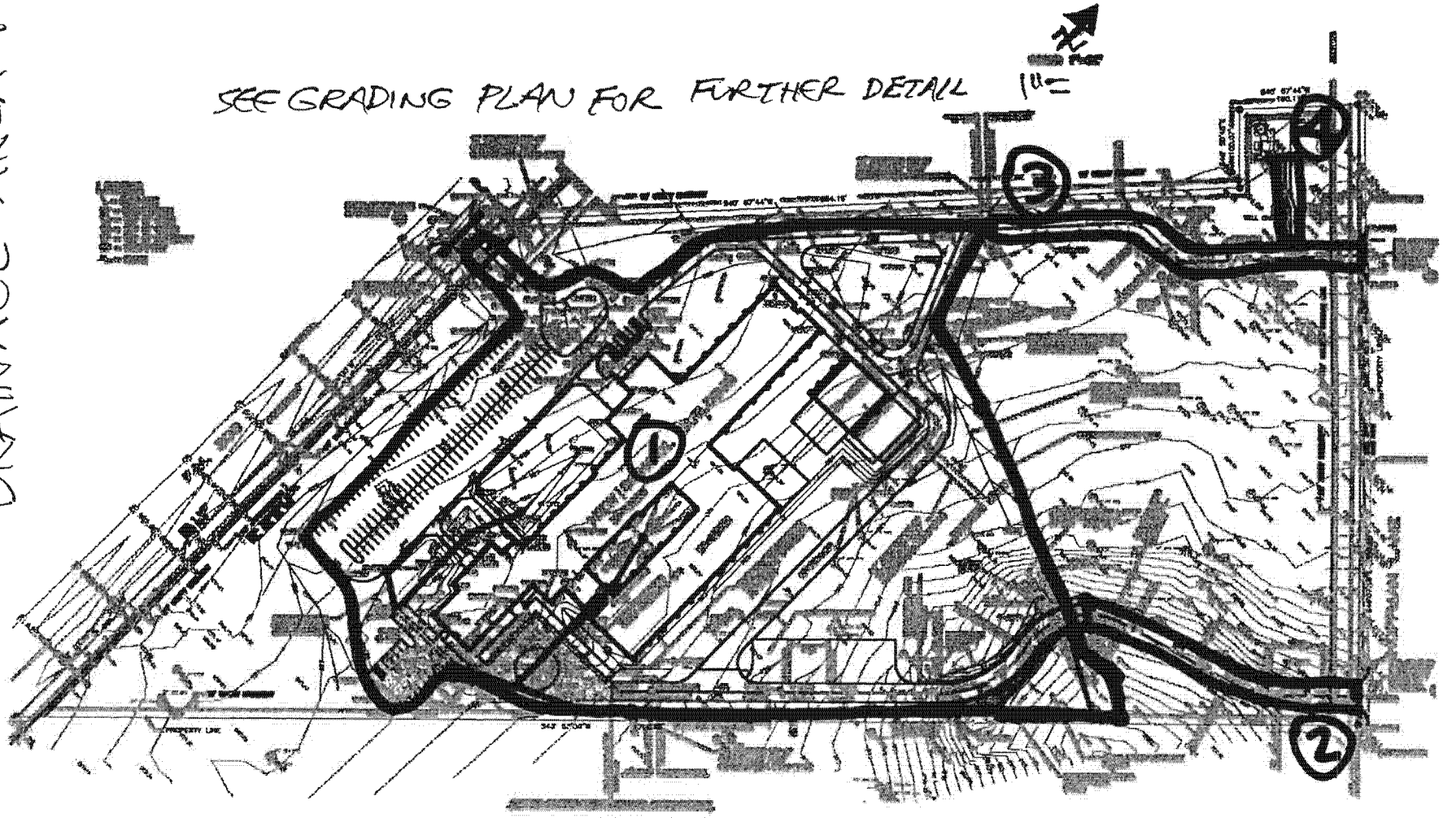
DA 1 10.83 ac.

DA 2 0.20 ac.

DA 3 0.29 ac.

DA 4 0.03 ac.

SEE GRADING PLAN FOR FURTHER DETAIL 1"=



TNRCC 0602 – ATTACHMENT "H"

TEMPORARY SEDIMENT POND PLANS

See full-size plans in pocket folder at the end of this section.

TNRCC 0602 - ATTACHMENT "I"

TEMPORARY BMP INSPECTION AND MAINTENANCE

Temporary BMP's will be inspected daily and any irregularities will be corrected immediately. A log will be kept of the inspections and any repair/maintenance activities shall be noted in the daily log.

TNRCC 0602 - ATTACHMENT "J"

INTERIM AND PERMANENT SOIL STABILIZATION

The grass surface of the vegetative strip shall be planted as soon in the construction process as realistic for the survival of the grass. The landscaped areas will be planted with specified plant towards the end of the construction, when potential damage to same will be minimal. The silt fence along the south property line shall not removed until the grass in the vegetative strip is fully established and growing.

SITE DESCRIPTION

PROJECT LIMITS: Approximately 21 acres of land, located in Comal County, consisting of the entirety of lot 16 of the Lost Canyon Subdivision, Unit Two. The property is abutted by F.M. 306 on the west and Hoffman Lane on the north.

PROJECT DESCRIPTION: The construction of a elementary school site consisting of grading, base, surfacing, pavement markings, drainage and utilities.

MAJOR SOIL DISTURBING ACTIVITIES: Soil disturbing activities will include, but not limited to, the grading, excavation and embankment for the school site; the placement of utilities; drainage; erosion and sediment controls; and topsoil placement for seeding as shown on the plans.

TOTAL PROJECT AREA: 21.3 Acres

TOTAL AREA TO BE DISTURBED: 13.3 Acres

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.65

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: Existing soil is predominantly light brown clay (CL) and tan clayey sand with approximately 5% vegetative cover. Remaining area consists primarily of brush and rock.

NAME OF RECEIVING WATERS: A natural drainage way located at the northeast end of the project will receive all 21.3 acres of storm water runoff. Both flow into tributaries of Alligator Creek which ultimately flows into Geronimo Creek.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ___ TEMPORARY SEEDING
- X PERMANENT PLANTING, SODDING, OR SEEDING
- ___ MULCHING
- ___ SOIL RETENTION BLANKET
- ___ BUFFER ZONES
- X PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume and do within 21 days.

STRUCTURAL PRACTICES:

- X SILT FENCES
- ___ HAY BALES
- X ROCK BERMS
- X DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ___ DIVERSION DIKE AND SWALE COMBINATIONS
- ___ PIPE SLOPE DRAINS
- ___ PAVED FLUMES
- X ROCK BEDDING AT CONSTRUCTION EXIT
- ___ TIMBER MATTING AT CONSTRUCTION EXIT
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS
- X SEDIMENT BASINS
- ___ STORM INLET SEDIMENT TRAP
- X STONE OUTLET STRUCTURES
- X CURBS
- X STORM SEWERS
- ___ VELOCITY CONTROL DEVICES

OTHER: ___

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

The order of activities will be as follows:

1. Install Sediment Control (Silt) Fence and Rock Filter Dam at the northwest portion of the site

2. Perform Phase I of the construction activities, the water system infrastructure.

3. Install the permanent berm to the north of the main site, and the small temporary diversion berm at the east, low end of the permanent berm.

4. Install southeast property line Silt Fence and Rock Filter Dam.

5. Install the downstream 650 LF +/- of the underground storm drainage system, which is near the southeast property line. Suitably cap the pipe temporarily to prevent soil from clogging the pipe.

6. Install the temporary diversion berm along the southeast property line.

7. Install the Temporary Sediment Basin at the low end of the site, constructing the identified portion of the permanent earthen berm to be used as part of this temporary control.

8. Begin major site construction activities, including underground utilities, construction of buildings, roads, and parking.

9. Place Temporary Inlet Protection immediately following the installation of the grate and curb inlets for the underground storm sewer system.

10. Construct the Permanent Sedimentation and Filtration Basin along with the associated culverts and adjacent roadway. Simultaneously remove the Temporary Sediment Basin. Ensure the items in #4 are still in place during this activity.

11. When construction activity and soil stabilization is complete (at least 90% vegetative cover) to the satisfaction of the owner and the engineer, remove temporary structural controls and restore any vegetation removed during this process.

STORM WATER MANAGEMENT: Storm water will be both surface and storm sewer pipe drainage generally north along south property line to natural flow.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: An inspection will be performed by an owner specified inspector every week as well as after every half inch or more of rain (as recorded on a non-freezing rain gauge to be located at the Project Site). An inspection and Maintenance Report will be made per each Inspection. Based on the inspection results, the controls shall be revised per the inspection report.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation, and the trash will be hauled to a local dump. No construction waste material will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalts products, Chemical additives for soil stabilization, or Concrete curing compounds and additives. In the event of a hazardous material spill, the district Spill Coordinator and the emergency response teams shall be contacted immediately.

SANITARY WASTE: All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.

OFFSITE VEHICLE TRACKING:

- X HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- X EXCESS DIRT ON ROAD REMOVED DAILY
- X STABILIZED CONSTRUCTION ENTRANCE

OTHER: Stabilized construction exits shall be installed at all points of ingress & egress to the site, including material and storage areas.

REMARKS: Disposal areas, stockpiles and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed.

Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.

All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY
1210 ARION PARKWAY, SUITE 100 210-499-5082 SAN ANTONIO, TEXAS

NOTES

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COYLE ENGINEERING INC.
3209 W 10 WEST SUITE B / BOERNE, TEXAS / 78006
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STATE OF TEXAS ROBERT D. LOWRY 74492 REGISTERED PROFESSIONAL ENGINEER
3-8-00

HOFFMANN LANE ELEMENTARY SCHOOL
COMAL I.S.D.
COMAL COUNTY, TEXAS

DESIGNED	RDL
DRAWN	RTS
CHECKED	RDL
DATE	3/8/000

REVISIONS

SHEET TITLE
STORM WATER POLLUTION PREVENTION PLAN NOTES

SHEET
C1
OF 5

FILE NAME: WPAP1.dwg

SCALE: 1" = 50'

STABILIZED CONSTRUCTION EXIT (TYPE 1) – LOCATION TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR

EPA NPDES STORM WATER PROGRAM SIGN TO BE POSTED CONSPICUOUSLY AT THE PROJECT ENTRANCE.

10' UTILITY EASEMENT

S40° 57'44"W 934.16'

WATER SYSTEM PROJECT AREA

S40° 57'44"W 150.11'

S46° 50'45"E 100.07'

WELL HOUSE

WELL CASING

STABILIZED CONSTRUCTION EXIT (TYPE 1) – LOCATION TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR TO BE INSTALLED FOR WATER SYSTEM WORK AND SUBSEQUENT WORK (IF NECESSARY)

ROCK FILTER DAM (TYPE 2)

PARENT DROP-OFF & PICK-UP

TEMPORARY SEDIMENT CONTROL FENCE (TY 1 – REINFORCED)

F.M. 306

N02° 24'00"W 577.58'

25' BUILDING SETBACK LINE

15' SOUTHWESTERN BELL TELEPHONE ESMT. VOL. 105, PG. 122

NEW SCHOOL BUILDING

COURTYARD

PERMANENT BERM

25' BUILDING SETBACK LINE

20' UTILITY EASEMENT

S46° 50'45"E 444.86'

HOFFMANN LANE

S46°07'19"E 350.50'

TEMPORARY EROSION CONTROL BERM

GRAVEL FILTER BAGS OR SEDIMENT CONTROL FENCE (TY 1)

TEMPORARY SEDIMENT CONTROL FENCE (TY 1 – REINFORCED)

HORZ. 18" CONC. OUTLET PIPE & 18" CONC. PIPE RISER WITH TRASH RACK & ANTI-VORTEX DEVICE

906.5

907.5

35 LF EMERGENCY SPILLWAY @ 1' DEPTH

TEMPORARY SEDIMENTATION BASIN (VOLUME = 40,000 CF)

N02° 07'23"W 308.69'

20' UTILITY EASEMENT

GRAVEL FILTER BAGS OR SEDIMENT CONTROL FENCE (TY 1)

FUTURE BUS PARKING

INSTALL DOWNSTREAM ±660 LF U.G. STORM DRAINAGE PRIOR TO CONSTRUCTING BERM

25' FIRE LANE

BUS ACCESS & SERVICE DRIVE

10' UTILITY EASEMENT

375'

S43° 53'50"W 1700.85'

TEMPORARY EROSION CONTROL BERM

TEMPORARY SEDIMENT CONTROL FENCE (TY 1 – REINFORCED)

907.5

906.5

907.5

908.9

CONSTRUCT THIS ±110 LF PART OF EARTHEN BERM FOR PERMANENT SEDIMENTATION POND

ROCK FILTER DAM (TYPE 3)

PROVIDE STONE RIPRAP TxDOT ITEM

TEMPORARY SEDIMENT CONTROL FENCE (TY 1 – REINFORCED)

ROCK FILTER DAM (TYPE 2)

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR FILING WITH EPA, A NOTICE OF INTENT (NOI)AND A NOTICE OF TERMINATION (NOT)

NOTES

Alianz A, LLC
An Alliance of Environmental Resource Professionals
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STATE OF TEXAS
ROBERT D. LEONARD
74462
LICENSED PROFESSIONAL ENGINEER
3-6-00

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COMAL I.S.D.
COMAL COUNTY, TEXAS

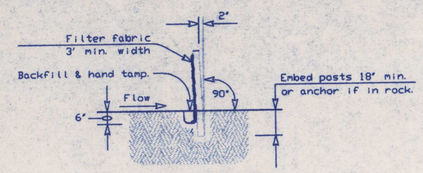
DESIGNED	RDL
DRAWN	RTB
CHECKED	RDL
DATE	3/8/00

REVISIONS

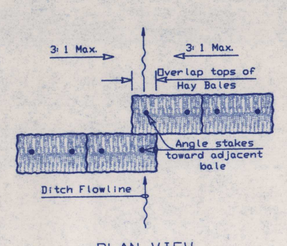
SHEET TITLE
TEMPORARY EROSION CONTROL PLAN

SHEET
C2
OF 5

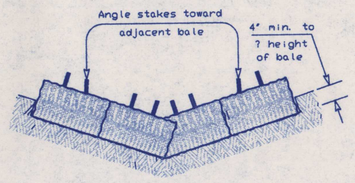
FILE NAME= WPAP2.dwg



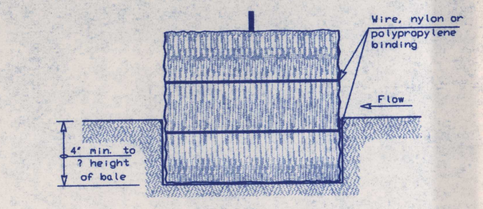
SECTION A-A



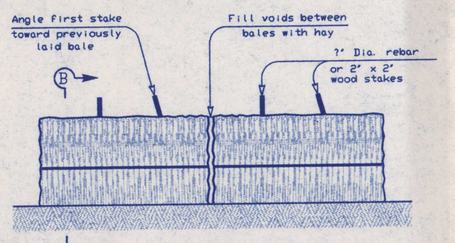
PLAN VIEW



PROFILE VIEW



SECTION B-B



BALED HAY FOR EROSION CONTROL

(BH)

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

PLAN SHEET LEGEND

Sediment Control Fence — (SCF)

GENERAL NOTES

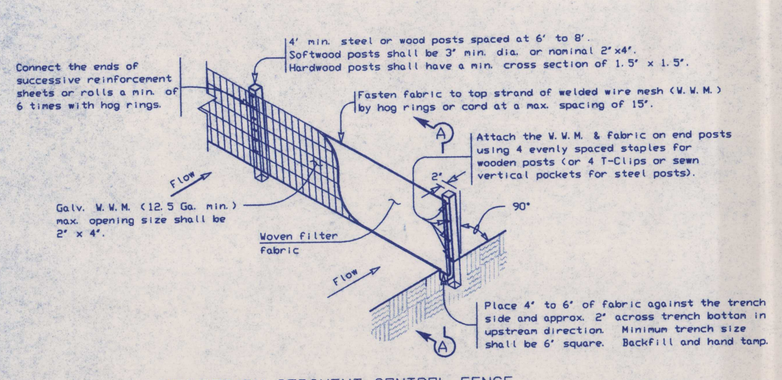
1. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLANS SHEET LEGEND

Baled Hay — (BH)

GENERAL NOTES

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetable matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible ⅓ the height of the bale.
4. Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
5. Hay bales shall be securely anchored in place with 1" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



TEMPORARY SEDIMENT CONTROL FENCE

(SCF)

BALED HAY USAGE GUIDELINES

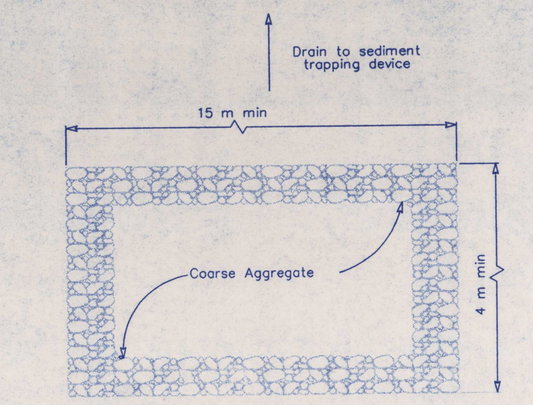
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT² of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than ½ acre.

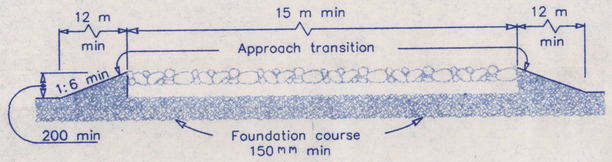
For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sidesloges should be graded as flat as possible to maximize the drainage FLowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.



PLAN

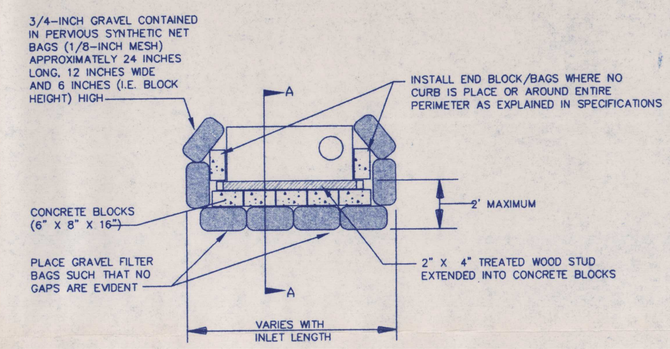


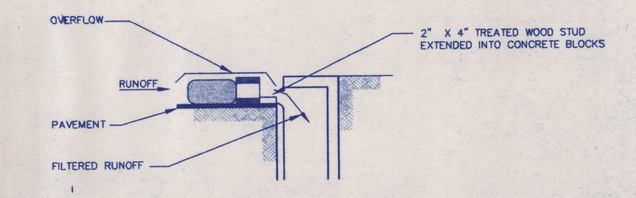
PROFILE

CONSTRUCTION EXIT (TYPE 1)

GENERAL NOTES

1. The length of the type 1 construction exit shall be as indicated on the plans but not less than 15 meters.
2. The coarse aggregate should be open graded with a size of 50 mm to 200 mm
3. The approach transitions should be no steeper than 1 6 : (vertical horizontal) and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base bituminous concrete Portland cement concrete or other material as approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



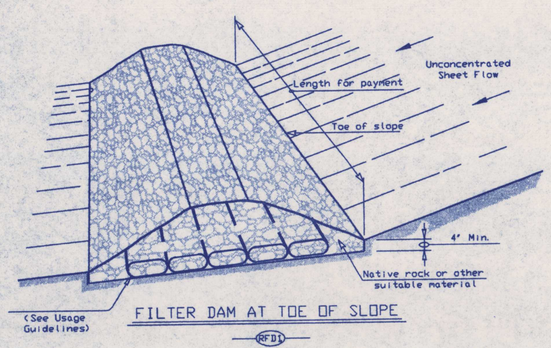


CROSS-SECTION A-A

NOTE:
GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND

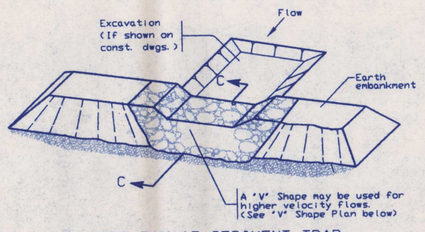
CURB INLET GRAVEL FILTER

N.T.S.



