



# O'Connor High School

## Water Pollution Abatement Plan (WPAP) Modification

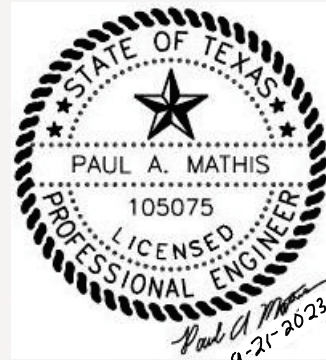
KCI Job # 762301481

### Prepared for:

Northside Independent School District  
5900 Evers Road  
San Antonio, TX 78238

### Prepared by:

KCI Technologies Inc.  
Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
2806 W. Bitters Rd., Suite 218  
San Antonio, TX 78248



September 2023

RISE TO THE  
CHALLENGE

## Texas Commission on Environmental Quality (TCEQ)

### Water Pollution Abatement (WPAP) Modification

#### O'Connor High School Agricultural Science and Technology

KCI Job # 762301481



Prepared by:

Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
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Prepared for:

**Northside Independent School District**  
5900 Evers Road  
San Antonio, TX 38248

## Table of Contents

- Edwards Aquifer Application Cover (TCEQ-20705)
- General Information Form (TCEQ-0587)
  - Attachment A – Road Map & Aerial Map
  - Attachment B – USGS Map & Edwards Recharge Zone Map
  - Attachment C – Project Description & Existing and Proposed Impervious Cover Exhibits
- Geologic Assessment Report
- Modification of a Previously Approved Plan (TCEQ-0590)
  - Attachment A – Original Approval Letter of and Approved Modification Letters
  - Attachment B - Narrative of Proposed Modification
  - Attachment C - Site Plan
- Water Pollution Abatement Plan Application (TCEQ-0584)
  - Attachment A - Factors Affecting Water Quality
  - Attachment B - Volume and Character of Stormwater
  - Attachment C - TCEQ Basin Calculations
  - Attachment D - Hydrologic Calculation
- Temporary Stormwater Section (TCEQ-0602)
  - Attachment A - Spill Prevention, Control and Response
  - 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 Maps
  - Attachment I - Inspection and Maintenance for temporary BMPs
  - Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices
  - Attachment K – SWPPP
- Permanent Stormwater Section (TCEQ-0600)
  - Attachment B - BMPs for Upgradient Stormwater
  - Attachment C - BMPs for Onsite Stormwater
  - Attachment D - BMPs for Surface Streams
  - Attachment F - Construction Plans & TCEQ Construction Notes
  - Attachment G - Inspection, Maintenance, Repair and Retrofit
  - Attachment I - Measures for Minimizing Surface Stream Contamination
- Agent Authorization Form (TCEQ-0599)
- Application Fee Form (TCEQ-0574)
- Core Data Form (TCEQ-10400)

# **Edwards Aquifer Application Cover (TCEQ-20705)**

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

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

### Administrative Review

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

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

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited.**
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

**Mid-Review Modifications**

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

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

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

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

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

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

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

<b>1. Regulated Entity Name:</b> O’Connor High School Agricultural Area					<b>2. Regulated Entity No.:</b> 104754304				
<b>3. Customer Name:</b> Leroy San Miguel, Assistant Superintendent for Facilities and Operations					<b>4. Customer No.:</b> 601104169				
<b>5. Project Type:</b> (Please circle/check one)	New	Modification			Extension	Exception			
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential	Non-residential			<b>8. Site (acres):</b>			26.940 out of 157.652	
<b>9. Application Fee:</b>	\$10,000	<b>10. Permanent BMP(s):</b>				1			
<b>11. SCS (Linear Ft.):</b>	611	<b>12. AST/UST (No. Tanks):</b>				0			
<b>13. County:</b>	Bexar	<b>14. Watershed:</b>				Leon Creek			

# Application Distribution

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

[http://www.tceq.texas.gov/assets/public/compliance/field\\_ops/eapp/EAPP%20GWCD%20map.pdf](http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf)

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

<b>Austin Region</b>			
<b>County:</b>	<b>Hays</b>	<b>Travis</b>	<b>Williamson</b>
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	—	—	—	—
Region (1 req.)	—	—	—	—	—
County(ies)	—	—	—	—	—
Groundwater Conservation District(s)	<input checked="" type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA <input type="checkbox"/> Medina	<input type="checkbox"/> EAA <input type="checkbox"/> Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input checked="" type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park <input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.



Print Name of Customer/Authorized Agent

Paul A. Mathis, P.E., PMP, LEED Green Associate, MBA 11/7/2023

Signature of Customer/Authorized Agent

Date

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



# **General Information Form (TCEQ-0587)**

# General Information Form

## Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

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

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

## Signature

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

Print Name of Customer/Agent: Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
Practice Leader | Senior Associate

Date: 9/22/2023

Signature of Customer/Agent:

  
\_\_\_\_\_

## Project Information

1. Regulated Entity Name: O'Connor High School Agricultural Science and Technology
2. County: Bexar
3. Stream Basin: Helotes Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer Authority
5. Edwards Aquifer Zone:  
 Recharge Zone  
 Transition Zone
6. Plan Type:  
 WPAP  SCS

Modification  
 AST

UST  
 Exception Request

7. Customer (Applicant):

Contact Person: Jacob Villarreal, Executive Director of Construction and Engineering  
Entity: Northside Independent School District  
Mailing Address: 5900 Evers Road  
City, State: San Antonio, TX Zip: 78238  
Telephone: (210) 397-8500 FAX: (210) 397-8500  
Email Address: jacob.villarreal@nisd.net

8. Agent/Representative (If any):

Contact Person: Paul A. Mathis, P.E. LEED Green Assoc., MBA, Praticce Leader \ Senior Associate  
Entity: KCI Technolgies, Inc.  
Mailing Address: 2806 W. Bitters Rd., Ste. 218  
City, State: San Antonio, TX Zip: 78248  
Telephone: (210) 641-9000 FAX: (210) 41-6440  
Email Address: paul.mathis@kci.com

9. Project Location:

- The project site is located inside the city limits of Helotes.  
 The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of \_\_\_\_\_.  
 The project site is not located within any city's limits or ETJ.

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

O'Connor High School is located in southwest corner of intersection of Bandera Road and Leslie Road. The addition of the new buildings will be in the southwest corner of the school property.

11.  **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12.  **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
- Project site boundaries.
  - USGS Quadrangle Name(s).
  - Boundaries of the Recharge Zone (and Transition Zone, if applicable).
  - Drainage path from the project site to the boundary of the Recharge Zone.

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

Survey staking will be completed by this date: \_\_\_\_\_

14.  **Attachment C – Project Description.** Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

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

15. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site
- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Uncleared)
- Other: Existing O'Connor High School Campus

### ***Prohibited Activities***

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

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
- (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
- (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
- (4) The use of sewage holding tanks as parts of organized collection systems; and
- (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
- (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17.  I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:
- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
  - (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
  - (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

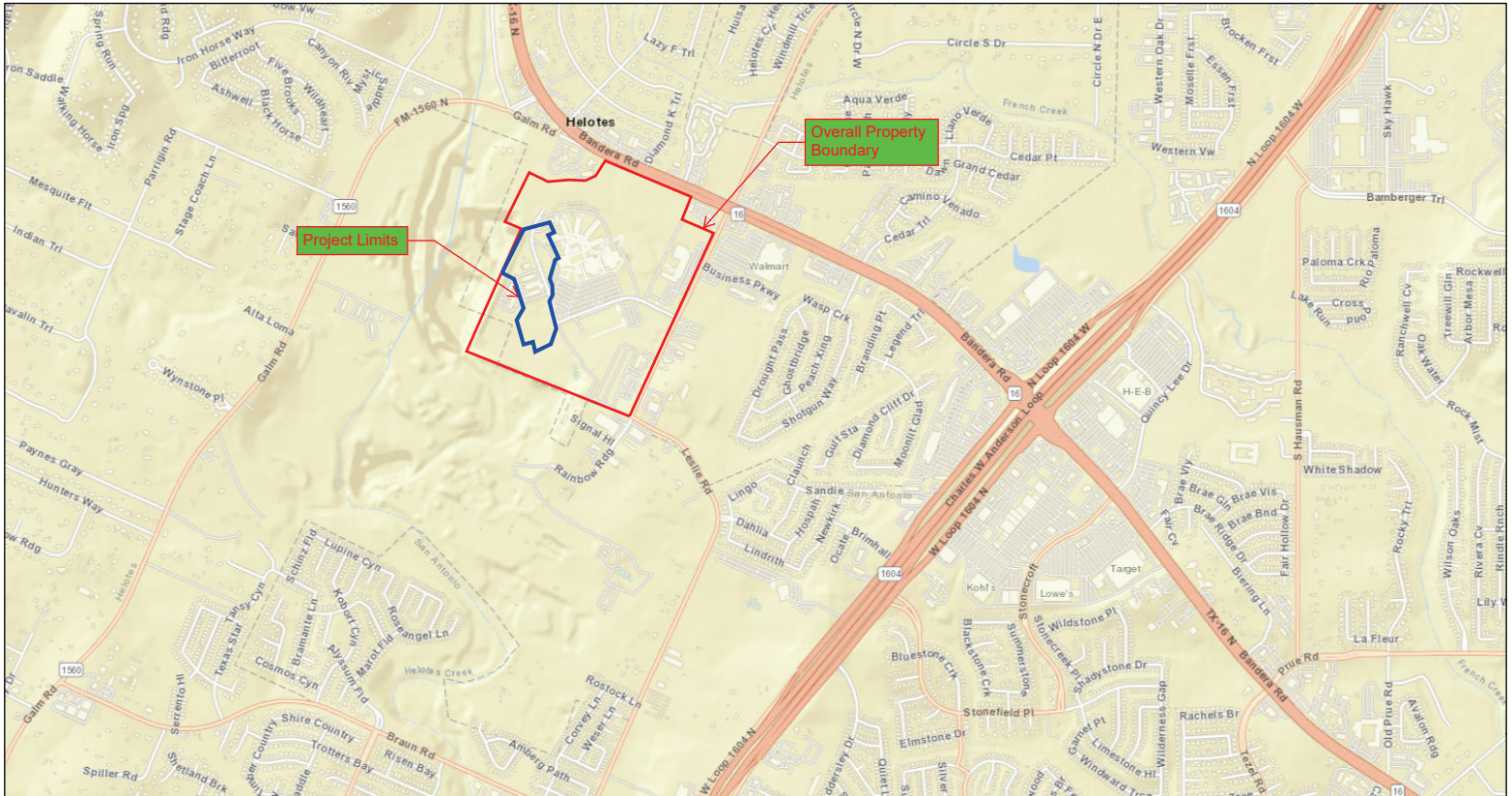
### ***Administrative Information***

18. The fee for the plan(s) is based on:
- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
  - For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
  - For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
  - A request for an exception to any substantive portion of the regulations related to the protection of water quality.
  - A request for an extension to a previously approved plan.
19.  Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:
- TCEQ cashier
  - Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
  - San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)
20.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
21.  No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