FILTER DAM AT TOE OF SLOPE

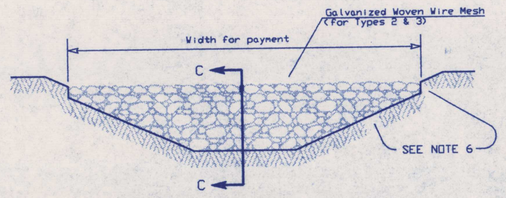
(FD) TYPE 1



FILTER DAM AT SEDIMENT TRAP

(FD1) OR (FD2) OR (FD3)

TYPE 1 OR TYPE 2



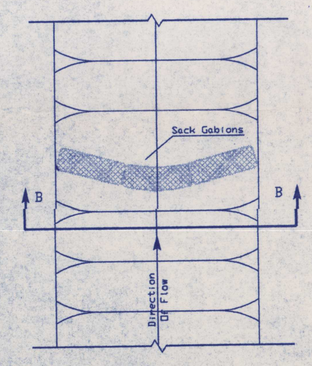
FILTER DAM AT CHANNEL SECTIONS

(FD1) OR (FD2) OR (FD3)

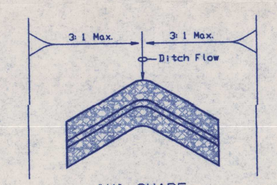
TYPE 1 OR TYPE 2

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, Filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. In stream use the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be stacked down with 1" dia. rebar stakes.
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



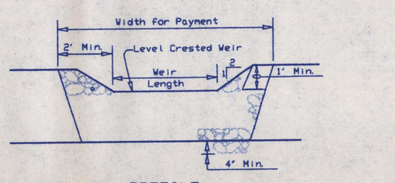
PLAN VIEW



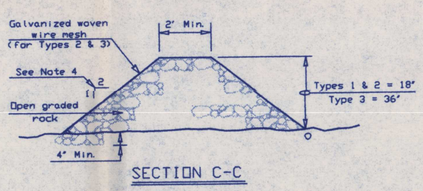
'V' SHAPE

(Plan View)

SECTION B-B



PROFILE



SECTION C-C

PLANS SHEET LEGEND

Type 1 Rock Filter Dam — (RFD1)
Type 2 Rock Filter Dam — (RFD2)
Type 3 Rock Filter Dam — (RFD3)

ROCK FILTER DAM USAGE GUIDELINES

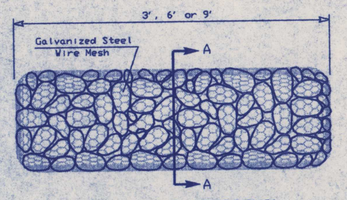
Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recomended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approx. 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) For better Filtering efficiency of low flows if called for on the plans or directed by the Engineer.

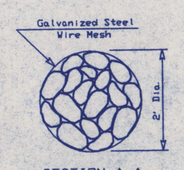
Type 2 (18" high with wire mesh): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh): Type 3 may be used in stream Flow and should be secured to the stream bed.

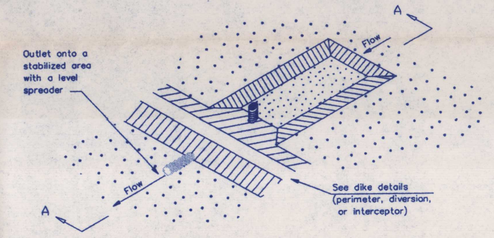
Type 4 (Sack gabions):) Type 4 May be used in ditches and smaller channels to form an erosion control dam.



TYPE 4 (SACK GABIONS)

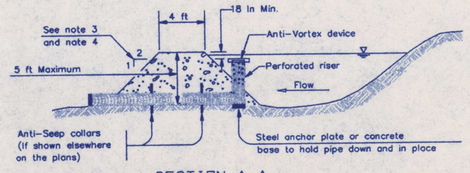


SECTION A-A

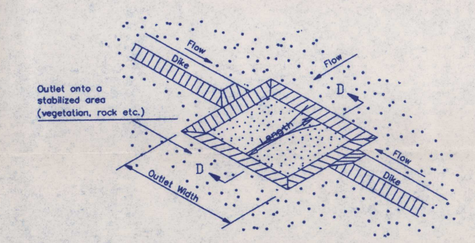


SEDIMENT BASIN AND/OR TRAP WITH PIPE OUTLET

(ST/PO)

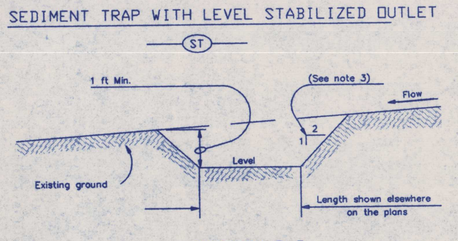


SECTION A-A

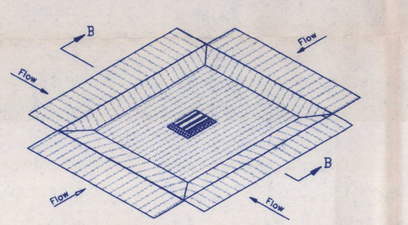


SEDIMENT TRAP WITH LEVEL STABILIZED OUTLET

(ST)

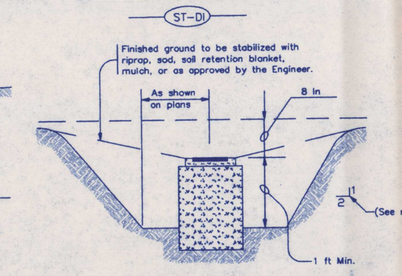


SECTION D-D



DROP INLET SEDIMENT TRAP

(ST-DI)



SECTION B-B

SEDIMENT BASIN & TRAP USAGE GUIDELINES

A sediment basin and/or trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

Basins: The drainage area for a sediment basin should not exceed 100 acres. The basin capacity shall be at least 1800 CF/Acre of drainage area (0.5" over the drainage area). If the disturbed area draining to the basin is larger than 10 acres, the basin capacity should be 3600 CF/Acre (1.0" over the drainage area).

The basin should have a 40 hour draw-down time with an emergency spillway. The spillway may be designed to pass the peak rate of runoff from a 25 year frequency storm. The 100 year storm should be investigated to consider possible flooding impacts.

The entrance into the basin should be protected from erosion. The basin should be cleaned when the capacity has been reduced by 1/3.

Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

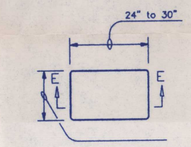
Sediment traps should be placed in the following locations:
1. Within drainage ditches spaced @ 500' onCenter
2. Immediately preceding ditch inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way

The trap outlet may either be through a perforated riser and pipe assembly designed to achieve a 40 hour draw-down time or over a level stabilized area (vegetation, rock, etc.).

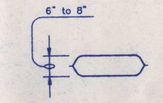
The trap should be cleaned when the capacity has been reduced by ⅓ or the sediment has accumulated to a depth of 1', whichever is less.

PLANS SHEET LEGEND

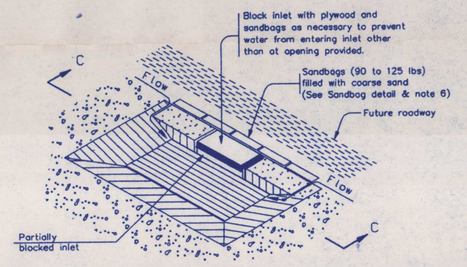
Sediment Basin and/or Trap with Pipe Outlet — (ST/PO)
Drop Inlet Sediment Trap — (ST-DI)
Curb Inlet Sediment Trap — (ST-CI)
Sediment Trap with Level Stabilized Outlet — (ST)



SANDBAG DETAIL

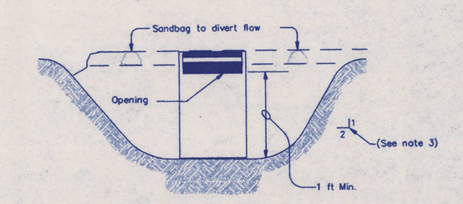


SECTION E-E



CURB INLET SEDIMENT TRAP

(ST-CI)



SECTION C-C

GENERAL NOTES

1. Pipe outlet material shall conform to the item "Pipe Underdrains" or as accepted by the Engineer.
2. All pipe connections shall be watertight.
3. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter. Protect the traveling public from inlet stacks within the clear zone.
4. Sediment basins shall have side slopes of 3:1 or flatter.
5. The dimensions and limits of excavation for sediment basins and traps will be as shown elsewhere on the plans.
6. The sandbag material shall be made of polypropylene, polyethylene or polyamide woven fabric, min. unit weight 4 ounces/SY, Mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

NOTE: DISREGARD ALL NOTES PERTAINING TO PAVEMENT.
NO SEPARATE PAYMENT WILL BE MADE FOR SW3P
STRUCTURES. INCLUDE COST IN LUMP SUM BID FOR PROJECT.

NOTES

Alianz A, LLC
An Alliance of Environmental Resource Professionals
Schlund, Texas
P.O. Box 267
Phone: (830) 980-2193 Fax: (830) 980-3197

ROBERT D. LEONARD 74492 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
3-8-00

COYLE ENGINEERING INC.
3330 W HWY 90 WEST SUITE B / BOERNE, TEXAS / 78006
PHONE: (830) 755-8368 / FAX: (830) 755-8367

HOFFMANN LANE ELEMENTARY SCHOOL
COMAL I.S.D.
COMAL COUNTY, TEXAS

DESIGNED	RDL
DRAWN	RTS
CHECKED	RDL
DATE	3/8/00

REVISIONS

SHEET TITLE
TEMPORARY EROSION CONTROL DETAILS

SHEET
C3
OF 5

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY
1210 ARION PARKWAY, SUITE 100 210-499-5082 SAN ANTONIO, TEXAS

FILE NAME: WPAPPS.dgn

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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

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

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

2. X 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.

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

   __ A technical guidance other than the TNRCC 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. X 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.

   X 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.

__ **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.

X 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.**

X 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.

__ 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 .

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

X 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.

__ 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.

8. X **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. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

9. X 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.

X 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.

___ **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. X **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. Design Calculations, TNRCC 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. X **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. X The TNRCC 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.

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

13. X **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. 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.

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

14. X 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. X 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 TNRCC review and executive director approval. The application was prepared by:

Comal ISD(Applicant)/Russell Masters(Agent)
Print Name of Applicant/Owner/Agent

Signature of Applicant/Owner/Agent Date 3/8/2000

TNRCC 0600 – ATTACHMENT "B"

UPGRADIENT STORMWATER

There is minimal upgradient storm water that passes through this site. About 100 feet north of the site, there is a ridge that forces runoff to flow in the other direction. As shown on our grading plan, runoff is diverted from the on-site area that would flow into the main sedimentation and filtration basins. This runoff evntually sheet flows across the portion of the site that remains undeveloped (no impervious cover) and into a bar ditch at the southern edge of Hoffmann Lane.

TNRCC 0600 – ATTACHMENT "C"

BMP'S FOR ON-SITE STORM WATER

This site has two distinct drainage areas, and four areas that will be treated separately. The main area is an 11-acre area that drains all parking, roofs, other pavement and the majority of the roadways. While much of this could be treated with vegetative filter strips (roads, metal roof runoff), there is not enough vegetative surface area at the natural down slope area of the site. Thus, we placed separate sedimentation and filtration basins at a very appropriate location downstream of the site. The majority of the runoff flows through a box culvert, some of the runoff sheet flows into the basin, and a larger portion, including the main parking area, enters the pond through an underground storm drainage system. When the head from the box culvert builds to a slightly higher level on the upstream side, this represents the total required volume in the sedimentation chamber. Any additional runoff will pass over a weir before going into the sediment pond, making the pond off-line. There is also an emergency weir in the sedimentation pond. The runoff in the pond then flows through a series of PVC risers into the filtration basin, and exits through a PVC outlet at the low point of the site. Because of the steep slopes in this area of the site, this is a gravity system which should function well.

The three other drainage areas represent roadways that are treated by vegetative filter strips immediately downstream of the roads. Because of the slight slopes and open, undeveloped area, the strips are an ideal way to treat this small amount of runoff. This prevents having to collect a significant additional amount of runoff in the basin system which already encompasses most of the area downstream of the bend in the southeast entrance road.

Attachment D

BMPs for Surface Streams

See Permanent BMPs construction drawings.

TNRCC 0600 – ATTACHMENT "F"

CONSTRUCTION PLANS

See full size plans at the end of this section.

TNRCC 0600 - ATTACHMENT "G"

INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN

The owner of the project will hire a suitable individual or company familiar with the requirements of the TNRCC for development over the aquifer.

The owner will work with this individual or company to ensure that inspections of these permanent BMP's are made at least once a month and after each significant rainfall event.

The sand filter surface will be cleaned no less that four times in each calendar year, and as often as necessary to ensure that the pond drains entirely in the allotted 48 hour time period. Each time that the filter is inspected, the operation of the pump shall be checked by putting water in the wet well and insuring that the pump turns off and on properly.

Anything noted to be in need of repair shall be repaired in a suitable manner immediately. If there need of retro-fit or extensive repair, the design engineer shall be hired to determine the lengths of retro-fit or repair needed.

All of the general activities listed here shall be documented in written form and kept on file at the premises. Copies of documentation may be kept at other locations as seen appropriate by the parties involved.

Signed: _____ Date: 3-8-2000
Professional Engineer



Signed: _____ Date: 3-8-2000
~~Owner~~ Agent

TNRCC 0600 - ATTACHMENT "I"

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

The erection of temporary BMP's, the construction of the proposed permanent BMP's and the maintenance of these permanent facilities as described in detail in this Water Pollution Abatement Plan, are the measures that are proposed to avoid and minimize surface stream contamination off-site. There are no surface streams on or near the property.

Culvert Designer/Analyzer Report
Hoffman2

Design:Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	906.25 ft	Storm Event	Design
Computed Headwater Elevation	906.03 ft	Discharge	30.00 cfs
Headwater Depth/ Height	0.96	Tailwater Elevation	903.00 ft
Inlet Control HW Elev	905.82 ft	Control Type	Outlet Control
Outlet Control HW Elev	906.03 ft		

Grades			
Upstream Invert	903.15 ft	Downstream Invert	902.50 ft
Length	50.00 ft	Constructed Slope	0.013000 ft/ft

Hydraulic Profile			
Profile	S2	Depth, Downstream	1.40 ft
Slope Type	Steep	Normal Depth	1.31 ft
Flow Regime	Supercritical	Critical Depth	1.77 ft
Velocity Downstream	9.30 ft/s	Critical Slope	0.004683 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	906.03 ft	Upstream Velocity Head	0.74 ft
Ke	0.50	Entrance Loss	0.37 ft

Inlet Control Properties			
Inlet Control HW Elev	905.82 ft	Flow Control	Unsubmerged
Inlet Type	Square edge w/headwall	Area Full	7.1 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Culvert Designer/Analyzer Report
Hoffman2

Peak Discharge Method: User-Specified					
Design Discharge	30.00	cfs	Check Discharge	30.00	cfs

Grades Model: Inverts					
Invert Upstream	903.15	ft	Invert Downstream	902.50	ft
Length	50.00	ft	Slope	0.013000	ft/ft
Drop	0.65	ft			

Headwater Model: Maximum Allowable HW		
Headwater Elevation	906.25	ft

Tailwater Conditions: Constant Tailwater		
Tailwater Elevation	903.00	ft

	Name	Desc	Discharge	HW Elev	Velocity
x	Trial-1	1-36 inch Circular	30.00 cfs	906.03 ft	9.30 ft/s

© Haestad Methods, Inc.
Morrison Knudsen
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Culvert Design Report
Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A ft	Storm Event	Design
Computed Headwater Elevation	907.07 ft	Discharge	53.20 cfs
Headwater Depth/ Height	1.02	Tailwater Elevation	906.50 ft
Inlet Control HW Elev	906.79 ft	Control Type	Outlet Control
Outlet Control HW Elev	907.07 ft		

Grades			
Upstream Invert	904.00 ft	Downstream Invert	903.25 ft
Length	44.00 ft	Constructed Slope	0.017045 ft/ft

Hydraulic Profile			
Profile	CompositePressureS1	Depth, Downstream	3.25 ft
Slope Type	N/A	Normal Depth	1.11 ft
Flow Regime	Subcritical	Critical Depth	1.76 ft
Velocity Downstream	4.43 ft/s	Critical Slope	0.004737 ft/ft

Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	4.00 ft
Section Size	4 x 3 ft	Rise	3.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	907.07 ft	Upstream Velocity Head	0.47 ft
Ke	0.40	Entrance Loss	0.19 ft

Inlet Control Properties			
Inlet Control HW Elev	906.79 ft	Flow Control	Unsubmerged
Inlet Type	45 ° wingwall flares - offset	Area Full	12.0 ft²
K	0.49700	HDS 5 Chart	13
M	0.66700	HDS 5 Scale	1
C	0.03020	Equation Form	2
Y	0.83500		

No - Pulses - Dalworth
95/LF Delivered
For - appx 50 LF

Stormwater Design Manager

Hoffmann Lane/FM 306 Elementary School - Main Site Evaluation Worksheet

SEDIMENTATION / SAND FILTRATION BASIN FOR MAIN SITE - DRAINAGE AREA 1

Assumptions:	
Raw Land TSS	80
Developed Land TSS	170
Rainfall	33
Contributing Area (Acres)	10.83
Impervious Cover (Acres)	0
Runoff Coefficient (Rv)	0.03
Previously Undeveloped (Au)	10.83
Developed (Ad)	5.46

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		**50%**	
	Lr=	194	Equation 3.1
	Rvr =	0.03	(100% Undeveloped)
	Lm=	4586	Equation 3.4
	Rvm =	0.33	Equation 3.2
Pre Development Load (Raw)		**194**	
Post Development Load		**4586**	
Required Reduction (lbs)		**3513**	

Sand Filtration Calculations:

Sand Filtration Load Reduction	0.86	Fraction
Remaining Load		
Fraction of Site Treated	100%	
Runoff Depth	0.49	From figure 3.8
Water Quality Volume (cu.ft.)	19,263	
Total WQ Volume (with sediment)	**23,116**	

Filter Design

Filter Surface Area (sq.ft.)	**1,238**
Average Water Height (ft.)	2.5

Basin Sizing

Square Dimension (Each side ft.)	**68**
Depth (ft.)	5

Stormwater Design Manager

Hoffmann Lane/FM 306 Elementary School - Main Site Evaluation Worksheet

VEGETATIVE FILTER STRIP FOR SOUTH ACCESS ROAD - DRAINAGE AREA 2

Assumptions:	
Raw Land TSS	80
Developed Land TSS	170
Rainfall	33
Contributing Area (Acres)	0.2
Impervious Cover (Acres)	0
Runoff Coefficient (Rv)	0.03
Previously Undeveloped (Au)	0.2
Developed (Ad)	0.2

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		**100%**	
	Lr=	4	Equation 3.1
	Rvr =	0.03	(100% Undeveloped)
	Lm=	229	Equation 3.4
	Rvm =	0.90	Equation 3.2
Pre Development Load (Raw)		**4**	
Post Development Load		**229**	
Required Reduction (lbs)		**180**	

Vegetated Strip Calculations:

Vegetated Strip Removed (lbs)	180	lbs	Required Area % 0.93
Strip width	292	ft	Require Area to be Treated 0.19
Fraction of Site Treated	0.93		Required Treatment Area 0.11
Length of Strip Required	**17**	**ft**	

Stormwater Design Manager

Hoffmann Lane/FM 306 Elementary School - Main Site Evaluation Worksheet

VEGETATIVE FILTER STRIP FOR NORTH ACCESS ROAD - DRAINAGE AREA 3

Assumptions:	
Raw Land TSS	80
Developed Land TSS	170
Rainfall	33
Contributing Area (Acres)	0.29
Impervious Cover (Acres)	0
Runoff Coefficient (Rv)	0.03
Previously Undeveloped (Au)	0.29
Developed (Ad)	0.29

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		**100%**	
	Lr=	5	Equation 3.1
	Rvr =	0.03	(100% Undeveloped)
	Lm=	332	Equation 3.4
	Rvm =	0.90	Equation 3.2
Pre Development Load (Raw)		**5**	
Post Development Load		**332**	
Required Reduction (lbs)		**262**	

Vegetated Strip Calculations:

Vegetated Strip Removed (lbs)	262 lbs	Required Area %	0.93
Strip width	360 ft	Require Area to be Treated	0.27
Fraction of Site Treated	0.93	Required Treatment Area	0.16
Length of Strip Required	**20 ft**		

Stormwater Design Manager

Hoffmann Lane/FM 306 Elementary School - Main Site Evaluation Worksheet

VEGETATIVE FILTER STRIP FOR WATER SYSTEM ACCESS ROAD - DRAINAGE AREA 4

Assumptions:	
Raw Land TSS	80
Developed Land TSS	170
Rainfall	33
Contributing Area (Acres)	0.034
Impervious Cover (Acres)	0
Runoff Coefficient (Rv)	0.03
Previously Undeveloped (Au)	0.034
Developed (Ad)	0.034

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		**100%**	
	Lr=	1	Equation 3.1
	Rvr =	0.03	(100% Undeveloped)
	Lm=	39	Equation 3.4
	Rvm =	0.90	Equation 3.2
Pre Development Load (Raw)		**1**	
Post Development Load		**39**	
Required Reduction (lbs)		**31**	

Vegetated Strip Calculations:

Vegetated Strip Removed (lbs)	31 lbs	Required Area %	0.93
Strip width	90 ft	Require Area to be Treated	0.03
Fraction of Site Treated	0.93	Required Treatment Area	0.02
Length of Strip Required	**9 ft**		