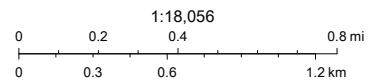
# **Attachment A**

Road Map & Aerial Map

# Road Map



7/10/2023, 3:05:49 PM



BCAD, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

USGS  
2021 USGS

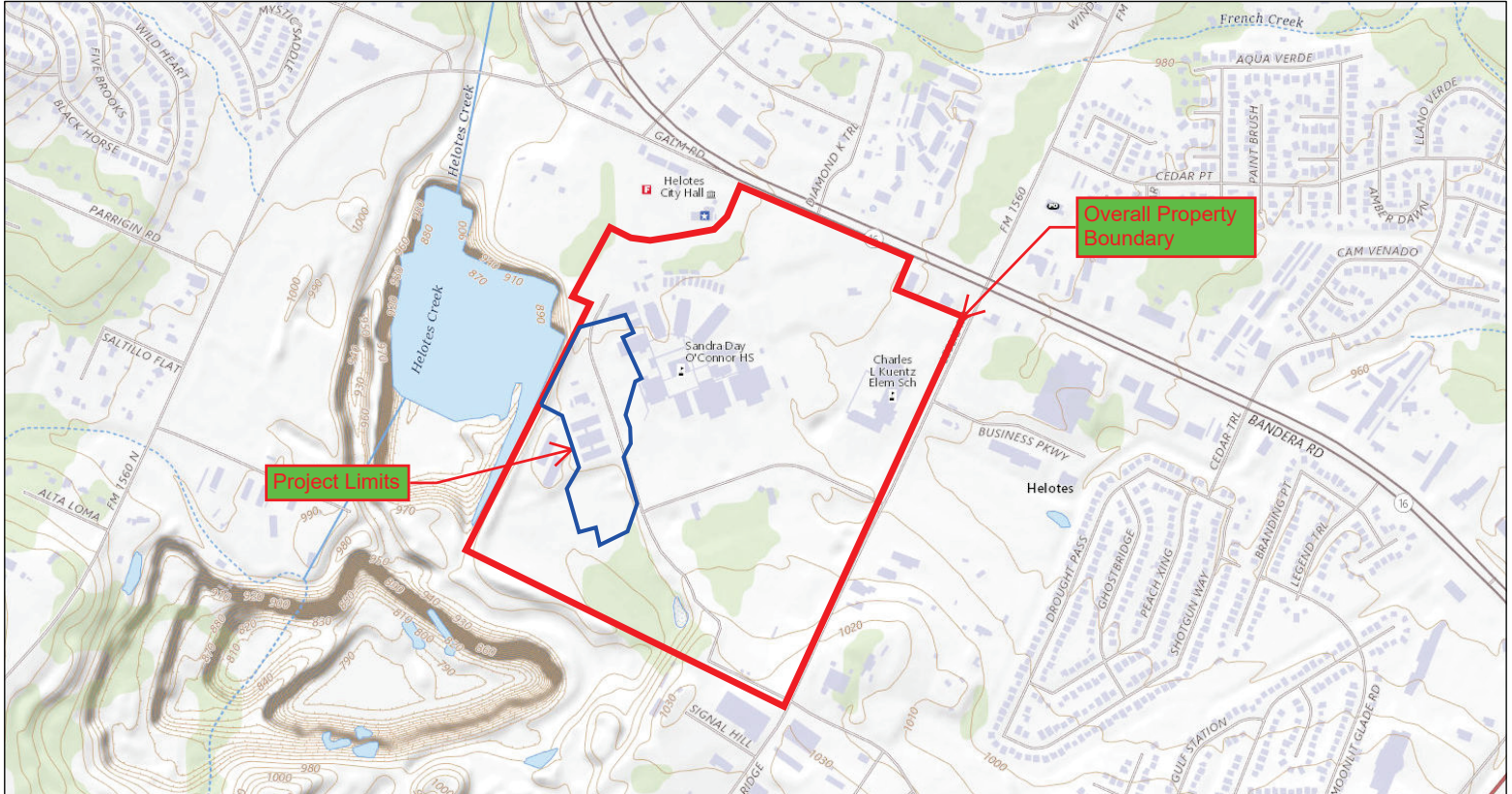




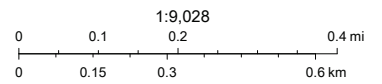
# **Attachment B**

USGS and Edwards Recharge Zone Maps

# USGS Map



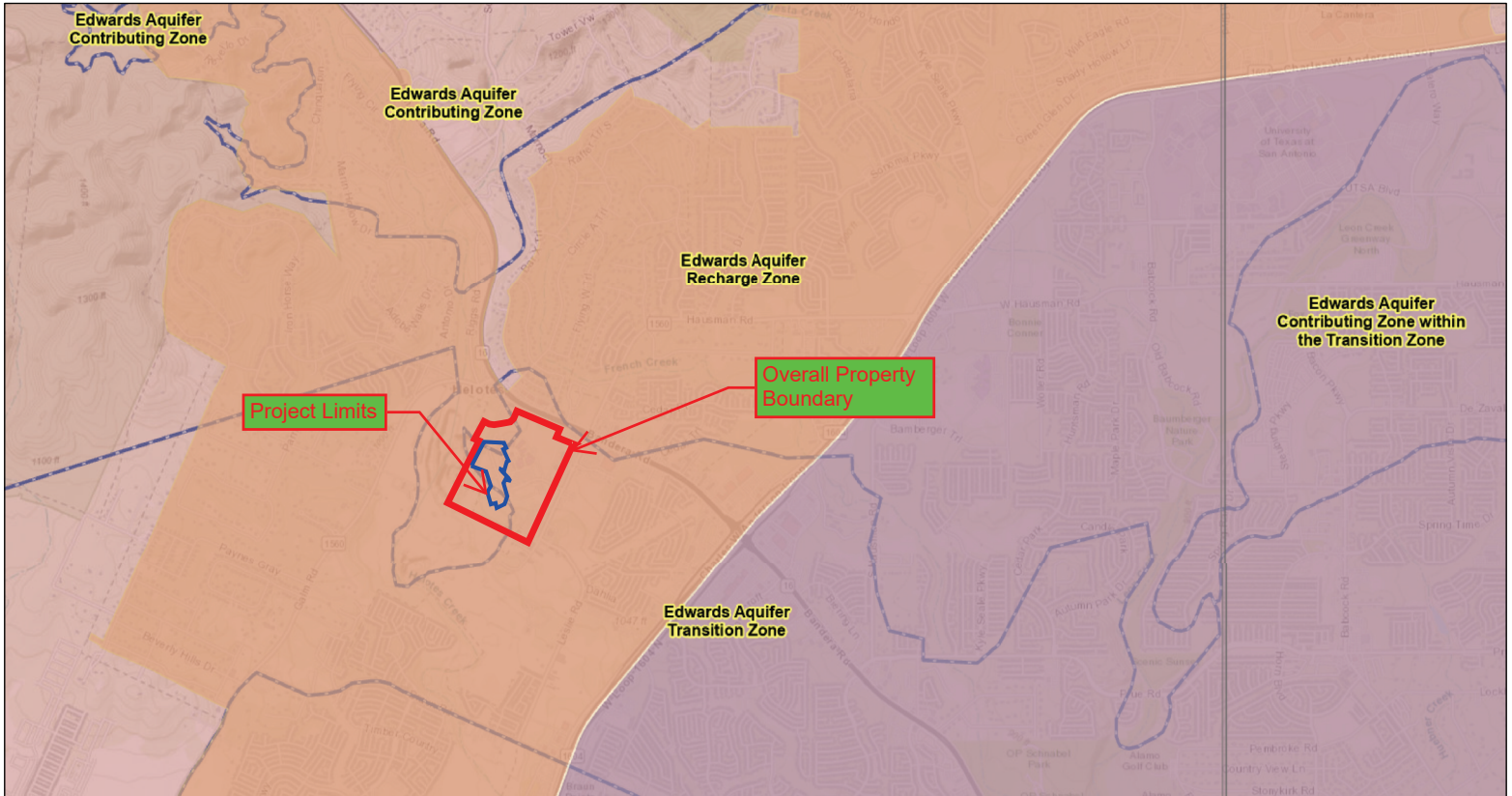
7/10/2023, 3:58:39 PM



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures

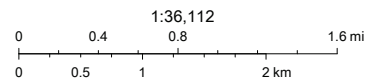
USGS  
2021 USGS

# Edwards Aquifer Map



9/21/2023, 8:23:39 AM

- |                                       |                                    |                            |
|---------------------------------------|------------------------------------|----------------------------|
| Edwards Aquifer Label                 | City/Place                         | TX Counties                |
| Edwards Aquifer Boundary              | Groundwater Conservation Districts | 7.5 Minute Quad Grid       |
| Edwards Aquifer Boundary central line | Edwards Aquifer Authority          | TCEQ_EDWARDS_OFFICIAL_MAPS |
|                                       | Trinity Glen Rose GCD              |                            |



TCEQ, BCAD, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METINASA, EPA, USDA

# **Attachment C**

## **Project Description**

## **PROJECT OVERVIEW**

Northside ISD is looking at adding new buildings and parking lots (as shown in enclosed Overall Site Plan) to O'Connor High School. The site is located at 12221 Leslie Road within the City limits of Helotes with the legal description is CB 4480B BLK 1 LOT 4 EXC NE IRR 5FT HELOTES AREA HIGH SCHOOL, Bexar County, Texas. The site is entirely located within Leon Creek Watershed and a portion of it is within the 100-year FEMA floodplain, Firm Panel 48029C0220G effective September 29, 2010, as shown in Exhibits A of this report.

## **METHODOLOGY**

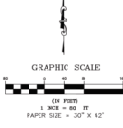
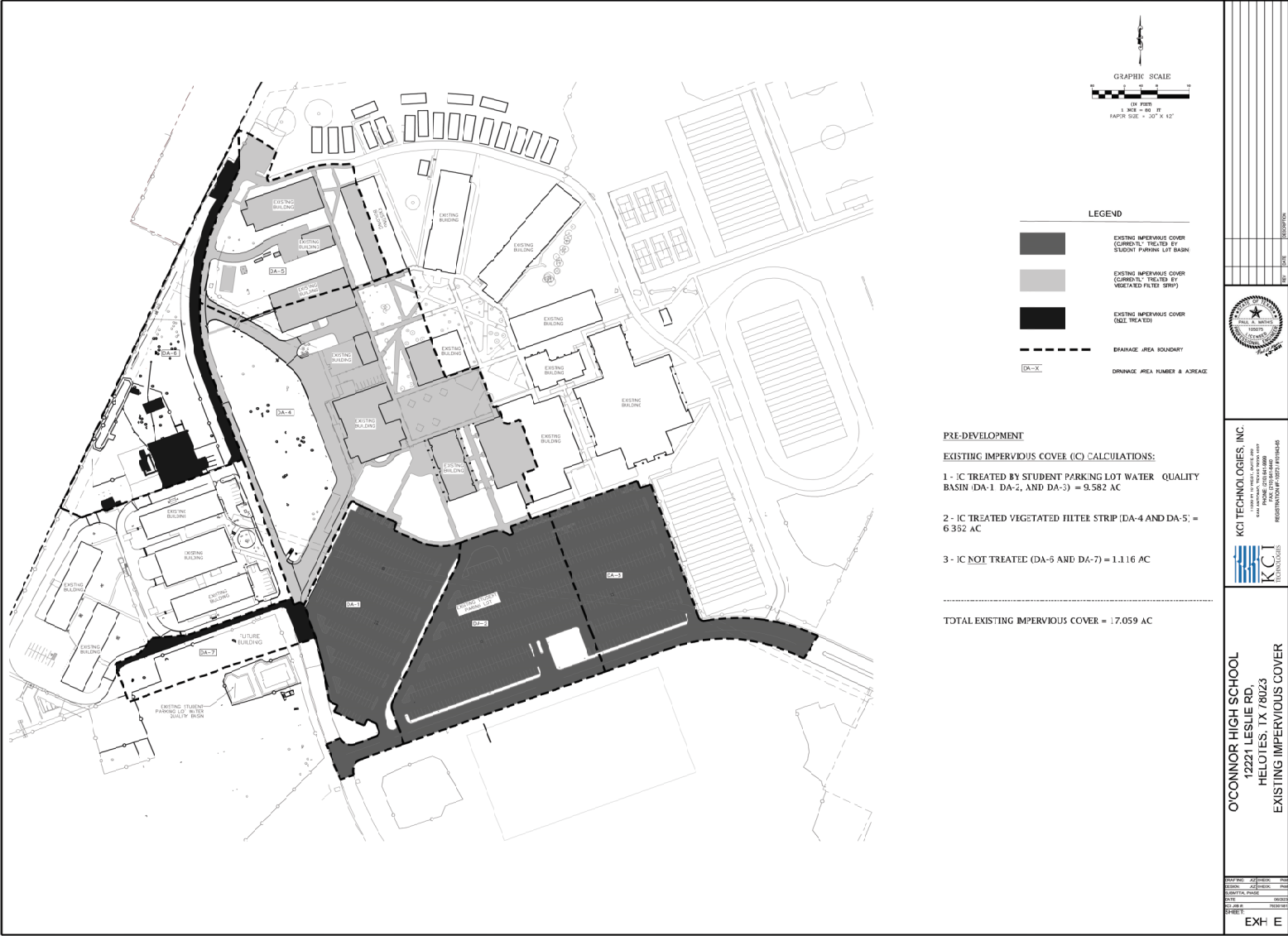
### **Overview**

#### ***Existing Hydrology***

Runoff generated from the existing Students Parking, existing drainage areas 1, 2 and 3 as shown in enclosed Existing Drainage Plan HDY 1.0 is mitigated to the existing Water Quality Basin located south of the students parking lot via underground pipes. The runoff from the existing drainage areas 4 and 5 are conveyed via the existing channel to the floodplain on the southwest corner of the property. In drainage area 6, portion of the runoff drainages to the existing query west of the site, and the other portion drainages to the existing road between drainage areas 6 and 7. Drainage area 7 directly drainages to the floodplain southwest of the site as shown in enclosed Existing Drainage Plan HDY 1.0.

#### ***Proposed Hydrology***

The increase in runoff generated from this development will be conveyed to the existing Water Quality Basin located south of the students parking lot as shown HYD 2.0 - Proposed Hydrology Plan (Exhibit D of this report). This increase in runoff will be treated in accordance with TCEQ requirements and the Water Quality Basin will be upsized to accommodate the increase in runoff. After runoff has been treated, it will be discharged via an outfall to the FEMA floodplain portion of the site.



- LEGEND**
- EXISTING IMPERVIOUS COVER (CURRENTLY TREATED BY STUDENT PARKING LOT BASIN)
  - EXISTING IMPERVIOUS COVER (CURRENTLY TREATED BY VEGETATED FILTER STRIP)
  - EXISTING IMPERVIOUS COVER (NOT TREATED)
  - DRAINAGE AREA BOUNDARY
  - DRAINAGE AREA NUMBER & ABRIDGE

**PRE-DEVELOPMENT**

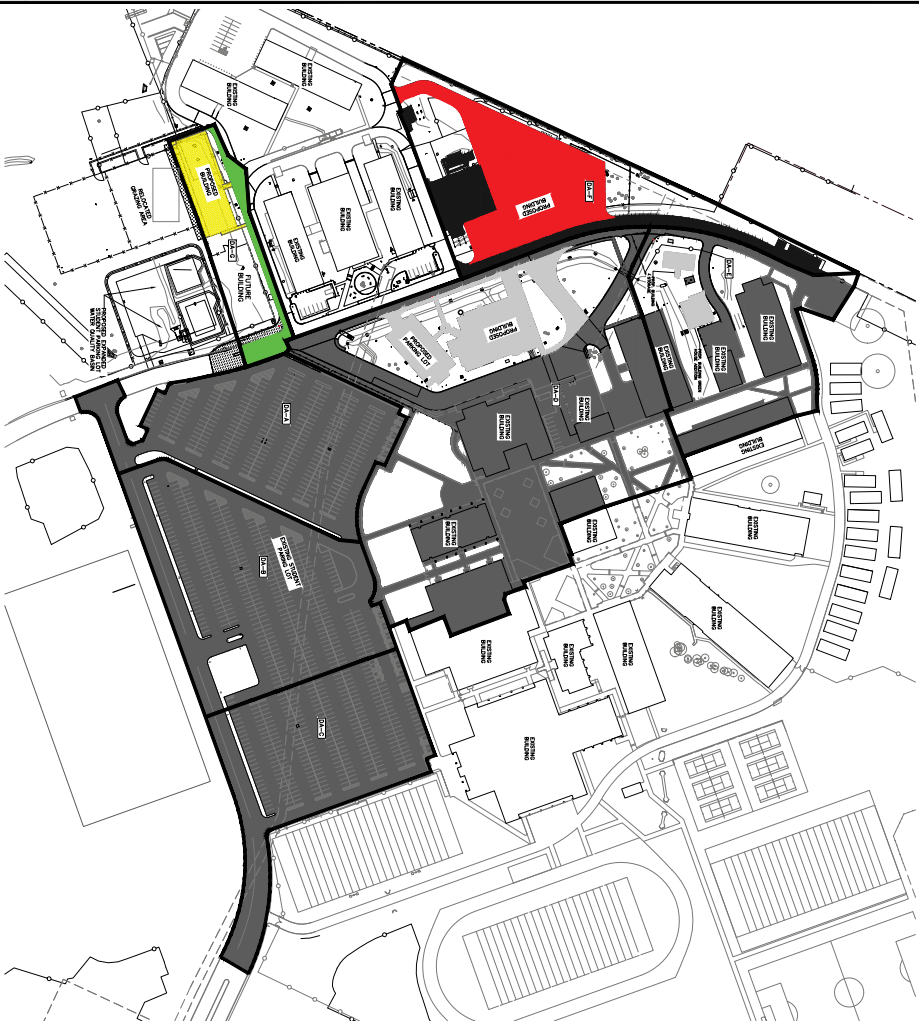
**EXISTING IMPERVIOUS COVER (IC) CALCULATIONS:**

- 1 - IC TREATED BY STUDENT PARKING LOT WATER QUALITY BASIN (DA-1, DA-2, AND DA-3) = 9.582 AC
- 2 - IC TREATED VEGETATED FILTER STRIP (DA-4 AND DA-5) = 6.352 AC
- 3 - IC NOT TREATED (DA-6 AND DA-7) = 1.116 AC

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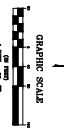
**TOTAL EXISTING IMPERVIOUS COVER = 17.059 AC**

	<b>KCI TECHNOLOGIES, INC.</b> <small>545 WINDYWAY DRIVE, SUITE 100        FORT WORTH, TEXAS 76107        REGISTERED PROFESSIONAL ENGINEERS</small>
	<b>O'CONNOR HIGH SCHOOL</b> 12221 LESLIE RD. HELOTES, TX 78023 <b>EXISTING IMPERVIOUS COVER</b>
	<small>DATE: 09/15/2011        TIME: 10:58:30        SHEET: EXH-E</small>



**LEGEND**

- EXISTING IMPERVIOUS COVER (TYPE B) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE B) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE A) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE A) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE C) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE C) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE D) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE D) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE E) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE E) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE F) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE F) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE G) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE G) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE H) (AS SHOWN AT LOT 2200)
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- EXISTING IMPERVIOUS COVER (TYPE J) (AS SHOWN AT LOT 2200)
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- EXISTING IMPERVIOUS COVER (TYPE O) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE O) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE P) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE P) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE Q) (AS SHOWN AT LOT 2200)
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- EXISTING IMPERVIOUS COVER (TYPE R) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE R) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE S) (AS SHOWN AT LOT 2200)
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- EXISTING IMPERVIOUS COVER (TYPE V) (AS SHOWN AT LOT 2200)
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- EXISTING IMPERVIOUS COVER (TYPE Y) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE Y) (AS SHOWN AT LOT 2200)
- EXISTING IMPERVIOUS COVER (TYPE Z) (AS SHOWN AT LOT 2200)
- PROPOSED IMPERVIOUS COVER (TYPE Z) (AS SHOWN AT LOT 2200)