USE 15 FT FOR A MINIMUM LENGTH

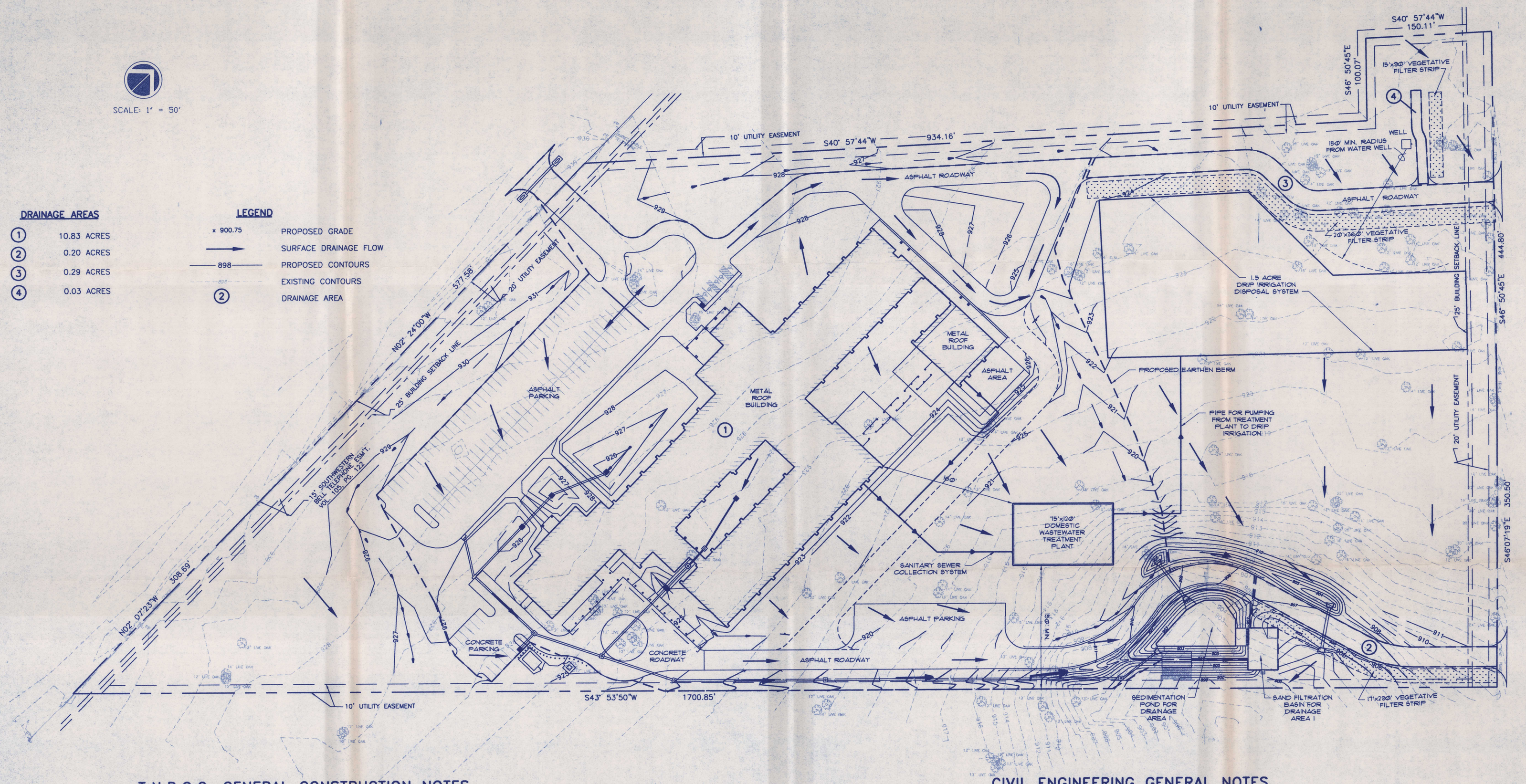
SCALE: 1" = 50'

DRAINAGE AREAS

(1)	10.83 ACRES
(2)	0.20 ACRES
(3)	0.29 ACRES
(4)	0.03 ACRES

LEGEND

x 900.75	PROPOSED GRADE
→	SURFACE DRAINAGE FLOW
898	PROPOSED CONTOURS
	EXISTING CONTOURS
(2)	DRAINAGE AREA



T.N.R.C.C. GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TNRCC 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 TNRCC 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 MUT BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TNRCC 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 TNRCC HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

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

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

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

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

8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORMWATER DISCHARGES (E.G., SCREENING OUTFALLS, PICKED UP DAILY).

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

10. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARY OR PERMANENTLY CEASE IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE. IN AREAS EXPERIENCING DROUGHTS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IS PRECLUDED BY SEASONAL ARID CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

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

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

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

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

AUSTIN REGIONAL OFFICE
1921 CEDAR BEND, SUITE 150
AUSTIN, TEXAS 78758-5336
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
140 HEIMER, SUITE 360
SAN ANTONIO, TEXAS 78232-5042
PHONE (210) 490-3096
FAX (210) 545-4329

TNRCC-0592 (Rev. 6/1/99)

CIVIL ENGINEERING GENERAL NOTES

1. ALL PHASES OF WORK UNDER THIS CONTRACT SHALL STRICTLY ADHERE TO THE REGULATIONS OF THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION, COMAL COUNTY, TEXAS, AND THE COMAL INDEPENDENT SCHOOL AS WELL AS OTHER ORDINANCES, SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.

2. FINAL DECISIONS OR JUDGMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE STANDARDS AND REGULATIONS SHALL BE MADE BY THE DIRECT THE ENGINEER, AS APPLICABLE.

3. CONTRACTOR WILL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.

4. THE CONTRACTOR IS SOLELY AND COMPLETE RESPONSIBLE FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND DEFEND, INDEMNIFY AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF *THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE* NEGLIGENCE OF THE OWNER OR ENGINEER.

5. VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.

6. "TNRCC" SHALL SIGNIFY THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. "TGM" SHALL SIGNIFY THE JUNE 1999 TECHNICAL GUIDANCE MANUAL, RG-340.

7. CONSTRUCTION OF THE PONDS ARE SUBJECT TO INSPECTIONS BY TNRCC REPRESENTATIVES. THEY SHALL NOT BE ACCEPTED BY THE OWNER UNTIL BOTH OF THESE ENTITIES ARE SATISFIED WITH THE INSTALLATION.

8. "TXDOT" SHALL SIGNIFY THE TEXAS DEPARTMENT OF TRANSPORTATION 1993 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES.

9. APPLY "PRIME COAT" (MC-30) AT A RATE OF 0.2 GAL/S.Y. MAXIMUM TO THE TOP OF THE FLEXIBLE BASE COURSE ON ACCESS DRIVES PRIOR TO THE PLACEMENT OF HOT MIX ASPHALTIC PAVEMENT.

10. "HOT MIX ASPHALTIC CONCRETE" (HMAC) PAVEMENT SHALL BE TYPE D ACCORDING TO TXDOT ITEM 340. PLACE THE HMAC ON DRY, COMPACTED BASE AND AT PROPER TEMPERATURES.

11. "FLEXIBLE BASE" SHALL BE TYPE A OR B, GRADE 1 OR 2, ACCORDING TO TXDOT ITEM 247. COMPACTED TO 95% OF MAXIMUM DRY DENSITY AT A MOISTURE CONTENT ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR) PROCEDURES. MAINTAIN WATER CONTENTS NEAR OPTIMUM TO PROMOTE COMPACTION. TEST BY ASTM D-2922 (NUCLEAR METHOD).

12. GRAVEL SHALL BE COMPOSED OF WELL-GRADED, WASHED RIVER GRAVEL, APPROVED BY THE ENGINEER, ONE HUNDRED (100) PERCENT PASSING A TWO-INCH SIEVE, AT LEAST NINETY-FIVE (95) PERCENT PASSING A ONE AND THREE-QUARTER INCH (1 3/4") SIEVE, AND AT LEAST NINETY PERCENT RETAINED ON A ONE-HALF INCH (1/2") SIEVE.

13. ALL GEOTEXTILE FABRICS AND CLAY LINERS SHALL MEET THE REQUIREMENTS OF THE TNRCC TGM, PAGE 3-32.

14. PROVIDE CLASS "A" CONCRETE ACCORDING TO TXDOT ITEM 421 WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. CONCRETE SHOULD HAVE 3 TO 5 PERCENT ENTRAINED AIR. CAST AND PLACE CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET FORTH BY THE AMERICAN CONCRETE INSTITUTE.

15. REINFORCING STEEL SHALL BE FROM NEW BILLET AND SHALL HAVE DEFORMATIONS CONFORMING TO ASTM A-615 AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

A-615, GRADE 40.....#3 BARS AND DOWELS.
A-185.....WELDED WIRE FABRIC.
A-615, GRADE 60.....ALL OTHER REINFORCING.

ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS, EXCEPT WHERE REFERRING TO CLEARANCE. USE PLASTIC BAR SUPPORTS (CHAIRS) TO HOLD REINFORCEMENT IN POSITION DURING CONCRETE PLACEMENT OPERATIONS. SUPPORT THE REINFORCING STEEL TO OBTAIN A MINIMUM OF 2.5 INCHES OF CONCRETE COVER.

16. CONSTRUCT SITE GRADING IMPROVEMENTS TO THE FOLLOWING ELEVATION TOLERANCES:

DRAINAGE FACILITIES.....+0.02 FOOT
GRADING/LANDSCAPING.....+0.16 FOOT

SHOULD ANY ELEVATIONS BE FOUND TO BE OUT OF LEVEL BEYOND THE STATED TOLERANCE AFTER CONTRACTOR'S OPERATIONS, RETURN AND CORRECT THE GRADING, REMOVE AND DISPOSE OF ALL EXCESS MATERIALS AT CONTRACTOR EXPENSE.

17. PROTECT TREES DURING CONSTRUCTION ACCORDING TO FIGURE 2-1 OF THE TNRCC TGM.

18. COVER THE SITE DISTURBED DURING CONSTRUCTION WITH LIVE GRASS BEFORE ACCEPTANCE. USE SOD AND HYDRAULICALLY MULCH WITH OVER SEED THAT WILL PROVIDE AT LEAST 90 PERCENT COVERAGE. DEMONSTRATE GROWTH AND COVERAGE THOUGHOUT ONE YEAR.

19. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION. UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.

20. REPAIR OR REPLACE ANY EXISTING OFF-SITE IMPROVEMENTS OR UTILITY REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.

21. POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM D-3034 FOR SDR 35. JOINTS SHALL BE ELASTOMERIC GASKET MATERIALS CONFORMING TO *ASTM D-3212. INSTALLATION SHALL CONFORM TO ASTM D-3921.*

NOTES

Alianz A, LLC
An Alliance of Environmental Resource Professionals
P.O. Box 207 Salmon, Texas
Phone: (936) 488-3192 / Fax: (936) 564-3197

STATE OF TEXAS
ROBERT D. LEONARD
71492
PROFESSIONAL ENGINEER
3-8-00

COYLE ENGINEERING INC.
3330 HWY 6 WEST SUITE B / ITASCA, TEXAS / 76055
PHONE: (254) 765-8266 / FAX: (254) 765-8267

HOFFMANN LANE
ELEMENTARY SCHOOL
COMAL I.S.D.
COMAL COUNTY, TEXAS

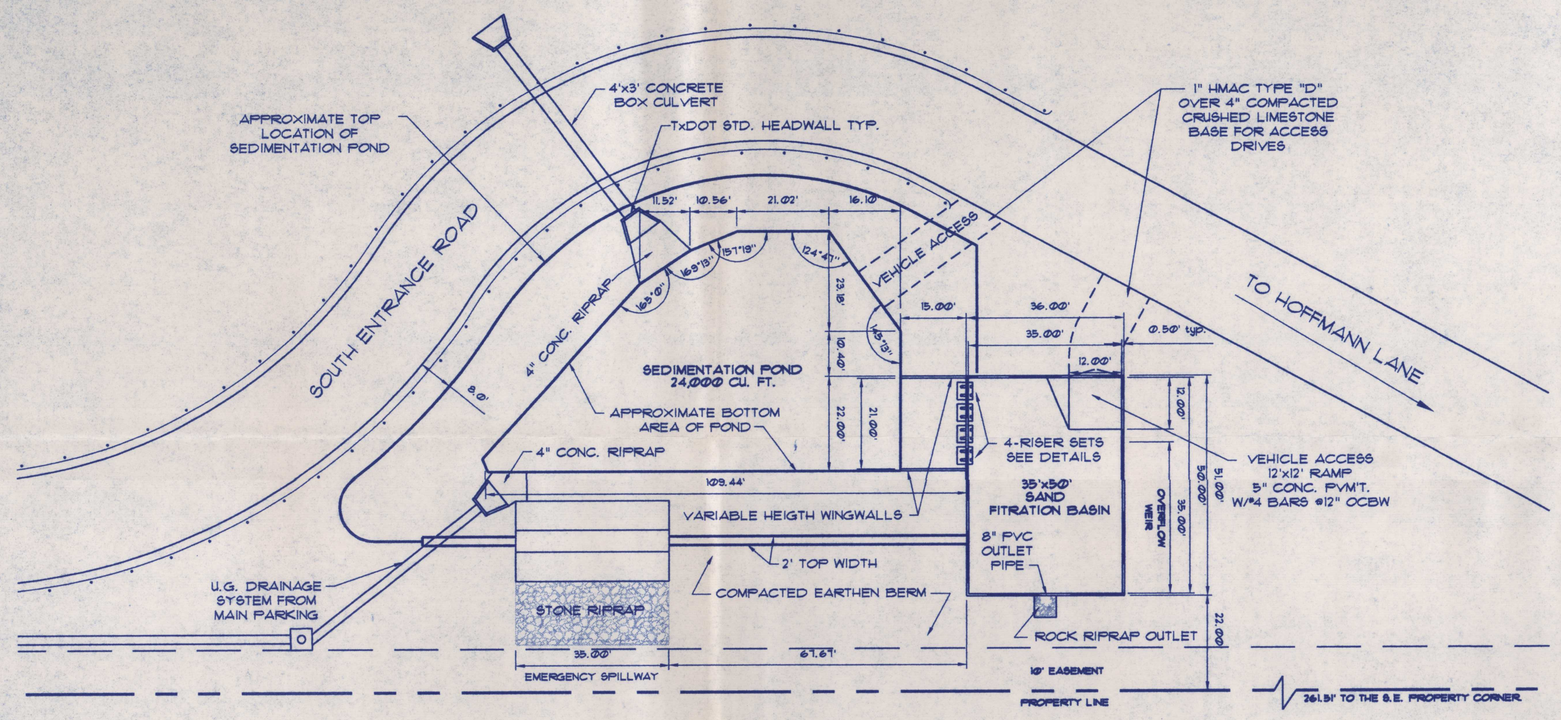
DESIGNED	WB/WG
DRAWN	RTB
CHECKED	RDL
DATE	RDL

REVISIONS

SHEET TITLE
PERMANENT EROSION CONTROL PLAN

SHEET
C4
OF 5

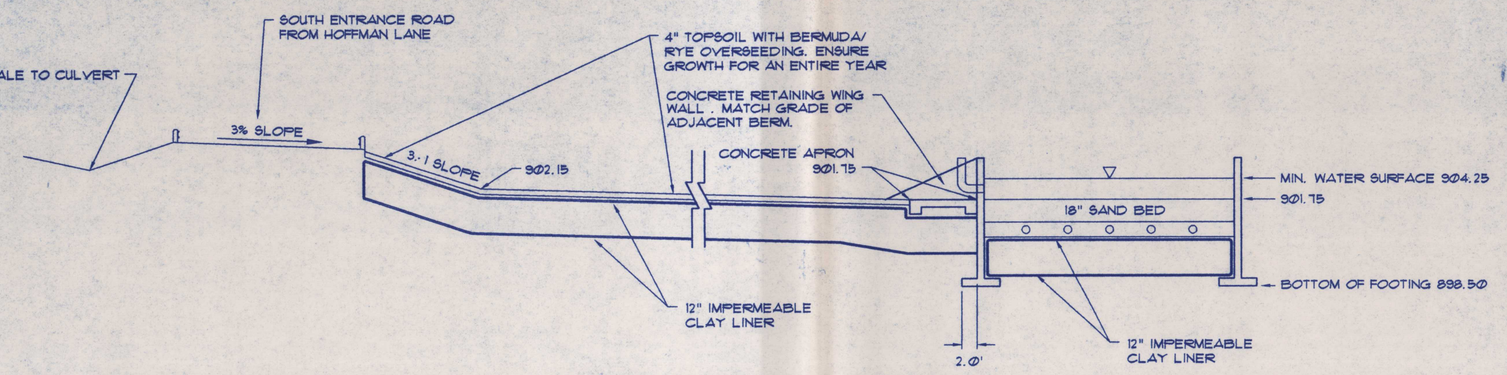
FILE NAME: HPJAP4.dwg



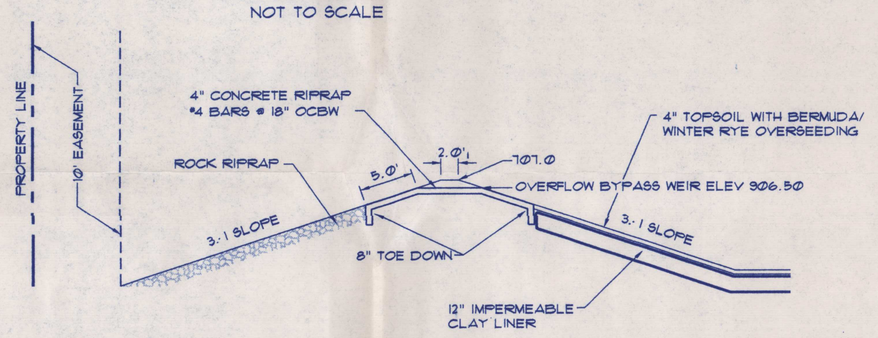
SEDIMENTATION/FILTRATION BASINS
DIMENSIONAL LAYOUT
SCALE: 1" = 20'

SEDIMENTATION/FILTRATION BASINS
GRADING PLAN
SCALE: 1" = 20'

FILE NAME: WP41P5.dwg



SECTION A - A
NOT TO SCALE



SECTION B - B
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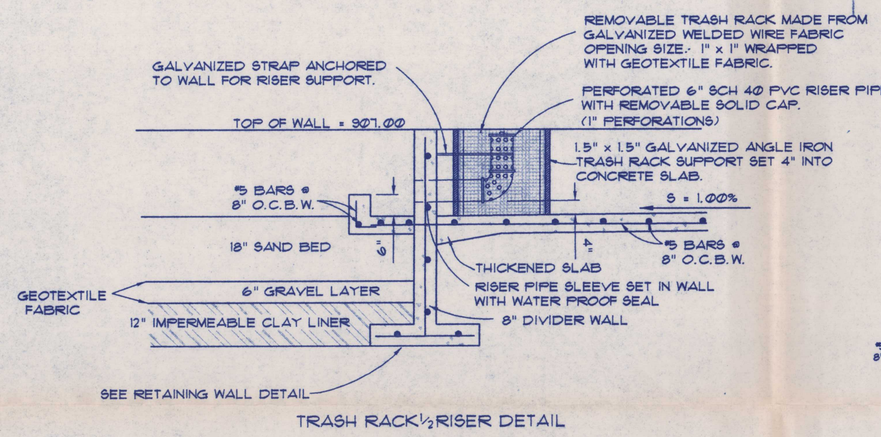
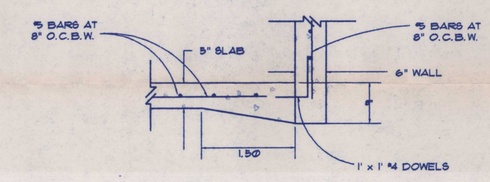
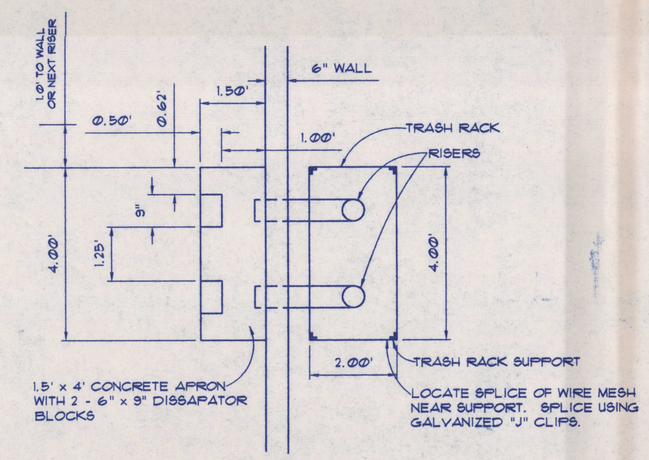


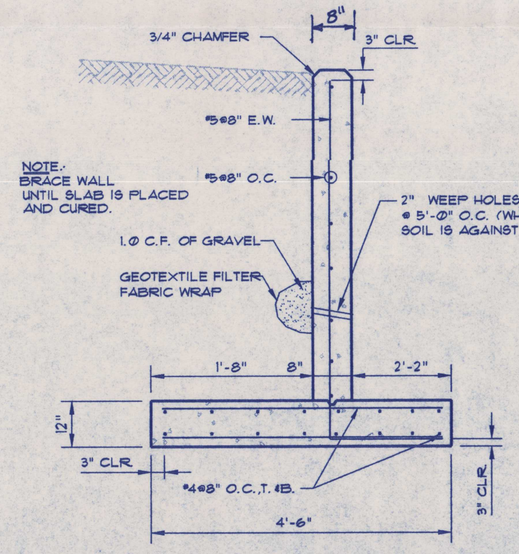
TRASH RACK½RISER DETAIL



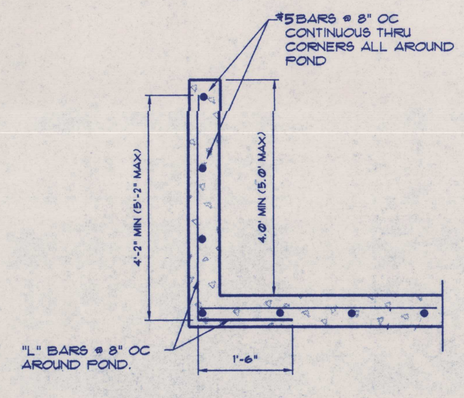
THICKENED SLAB DETAIL
NOT TO SCALE



TOP VIEW
RISER DETAILS
NOT TO SCALE



RETAINING WALL DETAIL
NOT TO SCALE



REINFORCING DETAIL PLAN
NOT TO SCALE

NOTES

Alianz A, LLC
An Alliance of Environmental Resource Professionals
P.O. Box 207 Salmon, Texas
Phone: (830) 888-2193 Fax: (830) 888-3197

ROBERT D. LEONHARD 74492 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
3-8-00

COYLE ENGINEERING INC.
3330 IH 10 WEST SUITE B / BOERNE, TEXAS / 78006
PHONE: (830) 755-2666 / FAX: (830) 755-8661

HOFFMANN LANE ELEMENTARY SCHOOL
COMAL I.S.D.
COMAL COUNTY, TEXAS

DESIGNED	RDL
DRAWN	RTS
CHECKED	RDL
DATE	3/8/00

REVISIONS

SHEET TITLE
PERMANENT EROSION CONTROL DETAILS

SHEET
C5
OF 5

AGENT AUTHORIZATION FORM
FOR REQUIRED SIGNATURE
EDWARDS AQUIFER PROTECTION PROGRAM
RELATING TO 30 TAC CHAPTER 213
EFFECTIVE JUNE 1, 1999

I, Roy Linnartz
Print Name

Maintenance Director, acting for
Title - Owner/President/Other

the Comal Independent School District, Board of Directors
Corporation/Partnership/Entity Name

have authorized Russell Masters
Print Name of Agent/Engineer

of AlianzA, LLC,
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Natural Resource Conservation Commission (TNRCC) 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 TNRCC's approval letter. The TNRCC is authorized to assess administrative penalties of up to $10,000 per day per violation.

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

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

4. For applicants who are not the property owner, but who have the right to control and possess and control the property, additional authorization is required from the owner.

Roy Linnartz
Applicant's Signature

MAR 8 2000
Date

Charlotte Rene Cole
Notary Public, State of Texas
My Commission Expires Jan. 27 200[illegible]

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Roy Linnartz 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 8 day of March, 00.

Charlotte Rene Cole
NOTARY PUBLIC

Charlotte Rene Cole
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1-27-2001

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
EDWARDS AQUIFER PROTECTION PLAN
APPLICATION FEE FORM

NAME OF PROPOSED PROJECT: Comal ISD – Hoffman Lane Elementary School
PROJECT LOCATION: FM 306 and Hoffman Lane, East Central Comal County
NAME OF APPLICANT: Comal Independent School District
APPLICANT'S ADDRESS: 278 Loop 337, New Braunfels, Texas
CONTACT PERSON: Roy Linnartz/Russell Masters PHONE: (830)625-8081/(210)695-4480

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
X Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. 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):

X **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TNRCC:**
TNRCC - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

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

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement, Non-residential	21.370Acres	$ 5000.00
Sewage Collection System	300 L.F.	$ 150.00
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

3/8/2000
Date

RECEIVED
MAR 0 6 2003
COUNTY ENGINEER

Modifications to a Previously Approved

Water Pollution Abatement Plan

For

Hoffman Lane Elementary School

Comal Independent School District



2003 FEB 21 AM 10:42
"RECEIVED TCEQ"
SAN ANTONIO
REGION

Prepared by:

Lockwood, Andrews & Newnam, Inc.

1210 Arion Pkwy, Suite 100
San Antonio, TX 78216

Comal Independent School District
Hoffman Lane Elementary School
Modifications to Previously Approved WPAP

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- A. Attachment A – Road Map Showing Directions and Location of Project Site
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- C. Attachment C - Project Description

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- I. Overflow Weir for Sediment Basin Calculations
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V. AGENT AUTHORIZATION FORM

VI. APPLICATION FEE FORM

VII. TNRCC CORE DATA FORM

GENERAL INFORMATION FORM

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: **Comal ISD – Hoffman Lane Elementary School**

COUNTY: **Comal** STREAM BASIN: **Guadalupe**

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST X MODIFICATION

CUSTOMER INFORMATION

1. Agent/Representative (If any):

Contact Person: **Guillermo Nieri**
Entity: **Comal Independent School District**
Mailing Address: **278 Loop 337**
City, State: **New Braunfels, Texas** Zip: **78130**
Telephone: **(830) 221-2075** FAX: **(830) 221-2009**

2. __ This project is inside the city limits of _____.
__ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
X 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 TNRCC's Regional staff can easily locate the project and site boundaries for a field investigation.

5.0 miles N. of City of New Braunfels on FM 306 N.E. side of 306 before Hoffman Lane

4. X **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.

5. X **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:

X Project site.
X USGS Quadrangle Name(s).

X Boundaries of the Recharge Zone (and Transition Zone, if applicable).
X Drainage path from the project to the boundary of the Recharge Zone.

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

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

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)
   - X Other: Construction in progress

PROHIBITED ACTIVITIES

9. X 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. X 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:

   X 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 Contributing Zone Plan.
__ 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 TNRCC 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:

__ TNRCC cashier
__ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TNRCC to the local municipality or county, groundwater conservation districts, and the TNRCC's Central Office.

14. X 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.
__ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with 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 TNRCC review. The application was prepared by:

Comal Independent School District (Applicant)/Harold L. Millegan (Agent)
Print Name of Customer/Agent

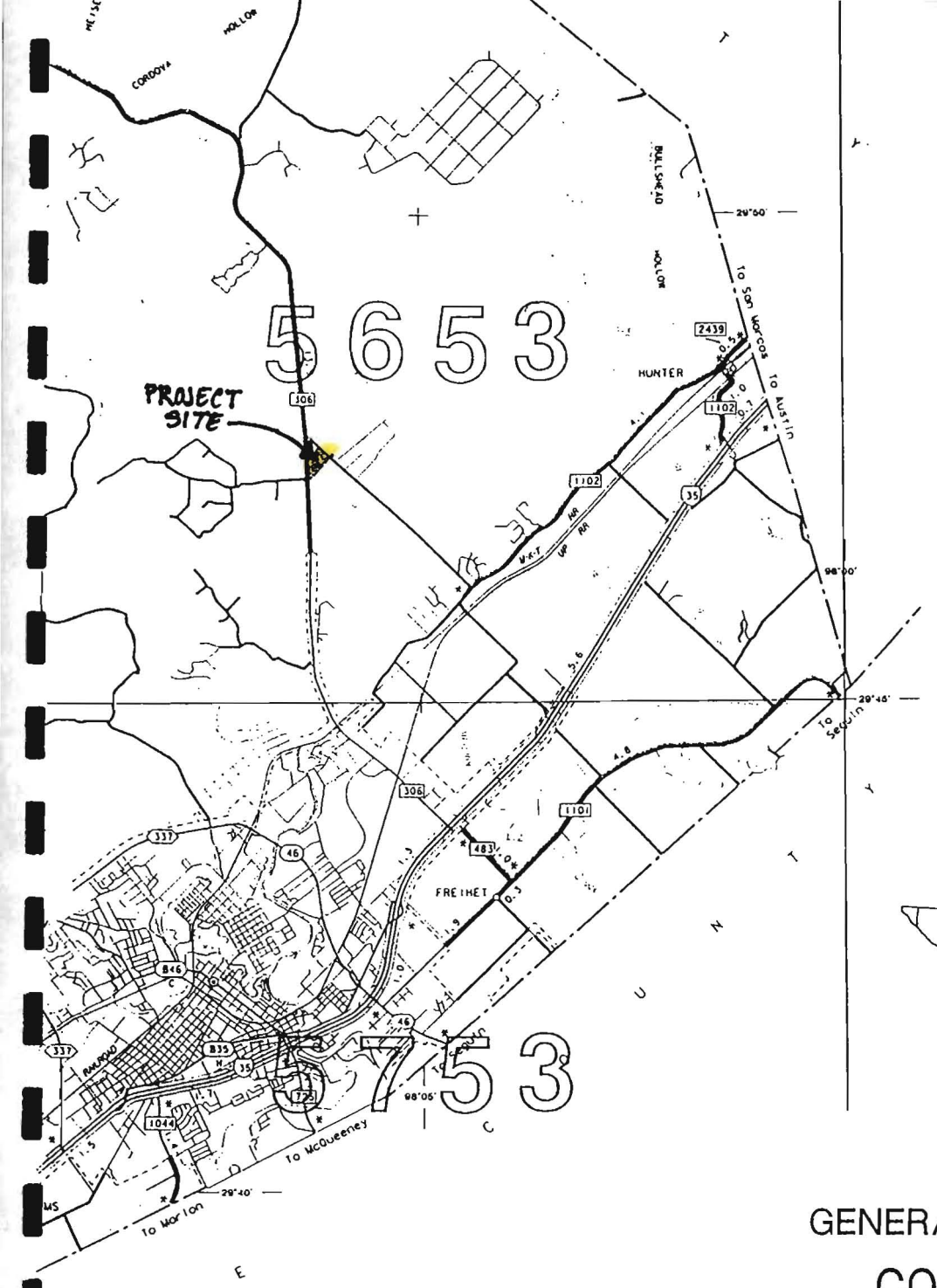
Harold L. Millegan — 2/14/03

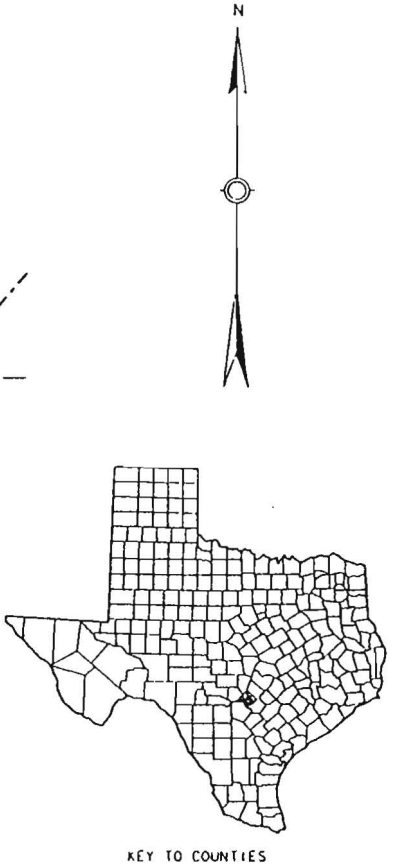
Signature of Customer/Agent — Date

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.

Attachment A

Road Map Showing Directions and Location of Project Site





KEY TO COUNTIES

GENERAL HIGHWAY MAP

COMAL COUNTY

TEXAS

PREPARED BY THE

TEXAS DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PLANNING AND PROGRAMMING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

0 1 2 3 4

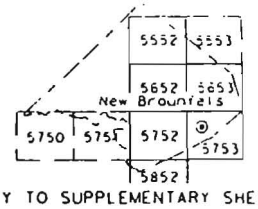
MAP

1988

1990 CENSUS FIGURES

HIGHWAYS REVISED TO JANUARY 1, 1995

LAMBERT CONFORMAL CONIC PROJECTION · 1927 NORTH AMERICAN DATUM
STANDARD PARALLELS 27°25' AND 34°55'



KEY TO SUPPLEMENTARY SHEETS

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

TRAVEL INFORMATION

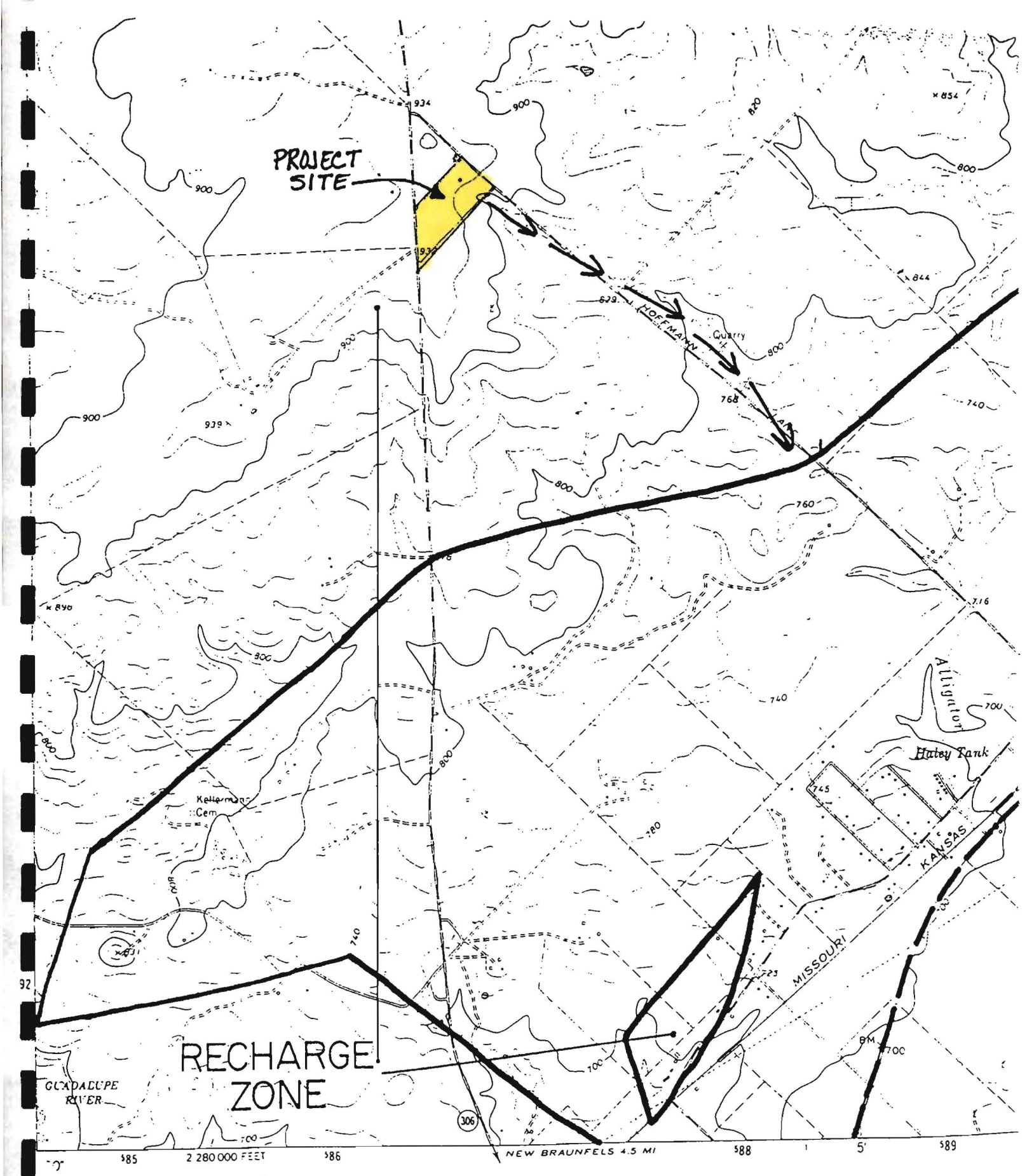
Dial 1-800-452-9292 for travel assistance from a professional Texas travel counselor, including routing in Texas, emergency road condition information, and other travel services, or to register a comment or complaint about department operations.

Copies of this map are available for public use at nominal cost from the Texas Department of Transportation, 4000 Jackson Avenue Austin, Texas 78731 or mail requests may be sent to the Budget and Finance Division, P O Box 5020, Austin, Texas 78763-5020

Comal Sheet 1 of 1 Base Sheet and 5 Supplementary Sheets

Attachment B

USGS/Edwards Recharge Zone Map



.apped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1958 Field checked by USGS 1964

Polyconic projection 1927 North American datum

HUNTER, TEX.
N2945 - W9800/7 5

1964
PHOTOREVISED 1973
AMS 6343 I SE - SERIES V882

Attachment C

Project Description

This project consists of a 21.37 acre site to be developed into an elementary school for the Comal ISD. The site is located on the Edwards Aquifer Recharge Zone, approximately 5.0 miles N. of New Braunfels on FM 306. The site is relatively flat draining in a southeast direction into an unnamed tributary of Alligator Creek at the southeastern edge of the site, approximately 1.25 miles upstream of the southern boundary of the EARZ.

Development of the property will consist of:

76, 711 Sq. ft. of classroom and administrative buildings
9,185 Sq. ft. in a gymnasium
165,932 Sq. ft. of impervious parking and roads
A pump house/chlorinator/fuel storage building
Vegetated filter strips
Storm water features-sedimentation/filtration basins
Wastewater treatment unit & irrigation area

GEOLOGIC ASSESSMENT FORM

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

PROJECT NAME: **Comal ISD – Hoffman Lane Elementary School**

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

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

PROJECT INFORMATION

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

2. Soil cover on the project site is **0.83** feet thick. In general, the soil present appears to have the ability to:

__ transmit fluid flow to the subsurface.
X impede fluid flow to the subsurface.

3. X **SOILS ATTACHMENT**. A narrative description of soil units and a soil profile, including thickness and hydrologic characteristics are attached at the end of this form.

4. X 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.

5. X 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.

6. X 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" = 50'
Site Geologic Map Scale	1" = 200'

7. Method of collecting positional data:
__ Global Positioning System (GPS) technology.
X Other method(s). **USGS Topographic Maps**

8. X The project site is shown and labeled on the Site Geologic Map.

9. X Surface geologic units are shown and labeled on the Site Geologic Map.

10. X 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.

11. __ The Recharge Zone boundary is shown and labeled, if appropriate.

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

X There are 2 (#) 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.
X 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.

ADMINISTRATIVE INFORMATION

13. X One (1) original and three (3) copies of the completed assessment has been provided.

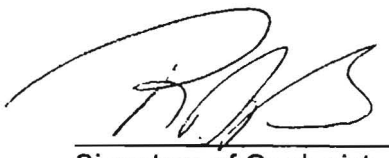
Date(s) Geologic Assessment was performed: 9-25-99
Date(s)

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 213.

ROBERT A. BURNS
Print Name of Geologist

(210) 698-5115
Telephone

Fax



Signature of Geologist

9-26-99
Date

Representing: R. A. BURNS ENVIRONMENTAL CONSULTANT
(Name of Company)

Comal ISD Hoffman Lane Elementary School

Geologic Assessment Table Feature List

Feature S1: A new water well (MM) drilled, not completed, to be closed.

Feature S2: A new water well (MM) completed and equipped in compliance with 16 TAC Chapter 76.

Feature S3: Vuggy rock zone (VRZ) exposed along the upper dry creek bed, tributary to Alligator Creek. Infiltration restricted by underlying impervious Grainstone. Vugs do not appear to be interconnected.

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: COMAL ISD FM 306 SITE

| FEATURE ID | | | FEATURE CHARACTERISTICS | | | | | | | | | | | | | | | | | | | | | | | | PHYSICAL SETTING | | | | | | | | | | | | | | | | | | |

Comal ISD
FM 306 Project Site
Site Soils Attachment

Rumple-Comfort Association (80% of Site):

The Comal ISD 306 site is approximately 21.370 acres. The Rumple-Comfort (RUD) associated soils (Soil Survey of Comal & Hays County, June 1984) represent approximately 80% of the study area (see Soils Map). This soil association consists of shallow to moderately deep soils on the upland portion of the study area. The surface layer is dark reddish brown, very cherty clay loam soils up to 10 inches thick (see Table 1). Cobbles and chert nodules on the surface are common.

The soils are well drained and support a thick growth of buffalo grass, Texas persimmon, Ashe juniper, mesquite, Spanish oak, Prickly pear and other assorted cactus.

Surface runoff is slow to medium. Permeability is slow, and available water capacity is low. These factors will impede fluid flow to the subsurface. The rocky surface layer, shallowness to bedrock, clayey and corrosivity to uncoated steel are severe limitations for use of soils for urban and recreation uses.

Comfort-Rock Outcrop Complex (20% of Site):

The Comfort-Rock outcrop (CrD) complex (Soil Survey of Comal & Hays County, June 1984) represents 20% of the study area (see Soils Map). Located within the Alligator Creek drainage, eastern portion of the study area. The Comfort soils consists of shallow, clayey soils and Rock outcrop on side slopes, hilltops and uplands on the Edwards Plateau. Typically the surface layer of the Comfort soils is dark brown extremely stony clay about 6 inches thick. The subsoil extends to a depth of 13 inches. It is dark reddish brown extremely stony clay. The underlying material is indurated fractured limestone (see Table 1).

The Comfort soil is well drained. Surface runoff is slow to medium. Permeability is slow, and the available water capacity is very low. These factors will impede fluid flow to the subsurface. Water erosion is a slight hazard. The stony surface layer, shallowness to bedrock, and corrosivity to uncoated steel are sever limitations for use of soils for urban and recreation uses. Texas persimmon and blueberry juniper strive in these areas.