**Post-Development Impervious Cover**

To be Treated by Upsized Student Parking Lot Water Quality Basin			
Drainage Area	Existing IC (SF)	Proposed IC (SF)	Total
DA-A	132,464,000		132,464,000
DA-B	160,657,000		160,657,000
DA-C	124,261,000		124,261,000
DA-D	202,850,000	45,307,622	248,157,622
DA-E	74,281,000	3,320,338	77,601,338
<b>TOTAL (SF)</b>	<b>694,513,000</b>	<b>48,627,960</b>	<b>743,140,960</b>
<b>Total (AC)</b>	<b>15,944</b>	<b>1,116</b>	<b>17,060</b>

**NOT to be Treated**

Drainage Area			
Existing IC (SF)	Proposed IC (SF)	Total	Total
DA-F	36,757,000	61,835,975	98,592,975
<b>TOTAL (SF)</b>	<b>36,757,000</b>	<b>61,835,975</b>	<b>98,592,975</b>
<b>Total (AC)</b>	<b>0.844</b>	<b>1,420</b>	<b>2,263</b>

**To be Treated Vegetated Filter Strip**

Drainage Area			
Existing IC (SF)	Proposed IC (SF)	Total	Total
DA-G	11,837,540	16,214,196	28,051,735
<b>TOTAL (SF)</b>	<b>11,837,540</b>	<b>16,214,196</b>	<b>28,051,735</b>
<b>Total (AC)</b>	<b>0.272</b>	<b>0.372</b>	<b>0.644</b>

GRAND TOTAL	Existing (AC)	Proposed (AC)	Total (AC)
	17,059	2,508	19,568

Difference in IC = IC Added		
	2,908	Acres

Total Project Area		
	26,936	Acres

% of Impervious Cover		
	74.130	

# **Geologic Assessment (TCEQ F-0585)**



# Geologic Assessment

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Geologist: Richard V. Klar, P.G.

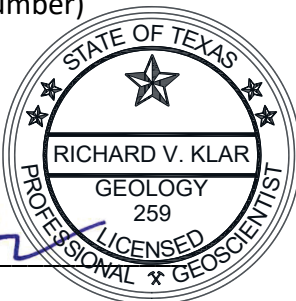
Telephone: 210-699-9090

Date: October 25, 2023

Fax: 210-699-6426

Representing: Raba Kistner, Inc., TBPG Firm #50220 / TBPE Firm #3257 for KCI Technologies, Inc. on Behalf of Northside Independent School District (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



10/26/2023

**Regulated Entity Name:** O'Connor High School Water Pollution Abatement Plan (WPAP) Modification

## Project Information

1. Date(s) of Geologic Assessment was performed: May 18, 2023

2. Type of Project:

WPAP

AST

SCS

UST

3. Location of Project:
  - Recharge Zone
  - Transition Zone
  - Contributing Zone within the Transition Zone
4.  **Attachment A – Geologic Assessment Table.** Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
5.  Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups\* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the Site Geologic Map or a separate soils map.

**Table 1 - Soil Units, Infiltration Characteristics and Thickness**

*\*Soil Group Definitions (Abbreviated)*

Soil Name	Group*	Thickness (feet)
Crawford Clay, 0 to 1 percent slopes (Ca)	D	~1 to 3
Crawford and Bexar stony soils, 0 to 5 percent slopes (Cb)	D	~1 to 3
Lewisville silty clay, 0 to 1 percent slopes (LvA)	B	~4+
Lewisville silty clay, 1 to 3 percent slopes (LvB)	B	~2 to 3
Patrick soils, 3 to 5 percent slopes (PaC)	B	~1 to 1.5

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.

6.  **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thickness is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7.  **Attachment C – Project Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8.  **Attachment D – Project Geologic Map(s).** The Project 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” = 80’

Project Geologic Map Scale: 1” = 80’

Site Soils Map Scale (if more than 1 soil type): 1” = 200’

9. Method of collecting positional data:

Global Positioning System (GPS) technology.

Other method(s). Please describe method of data collection: \_\_\_\_

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

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

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

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

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

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

There are 15 (#) test holes present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

The test holes are not in use and have been properly abandoned.

The well is not in use and will be properly abandoned.

The well is in use and complies with 16 TAC Chapter 76.

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

### ***Administrative Information***

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

# ATTACHMENTS

**ATTACHMENT A**

**GEOLOGIC ASSESSMENT TABLE  
(TCEQ-0585-TABLE)**

**COMMENTS TO GEOLOGIC ASSESSMENT TABLE**

**SOIL PROFILE**

**PROJECT SOILS MAP**

GEOLOGIC ASSESSMENT TABLE										PROJECT NAME: O' Connor High School Water Pollution Abatement Plan (WPAP) Modification Helotes, Bexar County, Texas (RRI Project No. ASF23-091-00)									
LOCATION			FEATURE CHARACTERISTICS							EVALUATION				PHYSICAL SETTING					
1A	1B *	1C *	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12	
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TRENDS (DEGREES)	DCM	DENSITY (PCFT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CUT-OFF AREA (ACRES)	TOPOGRAPHY	
						X	Y	Z											
S-1	29°33'33.77"N	98°41'15.54"W	MB (SS)	30	Qt/Kep	3,450.0	3.0-4.0	8.0-10.0					X	8	38	✓	✓	Hilltop	
S-2	29°33'29.28"N	98°41'18.05"W	MB (SS)	30	Kep	222.0	3.0-4.0	8.0-10.0					X	8	38	✓	✓	Hilltop	
S-3	29°33'34.40"N	98°41'17.62"W	MB (W)	30	Qt/Kep	2,655.0	2.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-4	29°33'34.52"N	98°41'16.40"W	MB (E)	30	Qt/Kep	3,394.0	2.0	2.0-3.0					X	6	36	✓	✓	Hilltop	
S-5	29°33'32.66"N	98°41'20.17"W	MB (G)	30	Qt/Kep	2,208.0	2.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-6	29°33'37.98"N	98°41'18.71"W	MB (SD-A1)	30	Qt/Kep	830.0	2.0-3.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-7	29°33'27.90"N	98°41'14.84"W	MB (SD-A2)	30	Qt/Kep	1,146.0	2.0-3.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-8	29°33'25.94"N	98°41'13.79"W	MB (SD-A3)	30	Qt/Kep	681.0	2.0-3.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-9	29°33'26.38"N	98°41'17.33"W	MB (WQ Pond A)	30	Qt/Kep	174.0	75.0	8.0					X	8	38	✓	✓	Hilltop	
S-10	29°33'27.40"N	98°41'22.13"W	MB (SD-B1)	30	Qt	670.0	2.0-3.0	3.0-4.0					X	6	36	✓	✓	Hilltop	
S-11	29°33'26.11"N	98°41'24.36"W	MB (WQ Pond B)	30	Qt	70.0	48.0	4.0					X	8	38	✓	✓	Hilltop	
S-12	29°33'27.17"N	98°41'20.02"W	MB (test hole B-1)	30	Kep	0.5	0.5	38.7					Z	6	36	✓	✓	Hilltop	
S-13	29°33'26.75"N	98°41'21.81"W	MB (test hole B-2)	30	Kep	0.5	0.5	38.7					Z	6	36	✓	✓	Hilltop	
S-14	29°33'32.38"N	98°41'19.75"W	MB (test hole B-3)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-15	29°33'33.82"N	98°41'20.40"W	MB (test hole B-4)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-16	29°33'36.66"N	98°41'18.07"W	MB (test hole B-5)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-17	29°33'33.43"N	98°41'17.11"W	MB (test hole B-6)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-18	29°33'32.25"N	98°41'16.64"W	MB (test hole B-7)	30	Kep	0.5	0.5	39.0					Z	6	36	✓	✓	Hilltop	
S-19	29°33'33.15"N	98°41'17.99"W	MB (test hole B-8)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-20	29°33'32.12"N	98°41'17.31"W	MB (test hole B-9)	30	Kep	0.5	0.5	38.6					Z	6	36	✓	✓	Hilltop	
S-21	29°33'30.99"N	98°41'22.89"W	MB (test hole P-1)	30	Kep	0.5	0.5	10.0					Z	6	36	✓	✓	Hilltop	
S-22	29°33'34.29"N	98°41'21.18"W	MB (test hole P-2)	30	Kep	0.5	0.5	9.3					Z	6	36	✓	✓	Hilltop	
S-23	29°33'33.96"N	98°41'18.30"W	MB (test hole P-3)	30	Kep	0.5	0.5	8.5					Z	6	36	✓	✓	Hilltop	
S-24	29°33'31.10"N	98°41'17.01"W	MB (test hole P-4)	30	Kep	0.5	0.5	8.5					Z	6	36	✓	✓	Hilltop	
S-25	29°33'26.52"N	98°41'20.54"W	MB (test hole RW-1)	30	Kep	0.5	0.5	19.4					Z	6	36	✓	✓	Hilltop	
S-26	29°33'27.23"N	98°41'18.29"W	MB (test hole RW-2)	30	Kep	0.5	0.5	19.5					Z	6	36	✓	✓	Hilltop	