TABLE NO.1

Soil Profile, Thickness, Hydraulic Characteristics

(Table derived from the "Soil Survey of Comal & Hays Counties, Texas")

SOIL	DEPTH	DESCRIPTION	HYDRAULIC CHARACTERISTICS
RUD	0-10	Very cherty clay loam,	C/D
	10-28	Very stony clay,	
	28-36	unweathered bedrock.	
CrD	0-6	Extremely stony clay,	D
	6-13	Very stony clay,	
	13-20	unweathered bedrock	

Hydraulic Characteristics

A: high infiltration rate, low run-off potential
B: medium high infiltration rate, medium to low run-off potential
C: medium low infiltration rate, medium to high run-off potential
D: low infiltration rate, high run-off potential

Comal ISD FM 360 Project Site
Stratigraphic Column

Summary of the lithologic and hydrologic properties of the hydrogeologic subdivisions of the Edwards aquifer outcrop, Comal County, Texas

[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		Navarro and Taylor Groups, undivided			CU	600	Clay, chalky limestone	Gray-brown clay; marly limestone	None	Low porosity/low permeability
			Austin Group			CU; rarely AQ	130 - 150	White to gray limestone	White-chalky limestone; *Gryphaea aucella*	None	Low porosity; rare water production from fractures/low permeability
			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	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			CU	Less than 10	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 - 100	Mudstone to packstone; *miliolid* grainstone; chert	Light tan, massive; some *Toucasia*	Many subsurface; may be associated with earlier karst development	Laterally extensive; both fabric and not fabric/ water-yielding; one of most permeable
	III				Leached and collapsed members, undivided	AQ	80 - 100	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; *Montastrea sp.*	Extensive lateral development, large rooms	Majority not fabric/one of most permeable
	IV				Regional dense member	CU	20 - 24	Dense, argillaceous mudstone	Wispy iron-oxide stains	None, 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; *Toucasia*	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; locally permeable
	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/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

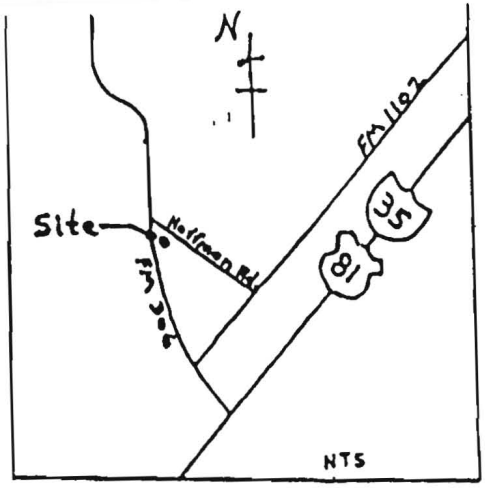
Comal ISD-Hoffman Lane Elementary School

Narrative Description of Site Specific Geology

The Comal ISD school site is covered with a thin rocky soil described later in this report. The site is underlain with crystalline limestone, mudstone, grainstone, chert, and collapsed breccia. These rocks are Lower Cretaceous in age and make up the Person formation of the Edwards Group of rocks. The Person formation is further divided into three members, the Cyclic and marine member, Leached and collapsed member, and the Regional dense member(see stratigraphic column attached).

The Leached and Collapsed(L and C) member, undivided is the only unit exposed in the study area. The L and C member is approximately 80 feet thick with approximately 20 feet of this unit exposed in the site area. This portion of the L and C member appears in the easters portion of the study area and outcrops along the unnamed tributary of Alligator Creek. The L and C member is confined below by the impervious Regional Dense member. No prominent fracture patterns or faulted rock was observed on the site. No potentially significant manmade or significant geologic features were identified by this survey. The following potential recharge features were mapped and described on the attached Geologic Assessment Table.

Comal ISD
FM 306 Project
Site Plan



Hoffman Lane

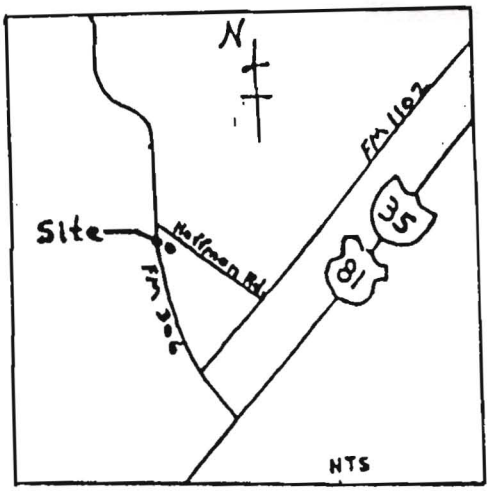
Alligator Creek

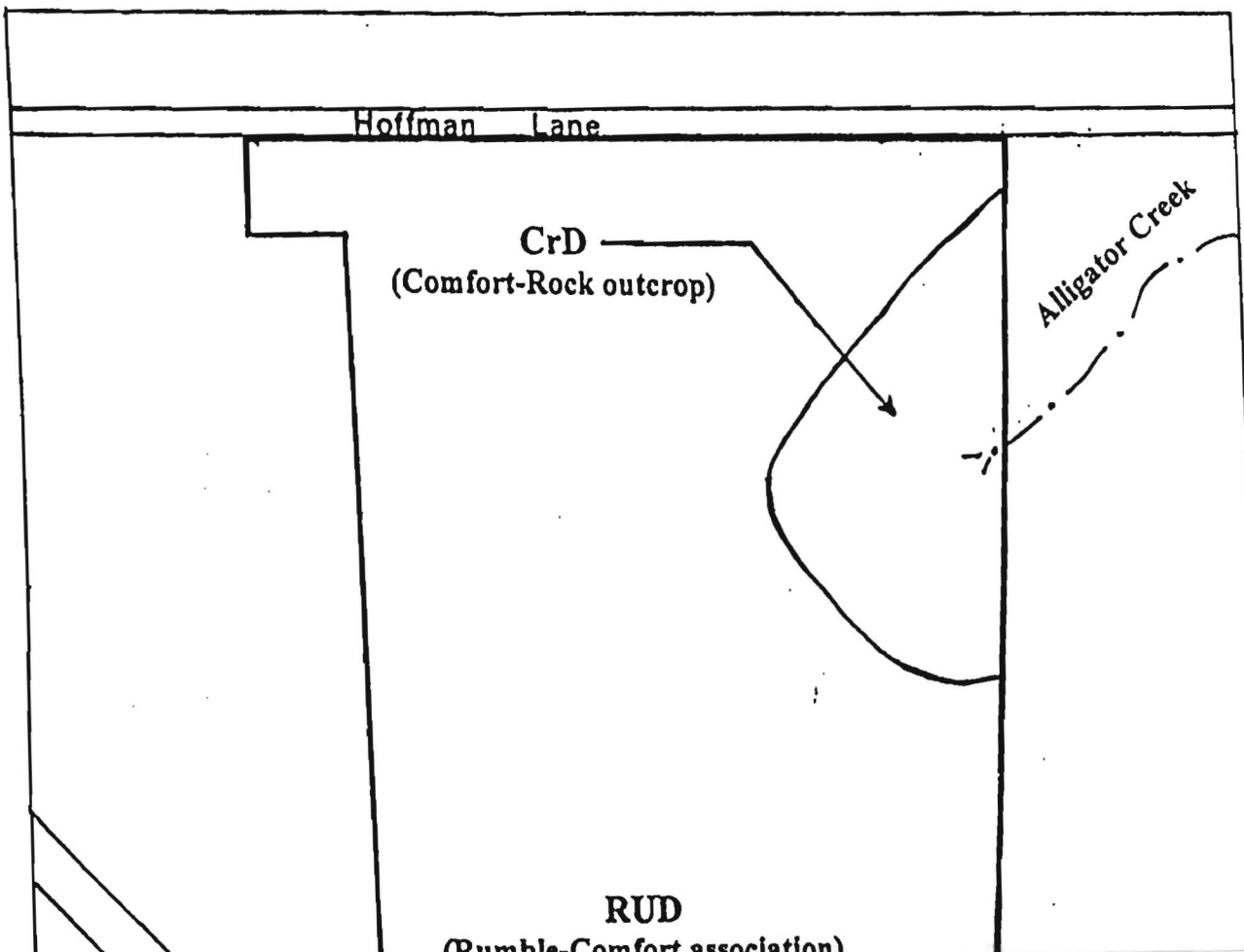
LOT 15

21.370 ACRES

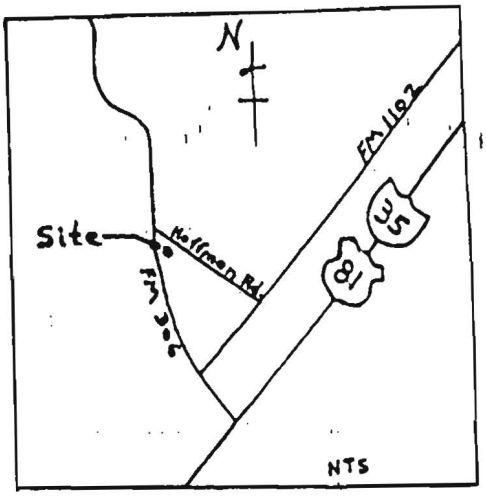
N

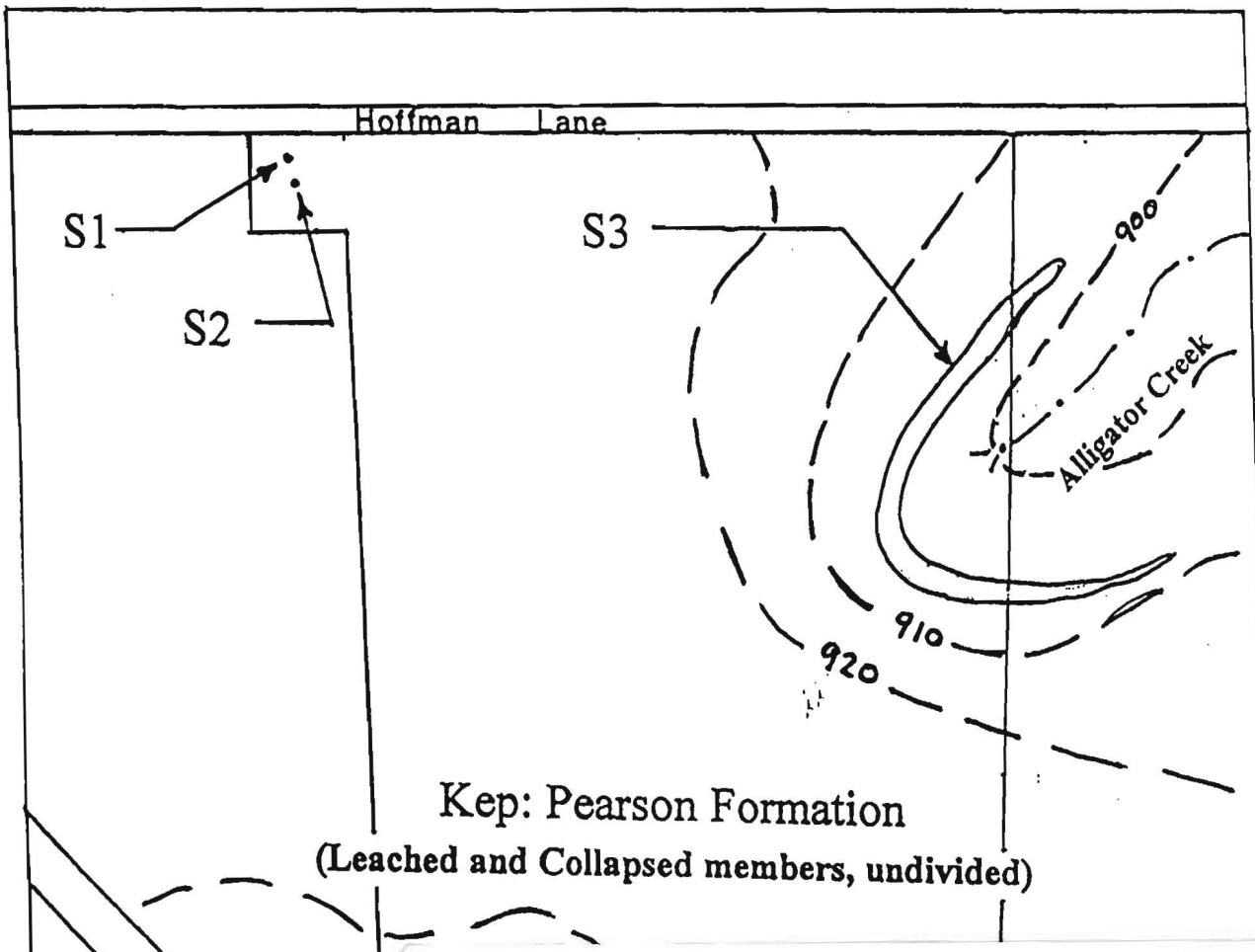
Comal ISD
FM 306 Project Site
Site Soils Map





Comal ISD
FM 306 Project Site
Site Geologic Map





Kep: Pearson Formation

(Leached and Collapsed members, undivided)

MODIFICATION OF A PREVIOUSLY APPROVED PLAN

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. Regulated Entity Name: **Comal ISD Hoffman Lane Elementary School**
2. Original Regulated Entity Name: **Comal ISD Hoffman Lane Elementary School**

3. X **ATTACHMENT A - Original Approval Letter.** A copy of the original approval letter and copies of any letters approving modifications are found at the end of this form.

4. A modification of a previously approved plan is requested for: (INDICATE ALL THAT APPLY)

   X 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.

5. X **ATTACHMENT B - Narrative of Proposed Modification.** A narrative description of the nature of each proposed modification is provided at the end of this form.

6. Original Project:

Type:	WPAP X SCS __ UST __ AST
Size:	**21.370** acres
Population:	**900 (800 Students + 100 faculty)**
Wastewater Volume:	**N/A** gal/day
Sewer Pipe:	**N/A** linear ft
Hydrocarbon Storage:	**N/A** # of tanks
Impervious Cover:	**27.98** %

7. Proposed Modification:

Type:	WPAP X SCS __ UST __ AST __
Size:	**21.370** acres
Population:	**900 (800 students + 100 faculty)**
Wastewater Volume:	**N/A** gal/day
Sewer Pipe:	**N/A** linear ft
Hydrocarbon Storage:	**N/A** # of tanks
Impervious Cover:	**28.80** %

8. **ATTACHMENT C - Site Plan.** A Site Plan showing the existing conditions of the site, the location of proposed modification(s), and, as applicable, geologic or man-made features, temporary erosion and sedimentation controls, and permanent BMPs is found at the end of this form.

9. X One (1) original and three (3) copies of a completed application has been provided.

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 TNRCC review and executive director approval. The request was prepared by:

Comal Independent School District (Applicant)/Harold L. Millegan (Agent)
Print Name of Customer/Agent

Harold L. Millegan 2/14/03
Signature of Customer/Agent Date

ATTACHMENT A

Original Approval Letter

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Jeffrey A. Saitas, *Executive Director*

FAXED 26 June 00 Aclark

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

April 26, 2000

0->99 BOND 306 + HOFFMAN WPAP + WW SYSTEM / MISC
✓. MICHAEL STENBERG / PRUGER ASSOC (512) 476-4289
✓ GERALD HADEN / MF O SHOP
✓. JT CONSTRUCTION / ATT: GEORGE B. PALE III 210 641-1252
✓. ODESSA PUMP / ATT: COURTNEY, KYLE (210) 492-8825
✓. RUSSELL MASTERS / (210) 695-4475 2 Please call Guillermo @ Comal ISD (@ Affidavit ETC)

Mr. Roy Linnartz
Comal Independent School District
278 Loop 337
New Braunfels, TX 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Comal ISD - Hoffman Lane Elementary School; Located on the east side of FM 306, approximately 1,500' south of intersection with Hoffman Lane; Comal County, Texas
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 File No. 1455.00

Dear Mr. Linnartz:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Russell Masters of AlianzA, LLC on behalf of the Comal Independent School District on March 9, 2000. Final review of the WPAP submittal was completed after additional material was received on April 12, 2000. As presented to the TNRCC, 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, modification to a plan, or exception. A motion for reconsideration must be filed no later than 20 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% of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed school project will have an area of approximately 21.37 acres and will have the following parameters:

- The development will include buildings for classrooms, administration, gymnasium, water well and pump house, and associated parking.
- The proposed impervious cover for the development is approximately 28% of the total area of the site.
- The impervious cover for this school site will be 5.98 acres.
- According to the application, wastewater will be disposed of through the use of on-site sewage facilities. The flow anticipated will be 6,400 gallons per day (gpd). thus exceeding the County Permitting threshold of 5,000 gpd and consequently requiring a TNRCC Permit.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, one sedimentation/filtration basin and three vegetated filter strips will be provided. The individual treatment components will consist of:

1. The full sedimentation/filtration basin is designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." and is sized to capture the first 0.49 inches of stormwater run-off from 10.83 acres, providing a total capture volume of 30,202 cubic feet. The filtration system will consist of:

   A. 1575 square feet of sand, which is 18 inches thick,
   B. an underdrain piping wrapped with geotextile membrane, and
   C. an impervious liner.

2. Three vegetative filter strips are designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." The filter strips will:

   A. be contiguous with developed area,
   B. be at the same elevation as the developed area,
   C. have a level spreading device, and
   D. be sized to filter stormwater run-off from the areas shown in the table below.

Drainage Area	Contributing Area (Acres)	Vegetated Filter Provided (Acres)
1	0.200	0.113
2	0.290	0.165
3	0.034	0.031

GEOLOGY

According to the geologic assessment included with the submittal, there are three possibly sensitive features located on the project site. The San Antonio Regional Office site inspection of April 5, 2000, revealed that the site is as described by the geologic assessment and no additional geologic or manmade features were observed.

SPECIAL CONDITIONS

I. Under 30 TAC §213.6(a)(4), new land application wastewater treatment plants located on the recharge zone must be designed, constructed, and operated such that there are no bypasses of the treatment facilities or any discharges of untreated or partially treated wastewater.

II. Under 30 TAC §213.6(b) Land application systems.

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

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

III. Upon receipt of an approved wastewater permit for the site, provide four copies of the approved permit to the San Antonio Regional Office.

IV. Prior to occupancy of the school and use of the treatment system, provide written certification from a Texas Licensed Professional Engineer that the wastewater treatment system meets the requirements of 30 TAC §213.6(a)(4) and 30 TAC §213.6(b), and that it has been constructed as designed and approved.

V. After the wastewater treatment system has been in operation for six months, provide a follow-up assessment of the system's environmental impact on the Edwards Aquifer, certified by a Texas Licensed Professional Engineer. This assessment is due two months after the end of the six month period.

VI. The sedimentation/filtration basin is designed in accordance with the 1999 edition of the TNRCC's "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices." The basin will incorporate sedimentation and filtration as described above.

VII. All sediment and or media removed from the full sedimentation/filtration 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 §26.136 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, 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 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.

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 TNRCC 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. Abandoned injection wells must be closed under the requirements of 30 TAC Chapter 331 (relating to Underground Injection Control).

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

<u>During Construction:</u>

9. 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.

10. 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.

11. Two wells exist on the site. All identified abandoned water wells, including injection, dewatering, and monitoring wells must be plugged pursuant to requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Licensing and Regulation of Water Well Drillers and Water Well Pump Installers) and all other locally applicable rules, as appropriate. If any abandoned wells (including water, injection (injection well referenced in Item 7), dewatering, and monitoring well) are encountered during construction, they must be plugged pursuant to requirements of the Texas Department of Licensing and Regulation (16 TAC Chapter 76) and all other locally applicable rules, as appropriate.

12. 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).

13. 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.

14. 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.

15. To the maximum extent practicable, BMPs and measures must maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction. 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. A request to temporarily seal the feature must include a justification that no reasonable and practicable alternative exists. The request will be evaluated by the executive director on a case-by-case basis.

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

16. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

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

18. 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.

19. 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.

20. 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 Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4024.

Sincerely,

Bobby D. Caldwell

for Jeffrey A. Saitas, P.E.
Executive Director
Texas Natural Resource Conservation Commission

JAS/JKM/eg

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

cc: Mr. Russell Masters, AlianzA, LLC
Mr. John Bohuslav, TXDOT San Antonio District
Mr. Tom Hornseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TNRCC Field Operations, Austin

ATTACHMENT B

Narrative of Modifications To A Previously Approved WPAP Plan
Comal Independent School District
Hoffman Elementary School

Permanent Erosion Control Structures:

1. The sides and bottom of the sedimentation pond have been lined with 4-inch thick reinforced concrete rip-rap in lieu of the previously approved 12-inch impermeable clay liner topped with 4-inches of topsoil and seeding. This change was required due to steep side slopes resulting from the adjacent bus road being constructed approximately 5 feet above the design grades.

2. The overall length and width of the sedimentation pond was modified as required to fit the as-built alignment of the adjacent bus road. The modified sedimentation pond has the capacity to store 23,116 cubic feet of storm water runoff volume generated by a storm. Refer to calculations contained in the modification report.

3. A 6-foot high chain-link security fence was added to the modified plan as required to secure both the sedimentation pond and the sand filtration basin.

4. The sand filtration basin vehicle access ramp was modified inside the basin as required to comply with the TCEQ Regulations. Perforated 4-inch drainpipes with a 4-inch outfall line have also been added. At the 4-inch outfall line a 4-inch resilient wedge gate valve and a 4-inch flap gate at the end of the pipe has been added per TCEQ regulations. Refer to the modified plans for details.

5. The overflow weir/emergency spillway on the previously approved drawings of the sedimentation pond has been downsized and moved. The new location of the overflow weir and details of the weir have been included in the modified plan. A sediment basin inflow structure (concrete wall) at the end of the underground storm drain headwall and the height of the wall is 907.00 feet. The sediment basin inflow structure has 9 – 1' x1' openings at the basin floor to allow discharges to flow through. The purpose of sediment basin inflow structure is to slow down velocities entering into basin and to divert runoff from storms greater than 25 years from entering into the sand filtration basin. Refer to calculations for the design of the overflow weir contained in the modification report.

6. The previously approved 4' x 3' concrete box culvert crossing the bus road and discharging into the sedimentation pond has been downsized. The size of this culvert has been changed to a 24-inch reinforced concrete pipe with TxDOT standard concrete headwalls. A hydraulic culvert analysis of this modified structure is included in the modification report.

7. The previously approved 36-inch reinforced concrete pipe (RCP) underground storm sewer system has been downsized. The size of this storm sewer system has been changed to a 24-inch reinforced concrete pipe with a TxDOT standard concrete headwall at the outfall of the system. A hydraulic analysis of the outfall to the first junction box structure and 24-inch RCP has been included in the modification report.

8. The area around the existing water well located in the northeast corner of the school property has been modified to reflect "as-built" conditions. The overall area of impervious cover has been recalculated and modified to reflect the newly constructed water storage facility, pumps and equipment pads existing in this area of the site. Drainage areas 3 and 4 have been combined together in the modified drawings. The area of vegetative filter strips treating storm water runoff from this area has been increased to account for the additional impervious cover. Refer to calculations in the modification report.

Temporary Erosion Control Structures:

Approximately 600 linear feet of Type I reinforced sediment control fence and approximately 50 linear feet of Type III rock filter dam were installed for purposes of preventing water pollution during construction activities and diverting runoff from unstable areas.

On Site Wastewater Treatment Facility:

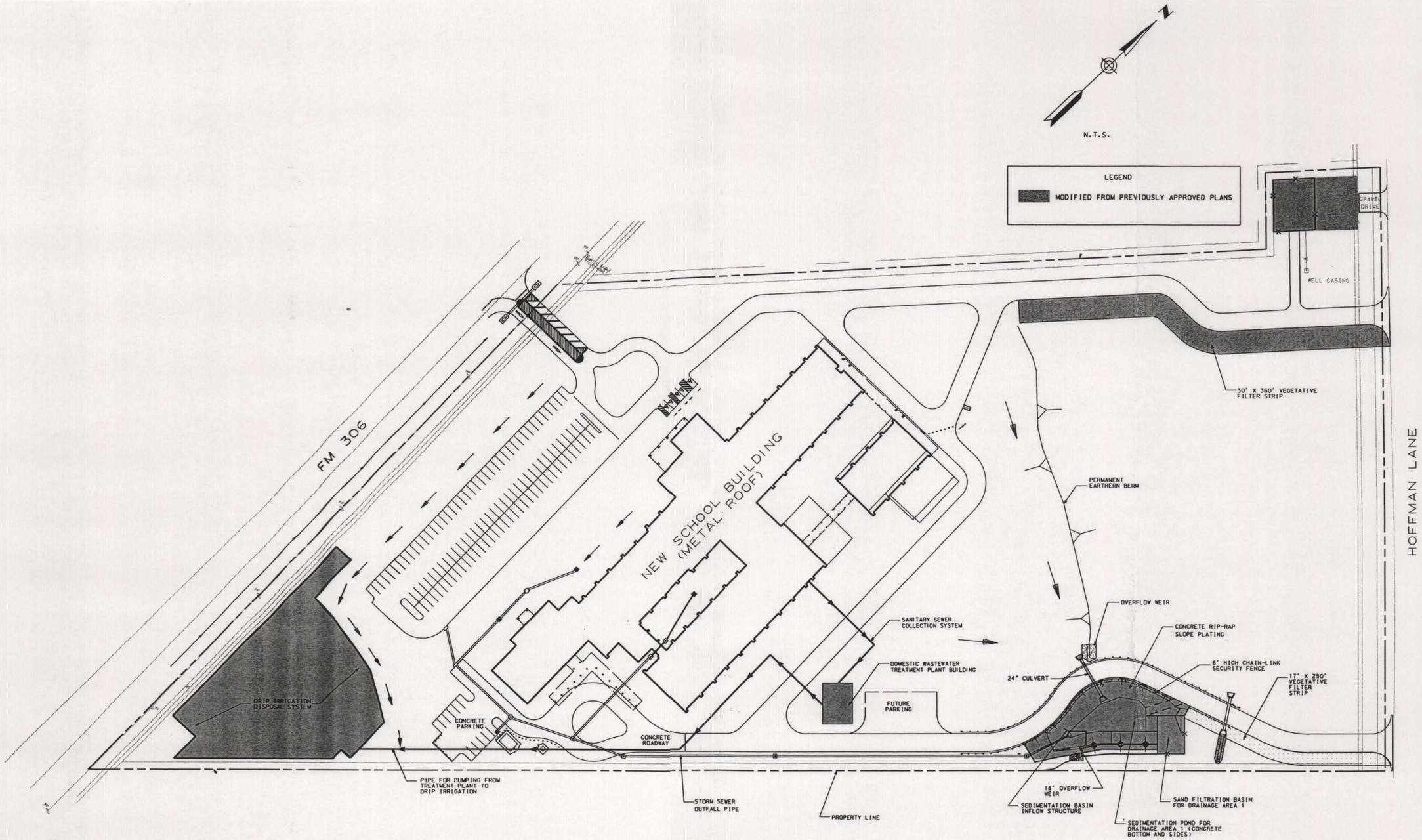
The previously approved 9,000 square feet domestic wastewater treatment plant has been downsized to approximately 2,200 square feet and is located to the south of the original location. The new location is included in the modified drawings.

Drip Irrigation Disposal System:
The previously approved 1.5-acre drip irrigation disposal system was located on the north side of the property. It has now been downsized to approximately a 1-acre drip irrigation disposal system and is now located on the south end of the property. The new location is included in the modified drawings.

Note:
See Attachment C – Site Plan for location of modified areas described above.

ATTACHMENT C

Site Plan



NOTE: SEE ATTACHMENT 'B'
FOR DESCRIPTION OF MODIFICATIONS

ATTACHMENT C
SITE PLAN

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

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PERMANENT STORM WATER SECTION

Permanent Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

REGULATED ENTITY NAME: **Comal ISD – Hoffman Lane Elementary School**

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

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

2. X 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.

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

   __ A technical guidance other than the TNRCC 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. X 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.

   X 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.

__ **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.

X 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.**

X 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.

__ 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 .

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

X 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.

__ 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.

8. X **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. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

9. X 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.

X 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.

__ **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. X **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. Design Calculations, TNRCC 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. X **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. X The TNRCC 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.

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

13. X **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. 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.

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

14. X 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. X 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 TNRCC review and executive director approval. The application was prepared by:

Comal Independent School District (Applicant)/Harold L. Millegan (Agent)
Print Name of Customer/Agent

Harold L. Millegan 2/14/03
Signature of Customer/Agent Date

ATTACHEMENT B

BMP's for Upgradient Storm Water

There is a minimal upgradient storm water that passes through this site. About 100 feet north of the site, there is a ridge that forces runoff to flow in the other direction. As shown on the grading plan, runoff is diverted from the on-site area that would flow into the main sedimentation and filtration basins. This runoff eventually sheet flows across the portion of the site that remains undeveloped (no impervious cover) and into a bar ditch at the southern edge of Hoffman Lane.

ATTACHEMENT C

BMP's for On-Site Storm Water

This site has two distinct drainage areas, and three areas that will be treated separately. The main area is approximately an 11-acre area that drains all parking, roof, other pavement, and the majority of the roadways. While much of this could be treated with vegetative filter strips (roads, metal roof runoff), there is not enough vegetative surface area at the natural down slope area of the site. Therefore, separate sedimentation and filtration basins were placed at an appropriate location downstream of the site. The majority of the runoff flows through a culvert, some of the runoff sheet flows into the basin and the remaining portion, including the main parking area, enters the sedimentation basin through an underground storm drainage system.

Storm water entering the sediment basin through the 24-inch conduit along the south line of the project is metered through the use of an overflow weir in the sediment basin. All flow up to and including the 25-year storm is routed directly to the sediment basin and sand filtration basin. Flows in excess of the 25-year storm, as witnessed by the water surface elevation in the sediment basin inflow structure will exit via the overflow weir and be routed from the basin to the offsite discharge.

Storm water entering the basin from the north channel enters a splitter basin. When the water surface in the basin corresponds to the 25-year flow in the sediment basin, additional flow (head) is routed through a weir to a channel that bypasses the sediment basin, and is ultimately discharged offsite.

Runoff in the sediment basin then flows through a bank of PVC risers into the filtration basin, and exits through a PVC outlet at the low point of the site. The steep slopes in the area of the site contribute to the performance of this gravity system.

The two remaining drainage areas are roadways that are treated by vegetative filter strips immediately downstream of the roads. Because of the slight slopes and open, undeveloped area, the strips are an ideal way to treat this runoff. This method prevents the collection of significant, additional runoff in the basin system.

ATTACHEMENT D

BMP's for Surface Streams

See Permanent BMP's construction drawings.

ATTACHEMENT F

Construction Plan

See full size plans at the end of this section.

ATTACHEMENT G

INSPECTION, MAINTENANCE, REPAIR & RETROFIT PLAN

VEGETATIVE FILTER STRIPS:

Basic maintenance to insure the health of the plants is required for the vegetative strips. A Pest Management Plan shall be implemented to control insect and weeds with minimal or no use of insecticides and herbicides. Mowing shall be a minimum of twice annually or as needed to limit vegetation height to 4 inches.

Inspect filter strips at least twice annually and after heavy rainfalls for erosion or damage to vegetation. The strip should be checked for uniformity of grass cover, debris, litter and sediment accumulation. Filter strip structures should be kept free of obstructions to reduce floatables being flushed downstream and for aesthetic reasons by periodic inspections performed no less than 4 times per year. Sediment may accumulate along the upstream boundary of the strip preventing overland flow and should be removed.

Anything noted to be in need of repair shall be repaired in a suitable manner immediately. If there is need of retrofit or extensive repair, the design engineer shall be hired to determine the lengths of retrofit or repair needed.

All of the general activities listed here shall be documented in written form and kept on file at the premises. Copies of documentation may be kept at other locations as seen appropriate by the parties involved.

SAND FILTER SYSTEMS, SEDIMENTATION BASIN AND INFLOW STRUCUTRE:

Sand filters shall be inspected on a quarterly basis and after heavy rainfalls. During each inspection erosion areas inside and downstream of BMP must be identified and repaired or revegetated immediately. Also, any damage to the to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired immediately.

Remove sediment from inlet structure, sedimentation basin and inflow structure when sediment builds up to 20% volume allocated for sediment accumulation or when proper functioning of these structures is impaired. Sediment shall be cleared from inlet structure sediment basin inflow structure at least once a year and the from the sedimentation basin at least every five years. The sand filter surface will be cleaned when sediment has reached a depth of 0.5 inches or as often as necessary to ensure that the pond drains entirely in the allotted 48 hour time period. Also, under drains piping network shall be cleaned every two years or as needed to maintain design drawdown time.

Grass areas in and around sand filters shall be mowed at least twice annually to limit vegetation height to 18 inches.

Anything noted to be in need of repair shall be repaired in a suitable manner immediately. If there is need of retrofit or extensive repair, the design engineer shall be hired to determine the lengths of retrofit or repair needed.

All of the general activities listed here shall be documented in written form and kept on file at the premises. Copies of documentation may be kept at other locations as seen appropriate by the parties involved.

Signed: _____ Date: 2/14/03
Professional Engineer

Signed: _____ Date: 16 JAN 03
Owner

ATTACHEMENT I

Measures for Minimizing Surface Stream Contamination

The erection of temporary BMP's, the construction of the proposed permanent BMP's and the maintenance of these permanent facilities as described in detail in this Water Pollution Abatement Plan, are the measures that are proposed to avoid and minimize surface stream contamination off-site. There are no surface streams on or near the property.

SEDIMENTATION/SAND FILTRATION BASIN FOR MAIN SITE – DRAINAGE AREA 1

Stormwater Design Manager
Hoffman Lane/FM 306 Elementary School - Main Site Evaluation Worksheet
WPAP Modifications

Sedimentation/Sand Filtration Basin for Main Site - Drainage Area 1

Assumptions:	
Raw Land TSS (mg/L)	80
Developed Land TSS (mg/L)	170
Rainfall - Comal County (inches)	33
Contributing Areas (Acres)	10.83
Impervious Cover - Undeveloped (Acres)	0
Runoff Coefficent (Rv) Undeveloped	0.03
Previously Undeveloped (Acres)	10.83
Developed Area (Acres)	5.46

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		50%	
	L_r =	194	Equation 3.1
	Rv_r =	0.03	Equation 3.2 (100% Undeveloped)
	L_m =	4,536	Equation 3.3
	Rv_m =	0.33	Equation 3.2 (Developed Impervious Cover)
Pre Development Load (Raw)		194	
Post Development Load		4,536	
Required Reduction (lbs.)		3,473	Section 3.3.3

Sand Filtration Calculations:

Sand Filtration Load Reduction	0.86	
Remaining Load		
Fraction of Site Treated	100%	
Runoff Depth (inches)	0.49	From Figure 3.8
Water Quality Volume (cu. ft.)	19,263	
Total WQ Volume With Sediment (cu. ft.)	23,116	

Filter Design

Filter Surface Area (sq. ft.)	1,238
Average Water Height (ft.)	2.5

Basin Sizing

Square Dimension (ft.)	68
Depth (ft.)	5

All references refer to the TNRCC Regulations - Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.

STORM SEWER COMPUTATIONS

Discharge for Underground Storm Sewer to Sediment Basin Calculations
Hoffman Lane/FM 306 Elementary School
WPAP Modifications

Discharge for Underground Storm Sewer to Sediment Basin Calculations:

Discharge: $Q = C*I*A$

Variables:		
C (Coefficient for ground cover)	0.65	
I (Intensity for 25-year rainfall, TxDOT)	6.70	
A (Area)	3.10	Ac
Q (Flow)	13.50	cfs

The discharges that will flow into the sediment basin from the underground storm sewer system for the 25-year rainfall frequency is 13.50 cubic feet per second.

DATE: 1/24/2003
TIME: 3:49 PM

FORTY SIX HYDROLOGIC / CIVIL COMPUTER PROGRAMS

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MANNINGS FORMULA FOR PIPES FLOWING FULL SOLVING FOR DISCHARGE

INSTRUCTIONS

ENTER PIPE SLOPE IN FT/FT	*S=*	*0.0431* FL SLOPE IN FT/FT
ENTER PIPE DIAMETER IN FEET	*D=*	*2* DIAMETER OF PIPE IN FT.
ENTER MANNINGS N-VALUE	*N=*	*0.013* MANNINGS N-VALUE

RESULTS

Qfull= 46.965 CFS

Q=	46.965282	DISCHARGE IN CFS
A=	3.14159	AREA IN SQ. FT.
V=	14.9495262	VELOCITY IN FPS
Hv=	3.47031574	VELOCITY HEAD IN FT.
Pw=	6.28318	WETTED PERIMETER IN FT.
R=	0.5	HYDRAULIC RADIUS IN FT.
R(2/3)=	0.62996052	HYDRAULIC RADIUS TO (2/3)
AR(2/3)=	1.97907769	AREA * HYDRA. RAD. TO (2/3)
K=	226.223803	CONVEYANCE

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HOFFMAN ELEMENTARY SCHOOL PROJECT
OUTFALL LINE STORM SEWER COMPUTATIONS

Pipe Number	D/S Pipe Number	Stations	Pipe Design					Drain Basin	Area (Acres)	Tc (min)	C value	I25 (in/hr)	Q25 (cfs)	Pipe Rough. Coeff. (n)	K = (1.486/n) x (AR2/3)	Friction Slope % Sf =(Q/K)^2	Distance (ft.)	Friction Loss (Hf) (ft) (Sf x Dist.)	Velocity (fps)	U/S HGL Elev (ft)	D/S HGL Elev (ft)	U/S Junction Loss Coeff. hj=Kj xV^2/2g	U/S EGL (V^2/2g	D/S EGL (V^2/2g
			Pipe Dia. (inches)	Slope %	Mannings Capacity (CFS)	D/S Flowline Elev. (ft)	U/S Flowline Elev. (ft)																	
1	0	Conc. Headwall to JB	24	4.31	46.97	903.05	905.55	A	3.1	20	0.65	6.70	13.50	0.013	226.22	0.36%	58	0.21	4.30	906.74	906.50	0.03	907.02	906.79
2	1	JB to JB	24	3.17	40.28	905.55	916.50		3.1	20	0.65	6.70	13.50	0.013	226.22	0.36%	332	1.18	4.30	907.95	906.76	0.03	908.23	907.05

NOTE: The upstream hydraulic grade line was calculated by using the tailwater elevation of 906.5 as the hydraulic grade line downstream.

OVERFLOW WEIR FOR SEDIMENT BASIN CALCULATIONS

Overflow Weir for Sediment Basin Calculations
Hoffman Lane/FM 306 Elementary School
WPAP Modifications

Overflow Weir for Sediment Basin Calculations

Overflow Weir Calculation: $Q = C*L*H^{3/2}$

Variables:	
C (Coefficient for Broad Crested Weirs)	3.087
L (Length of weir crest)	12 ft
H (Depth of flow over weir)	0.5 ft
Q_{weir} (Flow)	13.50 cfs

Required length of weir: 12 ft

The required length of weir to pass the flow for the 25 year frequency is 12 feet.

Overflow Weir for Sediment Basin Calculations
Hoffman Lane/FM 306 Elementary School
WPAP Modifications

Overflow Weir for Sediment Basin Calculations

Overflow Weir Calculation: $Q = C*L*H^{3/2}$

Variables:	
C (Coefficient for Broad Crested Weirs)	3.087
L (Length of weir crest)	18 ft
H (Depth of flow over weir)	0.39 ft
Q_{weir} (Flow)	13.50 cfs

The depth of the weir is 0.39 feet for an 18 feet wide weir passing the 25-year frequency of the underground storm sewer system.

Overflow Weir for Sediment Basin Calculations
Hoffman Lane/FM 306 Elementary School
WPAP Modifications

Overflow Weir for Sediment Basin Calculations

Overflow Weir Calculation: $Q = C*L*H^{3/2}$

Variables:	
C (Coefficient for Broad Crested Weirs)	3.087
L (Length of weir crest)	18 ft
H (Depth of flow over weir)	0.5 ft
Q_{weir} (Flow)	19.65 cfs

The length of the weir provided is 18 feet wide with a depth of flow over weir of 0.5 feet which will allow 19.65 cfs to go over the weir. The TCEQ requires the weir to be designed for the 25 year frequency, and the weir on the project site is designed for the 25 year frequency plus 1.5 safety factor.

VEGETATIVE FILTER STRIP FOR SOUTH ACCESS ROAD – DRAINAGE AREA 2

Stormwater Design Manager
Hoffman Lane/FM 306 Elementary School - Main Site Evaluation Worksheet
WPAP Modifications

Vegetative Filter Strip for South Access Road - Drainage Area 2

Assumptions:	
Raw Land TSS (mg/L)	80
Developed Land TSS (mg/L)	170
Rainfall - Comal County (inches)	33
Contributing Areas (Acres)	0.2
Impervious Cover - Undeveloped (Acres)	0
Runoff Coefficent (Rv) Undeveloped	0.03
Previously Undeveloped (Acres)	0.2
Developed Area (Acres)	0.2

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover	100%	
L_r =	4	Equation 3.1
Rv_r =	0.03	Equation 3.2 (100% Undeveloped)
L_m =	229	Equation 3.3
Rv_m =	0.90	Equation 3.2 (Developed Impervious Cover)
Pre Development Load (Raw)	4	
Post Development Load	229	
Required Reduction (lbs.)	180	Section 3.3.3

Vegetated Strip Calculations:

Vegetated Strip Removed (lbs.)	180	Required Area %	0.93
Strip Width	290	Required Area to be Treated	0.19
Fraction of Site Treated	0.93	Required Treatment Area (Ac)	0.10
Length of Strip Required	*15* ft		

USE **15** FT. FOR A MINIMUM LENGTH

All references refer to the TNRCC Regulations - Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.

VEGETATIVE FILTER STRIP FOR NORTH ACCESS ROAD – DRAINAGE AREA 3

Stormwater Design Manager
Hoffman Lane/FM 306 Elementary School - Main Site Evaluation Worksheet
WPAP Modifications

Vegetative Filter Strip for North Access Road - Drainage Area 3

Assumptions:	
Raw Land TSS (mg/L)	80
Developed Land TSS (mg/L)	170
Rainfall - Comal County (inches)	33
Contributing Areas (Acres)	0.496
Impervious Cover - Undeveloped (Acres)	0
Runoff Coefficent (Rv) Undeveloped	0.03
Previously Undeveloped (Acres)	0.496
Developed Area (Acres)	0.356
Percent Impervious Cover	0.72

BMP	Efficiency
Retention/Irrigation	100%
Vegetative Strip	85%
Detention	75%
Sand Filters	89%
Constructed Wetlands	93%

BMP in Series	Efficiency Factor
Stage 1	100%
Stage 2	80%
Stage 3	30%

Pollutant Loadings for Design

Percent Impervious Cover		72%	
	L_r =	9	Equation 3.1
	Rv_r =	0.03	Equation 3.2 (100% Undeveloped)
	L_m =	345	Equation 3.3
	Rv_m =	0.55	Equation 3.2 (Developed Impervious Cover)
Pre Development Load (Raw)		9	
Post Development Load		345	
Required Reduction (lbs.)		269	Section 3.3.3

Vegetated Strip Calculations:

Vegetated Strip Removed (lbs.)	269	Required Area %	0.92
Strip Width	360	Required Area to be Treated	0.455
Fraction of Site Treated	0.92	Required Treatment Area (Ac)	0.247
Length of Strip Required	*30* ft		

USE **30** FT. FOR A MINIMUM LENGTH

All references refer to the TNRCC Regulations - Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices.