\* DATUM: NAD83  
 Formations: Qt = Quaternary terrace deposits; Kep = Person Formation  
 Features: SS = sanitary sewer line; W = potable water line; E = underground electric; G = natural gas; SD = storm drain system; WQ Pond = water quality pond.  
 Note: Designations to distinguish the several storm drains and water quality ponds are for this reporting discussion purposes.

2A TYPE	TYPE	2B POINTS	8A INFILLING
C	Cave	30	N None, exposed bedrock
SC	Solution cavity	20	C Coarse - cobbles, breakdown, sand, gravel
SF	Solution-enlarged fracture(s)	20	O Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fault	20	F Fines, compacted clay-rich sediment, soil profile, gray or red colors
O	Other natural bedrock features	5	V Vegetation. Give details in narrative description
MB	Manmade feature in bedrock	30	FS Flowstone, cements, cave deposits
SW	Swallow hole	30	X Other materials: Granular bedding materials for utility lines (Features S-1 through S-5), sand filter media with impermeable liner (Features S-9 and S-11), and cuttings/bentonite (Features S-12 through S-26).
SH	Sinkhole	20	
CD	Non-karst closed depression	5	
Z	Zone, clustered or aligned features	30	

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

I have read, I understand, and I have 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. My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

  
 RICHARD V. KLAR  
 GEOLOGIST  
 LICENSE NO. 259

Date: October 26, 2023

Sheet 1 of 1

**COMMENTS TO GEOLOGIC ASSESSMENT TABLE**  
**O' Connor High School Water Pollution Abatement Plan (WPAP) Modification**  
**Helotes, Bexar County, Texas**

The locations of the following features are indicated on the *Project Geologic Map* provided as **Attachment D** of this report. The following utility trenches (i.e., sanitary sewer, potable water, electric, and natural gas), in addition to an extensive storm drain system were identified within the WPAP assessment area and plotted based on field observations of manholes, valves, meters and fire hydrants, in addition to storm drain inlets and water quality basins. The utility locations and storm drain segments were also taken from the Overall Utility and Drainage Exhibit (i.e., PDF) provided by the project engineer, KCI Technologies, Inc. (KCI, 2023).

**Manmade Features in Bedrock (MB)**

**Feature S-1**

**Feature S-1** consists of a trench for an existing 6 to 8-inch sanitary sewer line owned by San Antonio Water System (SAWS). The location of this utility was identified based on review of the referenced utility exhibit (KCI, 2023), in addition to field observations of manholes and cleanouts. On the basis of our observations and available utility information, it is inferred that the trench hosting the utility line is approximately 3-4 feet wide and installed to approximately 8-10 feet terminating in the underlying Quaternary terrace deposits (Qt) and Person Formation (Kep). The combined length of the utility trench segment within the Project area is estimated on the order of 3,450 linear feet.



**Feature S-2**

**Feature S-2** consists of a trench for an existing sanitary sewer line. The location of this utility was based on review of the referenced utility exhibit (KCI, 2023). On the basis of available utility information, it is inferred that the trench hosting the utility line is approximately 3-4 feet wide and installed to approximately 8-10 feet terminating in the underlying Person Formation (Kep). The length of the utility trench within the Project area is estimated on the order of 222 linear feet.

### **Feature S-3**

**Feature S-3** consists of trenches for existing 6- and 8-inch polyvinyl chloride (PVC) potable water lines owned by SAWS. The utility trenches were plotted based on review of the referenced utility exhibit (KCI, 2023) and field observations of fire hydrants and water meters near Buildings D and P. On the basis of our observations, it is inferred that the trenches hosting the utility lines are approximately 2-feet wide and installed 3-4 feet or more, terminating in the Qt and Kep. The length of the combined utility trenches within the project area is estimated on the order of 2,655 linear feet.



### **Feature S-4**

**Feature S-4** consists of trenches for electric lines owned by City Public Service (CPS) Energy. The utility trenches were identified based on observations of ground-mounted transformers during reconnaissance activities and review of the referenced utility exhibit (KCI, 2023). On the basis of our observations and available utility information, it is inferred that the trenches hosting the utility lines are approximately 2 feet wide and installed to approximately 2-3 feet, terminating in the underlying Qt and Kep. The trenches extend: (i) east from the Central Plant (Building D) to the agriculture barns; and (ii) north and south Buildings F and C, respectively. The length of the combined utility trenches within the Project area is estimated on the order of 3,394 linear feet.





### **Feature S-5**

**Feature S-5** consists of trenches for 1-1/4- and 4-inch natural gas lines owned by CPS Energy. The location of these utilities were based on observations of gas meters during reconnaissance activities and review of the referenced utility exhibit (KCI, 2023). On the basis of our observations and available utility information, it is inferred that the trenches hosting the utility lines are approximately 2 feet wide and installed to approximately 3-4 feet, terminating in the underlying Kep. The trenches extend from Building D to the west and follows main campus roadway to the agricultural barns. The combined length of the utility trenches within the Project area is estimated on the order of 2,208 linear feet.



### **Features S-6 through S-11**

**Features S-6, S-7, S-8, and S-10** consist of trenches hosting individual segments of a storm drain system that services the O' Connor High School campus. This drainage system discharges to water quality ponds, which ultimately discharge to Helotes Creek that is located approximately 1,230 to the southwest of the Project area. These trenches are inferred to be approximately 3-4 feet in depth, terminating into the underlying Qt and Kep.

- **Feature S-6** consists of an 18 and 24 inch storm drain reinforced concrete pipes (RCP) in various locations that extend from Building F and follow drainage swales south to a 24-inch corrugated metal pipe and daylights to an open drainage field located north of Water Quality Pond A (**Feature S-8**). The length of the utility trench segment within the Project area is estimated on the order of 830 linear feet.
- **Feature S-7** consists of a storm drain pipe mapped from a manhole near Building L, extending through the parking lots to the southwest to a diversion structure and into a 48-inch inlet pipe to Water Quality Pond A (**Feature S-9**). The length of the utility trench segment within the Project area is estimated on the order of 1,146 linear feet.
- **Feature S-8** consists of a storm drain pipe mapped from a grassy area at the south edge of the student parking lot that extends to the southwest manhole in the student parking lot that further extends west to an outlet that opens to a drainage field south of the Water Quality Pond A (**Feature S-9**). The length of the utility trench within the Project area is estimated on the order of 681 linear feet.
- **Feature S-10** consists of a 21-inch storm drain pipe mapped from manholes surrounding the agricultural barns, which are located near the southwest corner of the assessment area. The stormwater drains to Water Quality Pond B (**Feature S-11**). The length of the utility trench segment within the Project area is estimated on the order of 670 linear feet.

**Features S-9 and S-11** consist of stormwater basins (i.e., water quality ponds). After treatment through sand filter media via either Water Quality Pond A or Water Quality Pond B, stormwater is ultimately discharged to Helotes Creek, which is located approximately 1,230 feet to the southwest.