CULVERT ANALYSISFOR 24-INCH RCP

Discharge at culvert to Sediment Basin Calculations
Hoffman Lane/FM 306 Elementary School
WPAP Modifications

Discharge at culvert to Sediment Basin Calculations:

Discharge: Q = C*I*A

Variables:		
C (Coefficient for ground cover)	0.58	
I (Intensity for 25-year rainfall, TxDOT)	6.70	
A (Area)	6.55	Ac
Q (Flow)	25.45	cfs

The discharges that will flow into the sediment basin from the school via sheet flow to the culvert for the 25-year rainfall frequency is 25.45 cubic feet per second.

TEXAS HYDRAULIC SYSTEM, CULVERT (ver. 1.1. Jan/1998)
Fri Jan 17 13:29:36 2003

CULVERT HYDRAULIC COMPUTATIONS

CULVERT NAME: 24"RCP (REV) Input Units: English
PROJECT NAME: Hofffman Elementary S Output Units: English
PROJECT CONTROL: CSJ: 0197.46.027
COUNTY: Bexar County
DESCRIPTION: Modification

ANALYZE SINGLE OPENING CULVERT

MATERIAL: CONCRETE
SHAPE: RCP CIRCULAR PIPE.
ENTRANCE: HEADWALL
PROFILE: STRAIGHT CULVERT

FREQUENCY: DISCHARGE: 25.45 cfs TAILWATER: 906.50 ft

n value: 0.0130 Ke value: 0.5000

CULVERT DIAM. = 2.00 ft BARRELS = 1

INLET station: 0.00 elevation: 907.63 ft
OUTLET station: 68.00 elevation: 905.86 ft

CULVERT OUTPUT RUN NO => 1

ANALYSIS for discharge frequency of :

Barls.	Qpb	Rise	Span	Length	Max.HW elev	Calc.HW elev	HW	Control	Veloc.	Out.depth
	cfs	ft	ft	ft	ft	ft	ft		ft/s	ft
1	25.45	2.00	0.00	56.00	0.00	911.38	3.90	Inlet	11.64	1.31

Inlet control depth = 3.90 ft
Outlet control depth = 2.97 ft

Normal depth = 1.23 ft Culvert slope = 0.02604
Critical depth = 1.77 ft Critical slope = 0.01130

RUNING MESSAGES LIST:

*Computation: Hydraulic jump occurs within culvert.
*Computation: Outlet velocity is based on tailwater conditions.

NORMAL TERMINATION OF THYSYS, CULVERT.

Hofffman Elementary School

CSJ: 0197.46.027
Bexar County
Modification

24"RCP (REV)

Shape:	Circular	Length(L):	56.00 ft
Material:	Concrete	Slope(S):	0.0260
Span:	0.00 ft	n:	0.0129
Rise:	2.00 ft	Ke:	0.50
Barrels:	1	Entrance Type:	Headwall

Discharge Description	Q total (cfs)	HW elevation (ft)	TW elevation (ft)	BW* (ft)	V out (ft)	Q over road (cfs)	Inlet Ctl HW depth (ft)	Outlet Ctl HW depth (ft)
	25.45	911.38	906.50	3.42	11.64	0.00	3.90	2.97

*Backwater (BW = HW - TW - S·L)

DATE: 1/24/2003
TIME: 3:50 PM

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MANNINGS FORMULA FOR PIPES FLOWING FULL SOLVING FOR DISCHARGE

INSTRUCTIONS

ENTER PIPE SLOPE IN FT/FT	*S=*	*0.0316* FL SLOPE IN FT/FT
ENTER PIPE DIAMETER IN FEET	*D=*	*2* DIAMETER OF PIPE IN FT.
ENTER MANNINGS N-VALUE	*N=*	*0.013* MANNINGS N-VALUE

RESULTS

Qfull= 40.214 CFS

Q=	40.2144229	DISCHARGE IN CFS
A=	3.14159	AREA IN SQ. FT.
V=	12.8006592	VELOCITY IN FPS
Hv=	2.54436142	VELOCITY HEAD IN FT.
Pw=	6.28318	WETTED PERIMETER IN FT.
R=	0.5	HYDRAULIC RADIUS IN FT.
R(2/3)=	0.62996052	HYDRAULIC RADIUS TO (2/3)
AR(2/3)=	1.97907769	AREA * HYDRA. RAD. TO (2/3)
K=	226.223803	CONVEYANCE

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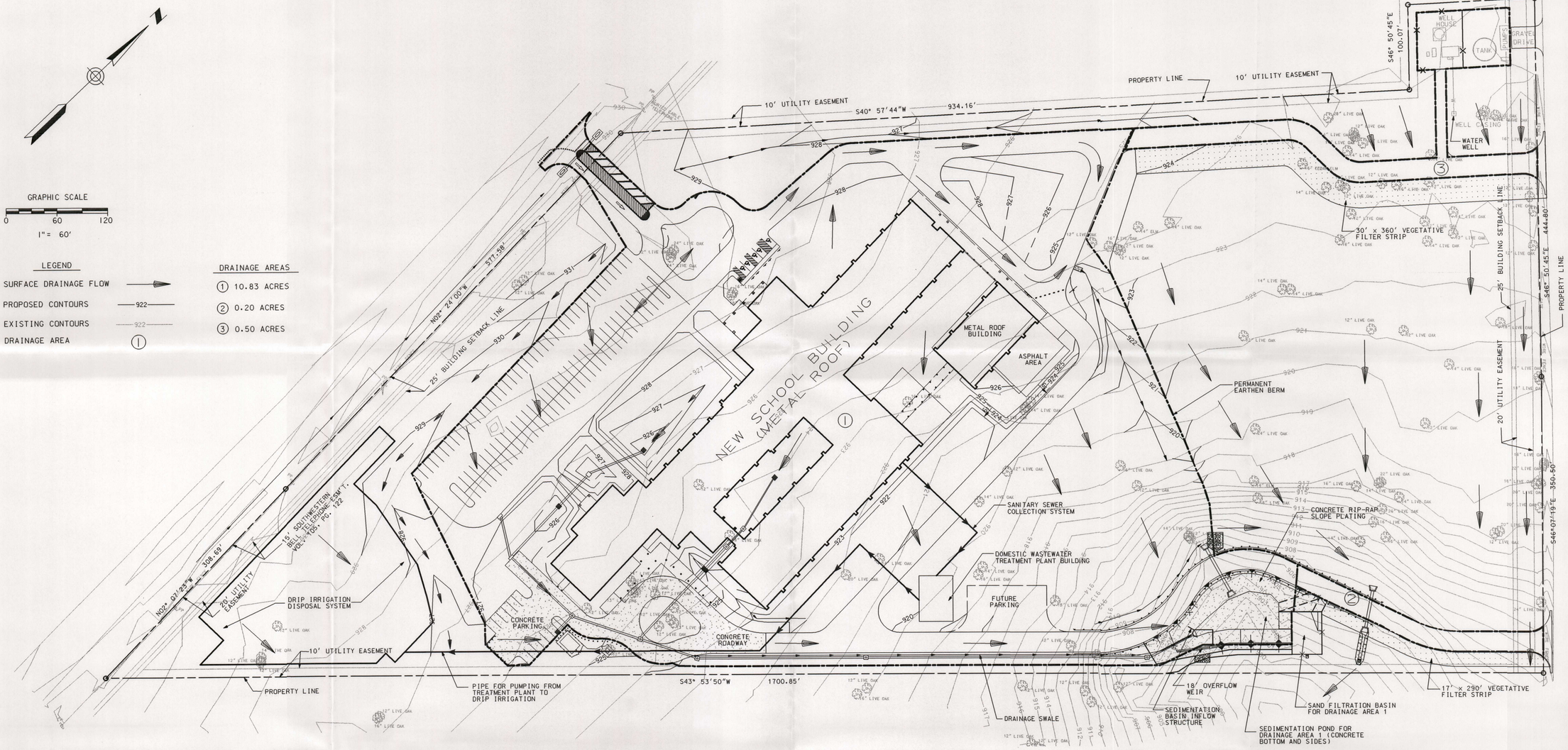

T.C.E.Q. GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TNRCC REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST BE 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 TNRCC 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 TNRCC 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 TNRCC HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF 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 SEDIMENTS ESCAPE 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 BYTHE 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 STORM WATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER 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 TEMPORARY 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 TNRCC 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.

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PHONE (512) 339-2929
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SAN ANTONIO REGIONAL OFFICE, REGION 13
14250 JUDSON RD.
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

TNRCC-0592 (REV.5/01/02)

CIVIL ENGINEERING GENERAL NOTES

1. ALL PHASES OF WORK UNDER THIS CONTRACTOR SHALL STRICTLY ADHERE TO THE REGULATIONS OF THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION, COMAL COUNTY, TEXAS, AND THE COMAL INDEPENDENT SCHOOL AS WELL AS OTHER ORDINANCES, SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THIS PROJECT.

2. FINAL DECISIONS OR JUDGMENTS ON MATTERS NOT SPECIFICALLY COVERED BY THE ABOVE STANDARDS AND REGULATIONS SHALL BE MADE BY THE ENGINEER, AS APPLICABLE.

3. CONTRACTOR WILL SECURE ALL PERMITS REQUIRED FOR CONSTRUCTION AND NOTIFY ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION.

4. THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND DEFEND, INDEMNIFY AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

5. VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.

6. "TNRCC" SHALL SIGNIFY THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. "TCM" SHALL SIGNIFY THE JUNE 1999 TECHNICAL GUIDANCE MANUAL, RG-340.

7. CONSTRUCTION OF THE PONDS ARE SUBJECT TO INSPECTION BY TNRCC REPRESENTATIVES. THEY SHALL NOT BE ACCEPTED BY THE OWNER UNTIL BOTH OF THESE ENTITIES ARE SATISFIED WITH THE INSTALLATION.

8. "TXDOT" SHALL SIGNIFY THE TEXAS DEPARTMENT OF TRANSPORTATION 1993 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES.

9. APPLY "PRIME COAT" (MC-30) AT A RATE OF 0.2 GAL/S.Y. MAXIMUM TO THE TOP OF THE FLEXIBLE BASE COURSE ON ACCESS DRIVES PRIOR TO THE PLACEMENT OF HOT MIX ASPHALTIC PAVEMENT.

10. "HOT MIX ASPHALTIC CONCRETE" (HMAC) PAVEMENT SHALL BE TYPE D ACCORDING TO TXDOT ITEM 340. PLACE THE HMAC ON DRY, COMPACTED BASE AND AT PROPER TEMPERATURES.

11. "FLEXIBLE BASE" SHALL BE TYPE A OR B, GRADE 1 OR 2, ACCORDING TO TXDOT ITEM 247, COMPACTED TO 95% OF MAXIMUM DRY DENSITY AT A MOISTURE CONTENT ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR) PROCEDURES. MAINTAIN WATER CONTENTS NEAR OPTIMUM TO PROMOTE COMPACTION. TEST BY ASTM D-2922 (NUCLEAR METHOD)

12. GRAVEL SHALL BE COMPOSED OF WELL-GRADED, WASHED RIVER GRAVEL, APPROVED BY THE ENGINEER. ONE HUNDRED (100) PERCENT PASSING A TWO-INCH SIEVE, AT LEAST NINETY-FIVE(95) PERCENT PASSING A ONE AND THREE-QUARTER INCH (1¾") SIEVE, AND AT LEAST NINETY PERCENT RETAINED ON A ONE-HALF INCH (½") SIEVE.

13. ALL GEOTEXTILE FABRICS AND CLAY LINERS SHALL MEET THE REQUIREMENTS OF THE TNRCC TGM, PAGE 3-32.

14. PROVIDE CLASS "A" CONCRETE ACCORDING TO TXDOT ITEM 421 WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. CONCRETE SHOULD HAVE 3 TO 5 PERCENT ENTRAINED AIR. CAST AND PLACE CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET FORTH BY THE AMERICAN CONCRETE INSTITUTE.

15. REINFORCING STEEL SHALL BE FROM NEW BILLET AND SHALL HAVE DEFORMATIONS CONFORMING TO ASTM A-615 AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

A-615, GRADE 40.....#3 BARS AND DOWELS.
A-185.....WELDED WIRE FABRIC
A-615, GRADE 60.....ALL OTHER REINFORCING.

ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS, EXCEPT WHERE REFERRING TO CLEARANCE. USE PLASTIC BAR SUPPORTS (CHAIR) TO HOLD REINFORCEMENT IN POSITION DURING CONCRETE PLACEMENT OPERATIONS. SUPPORT THE REINFORCING STEEL TO OBTAIN A MINIMUM OF 2.5 INCHES OF CONCRETE COVER.

16. CONSTRUCT SITE GRADING IMPROVEMENTS TO THE FOLLOWING ELEVATION TOLERANCES:

DRAINAGE FACILITIES.....+0.02 FOOT
GRADING/LANDSCAPING.....+0.16 FOOT

SHOULD ANY ELEVATIONS BE FOUND TO BE OUT OF LEVEL BEYOND THE STATED TOLERANCE AFTER CONTRACTOR'S OPERATIONS, RETURN AND CORRECT THE GRADING. REMOVE AND DISPOSE OF ALL EXCESS MATERIALS AT CONTRACTOR'S EXPENSE.

17. PROJECT TREES DURING CONSTRUCTION ACCORDING TO FIGURE 2-1 OF THE TNRCC TGM.

18. COVER THE SITE DISTURBED DURING CONSTRUCTION WITH LIVE GRASS BEFORE ACCEPTANCE. USE SOD AND HYDRAULICALLY MULCH WITH OVER SEED THAT WILL PROVIDE AT LEAST 90 PERCENT COVERAGE, DEMONSTRATE GROWTH AND COVERAGE THROUGHOUT ONE YEAR.

19. EXISTING ABOVE GROUND UTILITIES HAVE BEEN PLOTTED BY DIRECT FIELD INVESTIGATION. UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND REQUIRE VERIFICATION BY THE CONTRACTOR TO ESTABLISH THEIR EXACT LOCATION AND DEPTH. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON DRAWINGS. DEAD UTILITY LINES SHALL BE SUITABLY CAPPED.

20. REPAIR OR REPLACE ANY EXISTING OFF-SITE IMPROVEMENTS OR UTILITY REMOVED, DAMAGED, OR UNDERCUT BY CONTRACTOR'S OPERATIONS AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY AT THE CONTRACTOR'S EXPENSE.

21. POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM D-3034 FOR SDR 35. JOINTS SHALL BE ELASTOMERIC GASKET MATERIALS CONFORMING TO ASTM D-3212. INSTALLATION SHALL CONFORM TO ASTM D-3921.

22. DESIGN CALCULATIONS ARE INCLUDED IN THE REPORT TITLED "MODIFICATIONS TO A PREVIOUSLY APPROVED WATER POLLUTION ABATEMENT PLAN FOR HOFFMAN LANE ELEMENTARY SCHOOL".

MODIFIED PERMANENT EROSION CONTROL PLAN

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

STATE OF TEXAS
JASON WILLEGAN
52713
REGISTERED PROFESSIONAL ENGINEER
2-27-03

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

No.	Date	Revision	Approved

SCALE: 1"= 60' DATE: 01/07/03
DESIGNED BY: PJ
DRAWN BY: SMG
CHECKED BY:
APPROVED BY:
PROJECT NO: 2094.20.001.300

Sheet Number

SHT 1 OF 4

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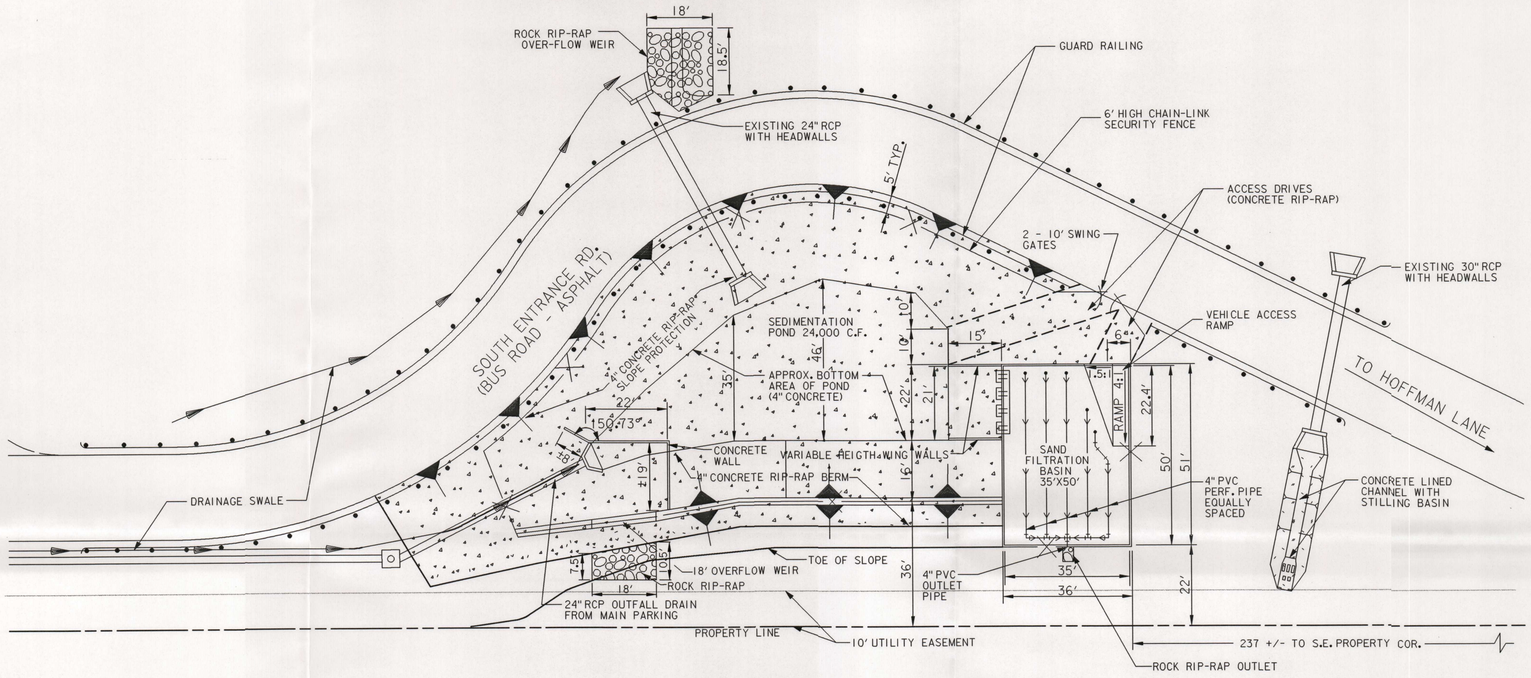
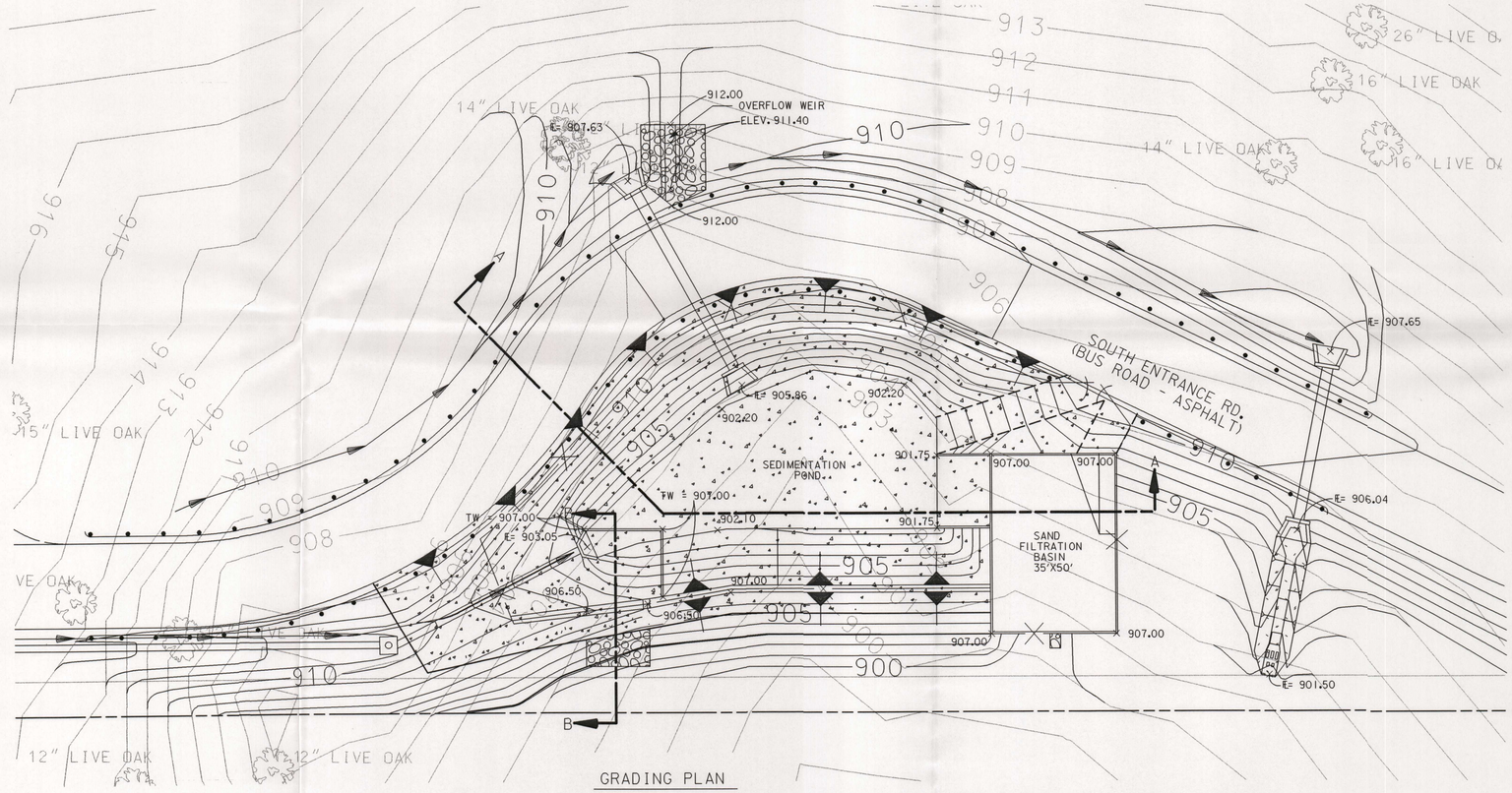


DIMENSION CONTROL PLAN



GRADING PLAN

NOTE: SEE SHEET 3 FOR SECTION A-A & B-B

MODIFIED PERMANENT EROSION CONTROL STRUCTURE DIMENSIONAL AND GRADING PLANS

GRAPHIC SCALE
0 20 40
1" = 20'

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

STATE OF TEXAS
JOHN W. LEGATE
52713
REGISTERED PROFESSIONAL ENGINEER

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

No.	Date	Revision	Approved

SCALE: 1" = 20' DATE: 01/07/03
DESIGNED BY: PJ
DRAWN BY: SMG
CHECKED BY:
APPROVED BY:
PROJECT NO: 2094.20.001.300

Sheet Number
SHT 2 OF 4

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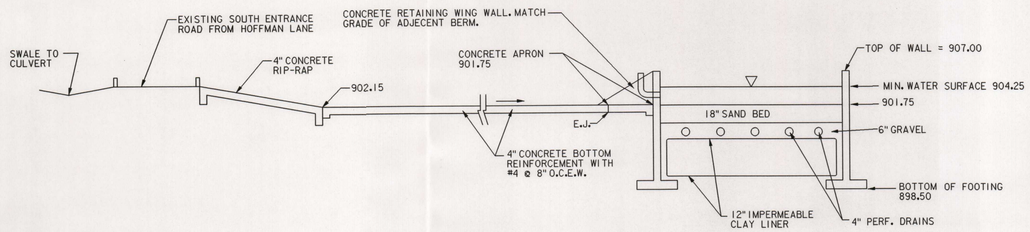
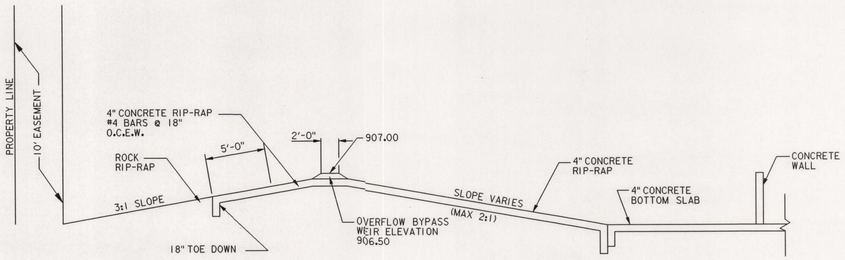
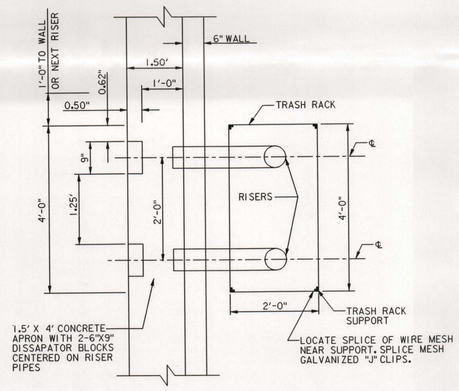


SECTION A-A
N.T.S.

SECTION THROUGH BASIN

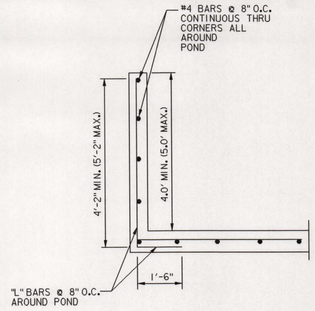


SECTION B-B
N.T.S.

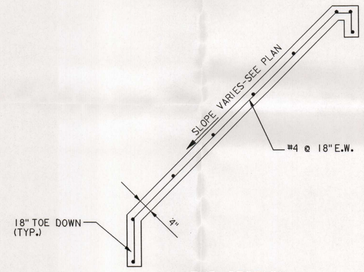


TOP VIEW

RISER DETAILS
N.T.S.

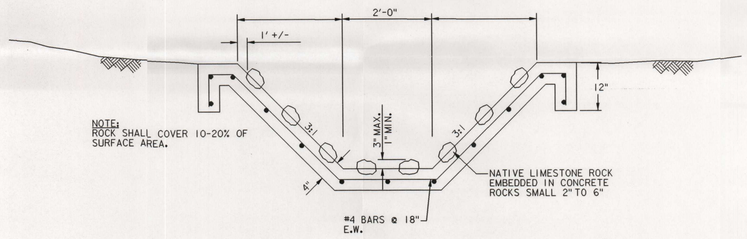


REINFORCING DETAIL PLAN
N.T.S.

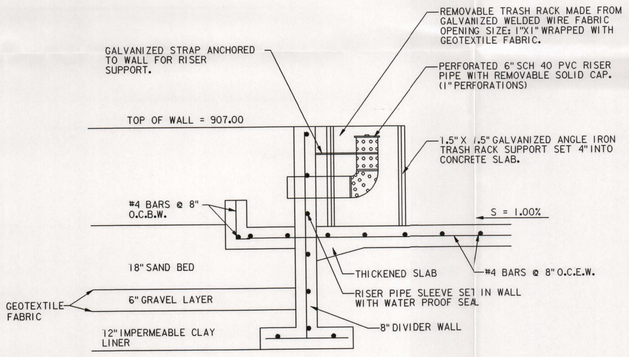


TYP. SECTION

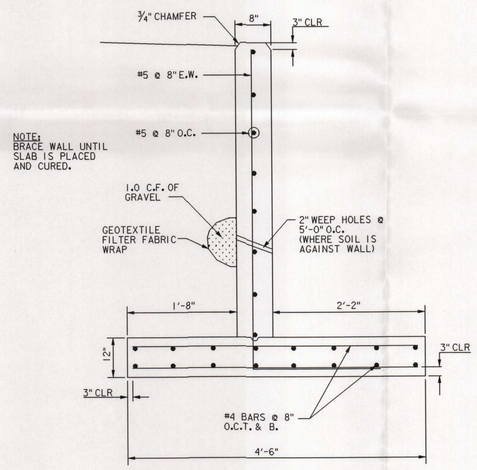
CONCRETE RIP-RAP DETAIL
N.T.S.



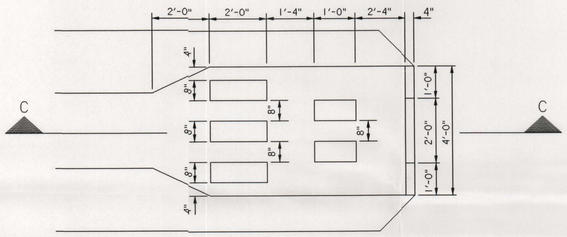
TYPICAL SECTION CONCRETE CHANNEL
N.T.S.



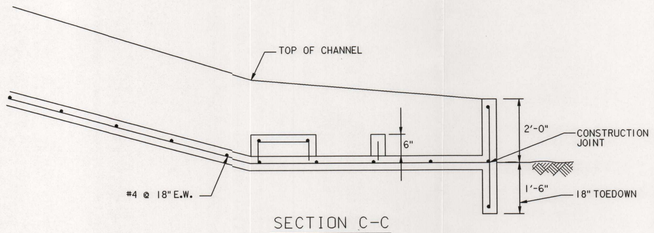
TRASH RACK 1/2 RISER DETAIL
N.T.S.



FILTRATION BASIN RETAINING WALL DETAIL
N.T.S.



PLAN



SECTION C-C
N.T.S.

STILLING BASIN DETAIL

PERMANENT EROSION CONTROL STRUCTURE DETAILS

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

STATE OF TEXAS
LYNN MILLEGAN
52713
REGISTERED PROFESSIONAL ENGINEER
03

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

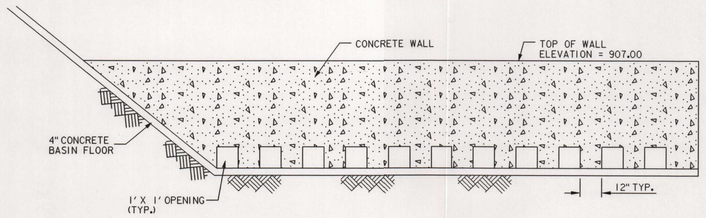
No.	Date	Revision	Approved

SCALE:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
PROJECT NO: 2094.20.001.300

Sheet Number

SHT 3 OF 4

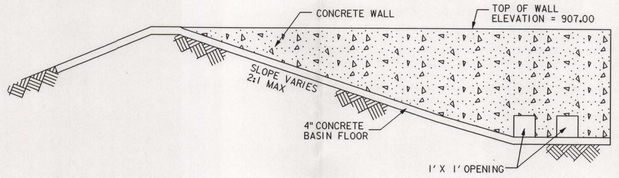
w:#0191#46#027 - Hoffman WFAP#production#C3.dgn 02/20/2003 09:08:52 AM



SECTION D-D

SEDIMENTATION BASIN INFLOW STRUCTURE DETAIL

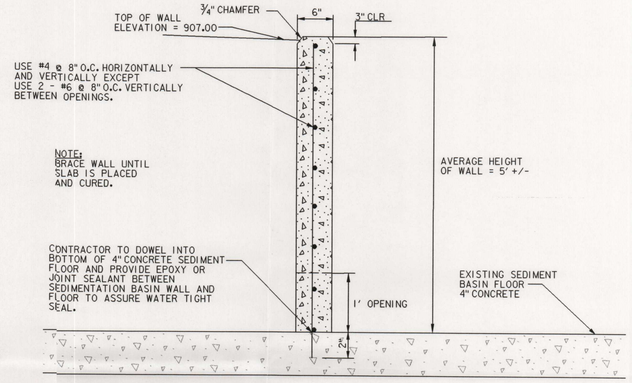
N.T.S.



SECTION E-E

SEDIMENTATION BASIN INFLOW STRUCTURE DETAIL

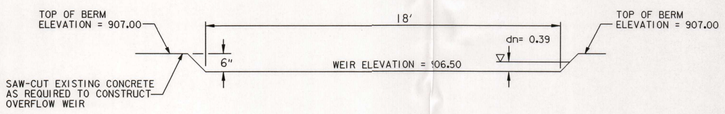
N.T.S.



SECTION F-F

SEDIMENTATION BASIN INFLOW STRUCTURE DETAIL

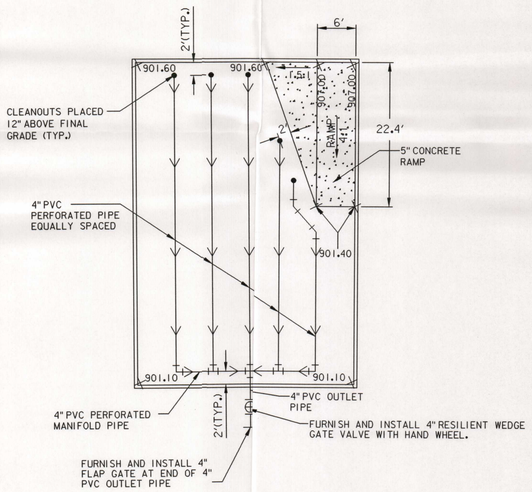
N.T.S.



SECTION G-G

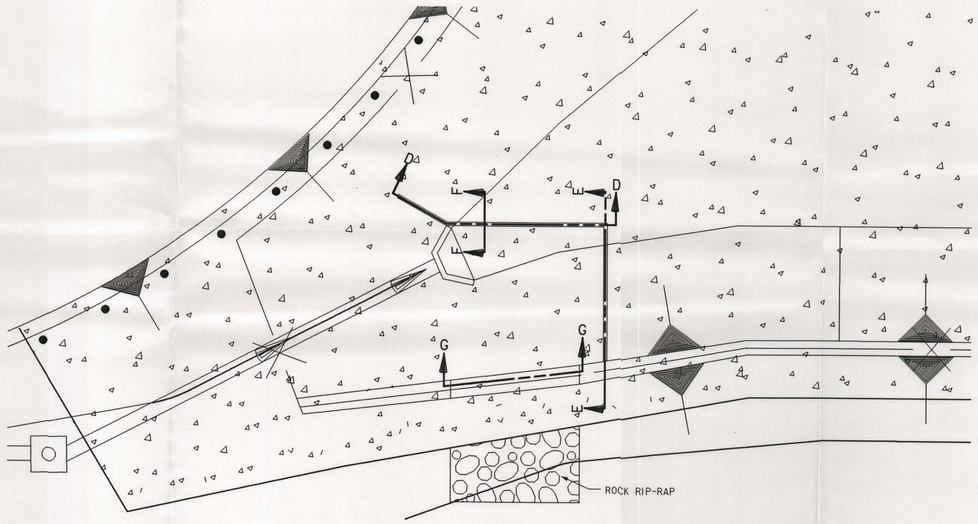
OVER FLOW WEIR AT SEDIMENTATION BASIN

N.T.S.



PIPING LAYOUT SAND FILTRATION BASIN

N.T.S.



PLAN

SEDIMENTATION BASIN INFLOW STRUCTURE

SCALE: 1"= 10'

PERMANENT EROSION CONTROL STRUCTURE DETAILS

Lockwood, Andrews & Newnam, Inc.
A SUBSIDIARY OF LEO A DALY

NEW ELEMENTARY SCHOOL
FM 306 / HOFFMAN
COMAL INDEPENDENT SCHOOL DISTRICT

No.	Date	Revision	Approved

SCALE: DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
PROJECT NO: 2094.20.001.300

Sheet Number

SHT 4 OF 4

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AGENT AUTHORIZATION FORM

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

I **Guillermo Nieri**
Print Name

Director of Maintenance & Operations Dept.
Title - Owner/President/Other

Of **Comal Independent School District**
Corporation/Partnership/Entity Name

have authorized **Harold L. Millegan, P.E.**
Print Name of Agent/Engineer

of **Lockwood, Andrews & Newnam, 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 Natural Resource Conservation Commission (TNRCC) 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 TNRCC's approval letter. The TNRCC is authorized to assess administrative penalties of up to $10,000 per day per violation.

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

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

4. For applicants who are not the property owner, but who have the right to control and possess and control the property, additional authorization is required from the owner.

Guillermo Nieri
Applicant's Signature

14 January 2003
Date

THE STATE OF TEXAS §

County of COMAL §

IRMA E. GRAHAM
Notary Public, State of Texas
My Commission Expires
JUNE 28, 2006

BEFORE ME, the undersigned authority, on this day personally appeared Guillermo Nieri 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 14th day of January, 2003.

Irma E. Graham
NOTARY PUBLIC

IRMA GRAHAM
Typed or Printed Name of Notary

JUNE 28, 2006
MY COMMISSION EXPIRES:

APPLICATION FEE FORM

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Plan
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: **Comal ISD – Hoffman Lane Elementary School**
REGULATED ENTITY LOCATION: **FM 306 and Hoffman Lane, East Central Comal County**
NAME OF CUSTOMER: **Comal Independent School District**

CONTACT PERSON: **Guillermo Nieri/Harold L. Millegan** PHONE: **(830) 221-2075/(210) 499-5082**
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)
Regulated Entity Reference Number (if issued): RN _____ (nine digits)

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
☒ Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. 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):

☒ **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TNRCC:**
TNRCC - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

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

Type of Plan	Size		Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling		Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks		Acres	$
Water Pollution Abatement, Non-residential	**21.370**	Acres	$ **5,000.00**
Sewage Collection System		L.F.	$
Lift Stations without sewer lines		Acres	$
Underground or Aboveground Storage Tank Facility		Tanks	$
Piping System(s)(only)		Each	$
Exception		Each	$
Extension of Time		Each	$

Harold L. Millegan — Signature
2/14/03 — Date

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 Natural Resource Conservation Commission
Edwards Aquifer Protection Program
Application Fee Schedule
30 TAC §213.14 (effective 11/14/97) & 30 TAC §213.9 (effective 6/1/99)

Water Pollution Abatement Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	<5	$500
Multiple Single Family Residential and Parks	<5 5 < 10 10 < 50 ≥50	$1,000 $2,000 $3,000 $5,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 ≥10	$2,000 $3,000 $4,000 $5,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$500 - $5,000

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	$500	$500 - $5,000

Exception Requests

PROJECT	FEE
Exception Request	$250

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$100

TNRCC CORE DATA FORM

TNRCC Core Data Form

TNRCC Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

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.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*
Modifications to a Previously Approved WPAP

2. Attachments ☒ Yes ☐ No

Describe Any Attachments: *(ex: Title V Application, Waste Transporter Application, etc.)*
Modifications to a previously approved WPAP submittal

3. Customer Reference Number-*if issued*
CN *(9 digits)*

4. Regulated Entity Reference Number-*if issued*
RN101281202 *(9 digits)*

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following: ☐ Owner ☐ Operator ☒ Owner and Operator
☐ Occupational Licensee ☐ Volunteer Cleanup Applicant ☐ Other: _____

TNRCC Use Only ☐ Superfund ☐ PST ☐ Respondent

6. General Customer Information
☒ New Customer ☐ Change to Customer Information ☐ Change in Regulated Entity Ownership ☐ No Change*
*If "No Change" and Section I is complete, skip to Section III - Regulated Entity Information.

7. Type of Customer: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation
☐ Federal Government ☐ State Government ☐ County Government ☐ City Government
☐ Other Government _____ ☒ Other **Independent School District**

8. Customer Name *(If an individual, please print last name first)* *If new name, enter previous name:*
Comal Independent School District

9. Mailing Address: **278 Loop 337**

City	State	ZIP	ZIP + 4
New Braunfels	**TX**	**78130**	

10. Country Mailing Information *if outside USA*

11. E-Mail Address *if applicable*
roy.linnartz@comalisd.org

12. Telephone Number
(830)221-2053

13. Extension or Code

14. Fax Number *if applicable*
(830)221-2009

15. Federal Tax ID *(9 digits)*
1-74-6001777-9

16. State Franchise Tax ID Number *if applicable*

17. DUNS Number *if applicable (9 digits)*

18. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

19. Independently Owned and Operated?
☒ YES ☐ NO

SECTION III: Regulated Entity Information

20. General Regulated Entity Information
☒ New Regulated Entity ☐ Change to Regulated Entity Information ☐ No Change*
*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*
Hoffman Lane Elementary School

22. Street Address: (No P.O. Boxes)	4600 FM 306			
	City	State	ZIP	ZIP + 4
	New Braunfels	TX	78132	
23. Mailing Address	4600 FM 306			
	City	State	ZIP	ZIP + 4
	New Braunfels	TX	78132	

24. E-Mail Address: roy.linnartz@comalisd.org		
25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*
(830)221-2053		(830)221-2009

28. Primary SIC Code *(4 digits)*	29. Secondary SIC Code *(4 digits)*	30. Primary NAICS Code *(5 or 6 digits)*	31. Secondary NAICS Code *(5 or 6 digits)*
8211		611110	

32. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*
School for students in grades PK-6

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County: Comal

34. Description of Physical Location

35. Nearest City	State	Nearest ZIP
New Braunfels	TX	78132

36. Latitude (N)			37. Longitude (W)		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	47	15	98	5	50

38. TNRCC Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "unknown."*

☐ Animal Feeding Operation	☐ Petroleum Storage Tank	☐ Water Rights
☐ Title V – Air	☒ Wastewater Permit	☐ _____
☐ Industrial & Hazardous Waste	☐ Water Districts	☐ _____
☐ Municipal Solid Waste	☐ Water Utilities	☐ Unknown
☐ New Source Review - Air	☐ Licensing - TYPE(s) _____	

SECTION IV: Preparer Information

39. Name	40. Title
Harold L. Millegan	Sr. Project Manager

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
(210)499-5082		(210)499-5157

44. E-Mail Address: hlmillegan@lan-inc.com