- **Feature S-9** consists of a sedimentation and filtration pond system (Pond A). The dimensions for this feature are approximately 174 feet long and 75 feet wide. The floor of the basin is approximately 8 feet below the top of the concrete headwall through which the detention pond connects to the concrete-lined stormwater collection system. This stormwater basin is underlain by the Kep.



- **Feature S-11** consists of a sand filtration basin and detention pond (Pond B). The dimensions for this feature are approximately 70 feet long and 48 feet wide. The floor of the basin is approximately 4 feet below the top of the concrete headwall through which the detention pond connects to the concrete lined stormwater collection system. This stormwater basin is underlain by the Qt.

#### **Features S-12 through S-26**

**Features S-12 through S-26** consist of test holes installed in June 2023 to support various proposed improvements within the WPAP assessment area at O' Connor High School (i.e., additional buildings, paved areas, and a retaining wall) by **Raba Kistner, Inc.** (i.e., Project No. ASA23-041-00). A total of fifteen borings were drilled using a straight flight auger and air rotary methods to depths ranging from approximately 8-1/2 to 39 feet below existing ground surface. In general, the majority of the borings encountered a surficial layer of dark brown clay approximately 1.25 to 4.5 feet in depth underlain by either a reddish-tan sandy silt, silty sand, or calcareous clay stratum to depths up to 16.5 feet. These strata are underlain by hard tan limestone comprising the top of the Limestone (Person Formation). Fill material consisting of brown clayey sand was encountered to depths ranging from 6 to 19.4 feet at several borings near the southwest portion of the WPAP assessment area, west and south of Buildings P and N, respectively. Shallow groundwater was not observed during drilling operations.

Based on the referenced geotechnical borings logs and observations in conjunction with field reconnaissance activities, the borings were effectively plugged and abandoned following completion of drilling activities using granular bentonite.

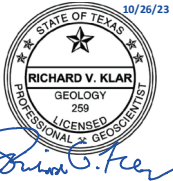
**SOIL PROFILE**  
**O' Connor High School Water Pollution Abatement Plan (WPAP) Modification**  
**Helotes, Bexar County, Texas**

SOIL SERIES	THICKNESS ON SITE	DESCRIPTION
<b>Crawford</b>	~1 to 3 feet	<b>Crawford clay, 0 to 1 percent slopes (Ca):</b> Crawford soil patches are scattered throughout the hard limestone area, mostly in the uplands with few in the valleys. The surface layer consists of dark brown or dark reddish-brown noncalcareous clay and is typically 8-10 inches thick. The subsurface layer is also noncalcareous and is redder than the surface layer. Limestone typically occurs at a depth of 24-36 inches.
	~1 to 3 feet	<b>Crawford and Bexar stony soils, 0 to 5 percent slopes (Cb):</b> These soils occur as large areas and form a nearly continuous belt extending to the west from the northeast portion of Bexar County to south of Helotes. Crawford Soils comprise approximately 51% of the series. The surface layer of Crawford soils is comprised of dark gray to dark reddish-brown, non-calcareous clay and is typically 8-9 inches thick. The subsoil contains chert fragments and limestone flags. Hard limestone below depth of 24-36 inches. Bexar soils comprise approximately 36% of the series. The surface layer is comprised of cherty clay loam and is on the order of 14-22 inches in thickness. The subsoil is cherty clay and is approximately 6-14 inches thick.
<b>Lewisville</b>	~4+ feet	<b>Lewisville silty clay, 0 to 1 percent slopes (LvA):</b> These soils occur as nearly level, broad terraces along rivers and creeks. The surface layer is approximately 24 inches thick and comprised of silty clay or light clay. The subsurface layer is a very firm but crumbly when moist brown silty clay, which is approximately 24 inches thick. This layer has a few worm casts and a few hard and soft lime concretions.
	~2 to 3 feet	<b>Lewisville silty clay, 1 to 3 percent slopes (LvB):</b> Lewisville soils occur along long narrow sloping areas that separate nearly level terrace from soils on the uplands and also occurs on slopes along drainageways. The surface layer consists of dark grayish brown clay and is typically 20 inches thick. The subsoil consists of firm but crumbly limy brown clay and is approximately 17 inches thick.
<b>Patrick</b>	~1 to 1.5 feet	<b>Patrick soils, 3 to 5 percent slopes (PaC):</b> Patrick soils occupy escarpments between terraces, above floodplains of streams that drain the limestone prairies. The slopes are moderate and complex. The surface layer is a grayish-brown to dark brown, calcareous clay loam approximately 12 inches thick. The subsurface layer is a brown, calcareous, granular clay loam approximately 5 inches thick. The layers are friable when moist.

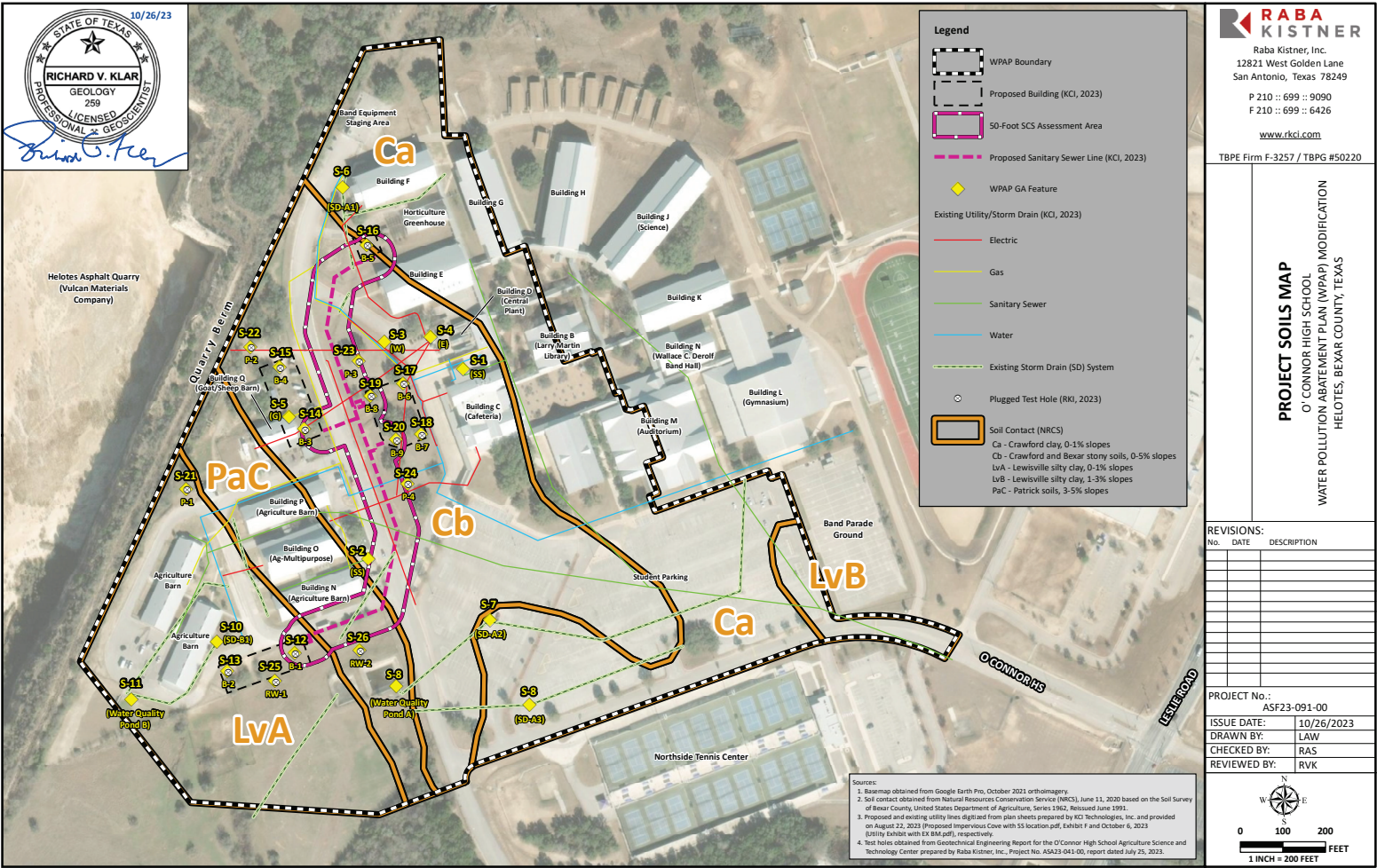
The preceding table was prepared based on *Soil Survey of Bexar County, Texas (1962, reissued June 1991)* in addition to field observations. As presented on the attached **Project Soils Map**, native soils mapped from east to west at the Project are the Lewisville silty clay, 1-3% slopes (LvB), Crawford clay (Ca) soils, Crawford and Bexar stony soils (Cb), Patrick soils, 3 to 5 percent slopes (PaC), and Lewisville silty clay, 0 to 1% slopes (LvA). The soil types are not readily observable owing to existing landscaping, pavements, hardscapes, and buildings that comprise the O' Connor High School. Below is a brief description of the mapped soil units within the WPAP assessment area.

- LvB soils are mapped at the southeast portion of the assessment area along the O Connor High school roadway entrance, which is located south of the band parade ground. This soil unit is associated with older terrace deposits along primary drainage features (i.e., river and creeks) in Bexar County. Lewisville soils are characterized as having a moderately slow permeability ranging on the order of 1.0 to 2.0 inches per hour.
- Ca soils are mapped within the main portion of the high school campus extending from the north portion of the assessment to the southwest in the student parking lot. These soils are naturally well drained, water intake is slow, and water erosion is a hazard. In addition, Ca soils have a very slow permeability, ranging on the order of 0.2 to 0.5 inches per hour. This soil unit is also described as having a high shrink swell potential.
- Cb soils are mapped west of Ca soils within the assessment area that follows the main campus roadway. These soils are weakly-developed and relatively thin, occurring over weathered limestone units of the Person Formation (Kep). These soils have a measured permeability of 1.0 to 1.5 in./hr. and are described as slow. The Crawford Series is further described as having a high shrink-swell potential.
- PaC soils are mapped along Buildings N, O, and P. The parent material is calcareous clay loam. A typical vertical profile consists of a thin surface soil layer ranging from a veneer to a few feet in thickness, typically consisting of gravelly clay loam underlain at shallow depths by hard limestone. Patrick soils are characterized as having a moderate infiltration rate with permeability on the order of 2.0 to 3.0+ in./hr. These soils are more susceptible to erosion.
- LvA soils are mapped at the southwest portion of the WPAP assessment area. LvA soils are typically associated with terrace deposits along as rivers and creek. These soils are characterized as having slow to moderate permeability and infiltration capacity on the order of 1 to 1.2 inches per hour.

As native soils were not directly observable owing to existing improvements, the geotechnical report prepared by **Raba Kistner, Inc.** (2023) was reviewed to evaluate soil and rock conditions, which were generally consistent with the soil types and conditions described above.



10/26/23



**Legend**

- WPAP Boundary (dashed line)
- Proposed Building (KI, 2023) (dotted line)
- 50-Foot SCS Assessment Area (pink shaded area)
- Proposed Sanitary Sewer Line (KI, 2023) (purple line)
- WPAP GA Feature (yellow diamond)
- Existing Utility/Storm Drain (KI, 2023) (various colored lines)
- Electric (red line)
- Gas (yellow line)
- Sanitary Sewer (green line)
- Water (blue line)
- Existing Storm Drain (SD) System (dashed green line)
- Plugged Test Hole (RKI, 2023) (white circle with dot)
- Soil Contact (NRCS) (orange outline)
- Ca - Crawford clay, 0-1% slopes
- Cb - Crawford and Beasor silty soils, 0-5% slopes
- LvA - Lewisville silty clay, 0-1% slopes
- LvB - Lewisville silty clay, 1-3% slopes
- PaC - Patrick soils, 3-5% slopes

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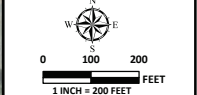
TBPE Firm F-3257 / TBPG #50220

**PROJECT SOILS MAP**  
 O'CONNOR HIGH SCHOOL  
 WATER POLLUTION ABATEMENT PLAN (WPAP) MODIFICATION  
 HELOTES, BEXAR COUNTY, TEXAS

REVISIONS:

NO.	DATE	DESCRIPTION

PROJECT No.: ASF23-091-00  
 ISSUE DATE: 10/26/2023  
 DRAWN BY: LAW  
 CHECKED BY: RAS  
 REVIEWED BY: RVK



- Sources:
1. Basemap obtained from Google Earth Pro, October 2021 orthoimagery.
  2. Soil contact obtained from Natural Resources Conservation Service (NRCS), June 11, 2020 based on the Soil Survey of Bexar County, United States Department of Agriculture, Series S362, Revised June 1991.
  3. Proposed and existing utility lines digitized from plan sheets prepared by KCI Technologies, Inc. and provided on August 22, 2023 (Proposed Impervious Cover with SS location.pdf, Exhibit F and October 6, 2023 (Utility Exhibit with SS RM.pdf), respectively.
  4. Test holes obtained from Geotechnical Engineering Report for the O'Connor High School Agriculture Science and Technology Center prepared by Raba Kistner, Inc., Project No. ASAZ3-043-00, report dated July 25, 2023.

NOTE: This Drawing is Provided for Illustration Only, May Not be to Scale and is Not Suitable for Design or Construction Purposes

**ATTACHMENT B**

**STRATIGRAPHIC COLUMN**

**STRATIGRAPHIC COLUMN**  
**O' Connor High School Water Pollution Abatement Plan (WPAP) Modification**  
**Helotes, Bexar County, Texas**

STRATIGRAPHIC FORMATION	THICKNESS	DESCRIPTION
Fluviatile Terrace Deposits (Qt)	~4–8 feet	Unit consists of sand, silt, and clay sediments and gravels that contain limestone, dolomite, and chert. <b><i>Not exposed in the WPAP assessment area owing to soil cover.</i></b>
Del Rio Clay (Kdr)	40-50 feet	Unit consists of blocky gray calcareous clay that weathers light gray to yellowish gray. Identified in the field by the presence of <i>Ilymatogyra arietina</i> . <b><i>Not exposed in the WPAP assessment area owing to soil cover.</i></b>
Edwards Aquifer <u>Georgetown Formation</u> (Kgt)	<10 feet	Unit consists of gray to light tan marly limestone. Identified in the field by the presence of <i>Waconella wacoensis</i> . <b><i>Not locally present in the WPAP assessment area.</i></b>
Edwards Limestone (Ked)  <u>Person Formation</u> (Kep)  <i>Cyclic and Marine Members, undivided</i>	180-224 feet  80-100 feet	Unit consists of massive mudstone to packstone; <i>miliolid</i> grainstone; and chert. Identified in the field by cycles of massive beds to relatively thin beds. <b><i>The Kep is inferred to underlie the majority of the WPAP assessment area. Isolated exposures observed along the north side of Building Q. Kep was reported in the geotechnical boring logs (RKI, 2023)</i></b>
<i>Leached and Collapsed Members, undivided</i>	80-100 feet	Unit consists of crystalline limestone, mudstone to grainstone and chert. Identified in the field by bioturbated iron-stained beds separated by massive limestone beds. <b><i>Reported to underlie the WPAP assessment area at depth.</i></b>
<i>Regional Dense Member</i>	20-24 feet	Unit consists of dense, argillaceous mudstone. Identified in the field by wispy iron-oxide stains. <b><i>Reported to underlie the WPAP assessment area at depth.</i></b>

Note: Stratigraphic Column adapted from Collins (2000).

## **ATTACHMENT C**

# **NARRATIVE OF PROJECT SPECIFIC GEOLOGY**



**SITE GEOLOGY NARRATIVE**  
**O' Connor High School Water Pollution Abatement Plan (WPAP) Modification**  
**Helotes, Bexar County, Texas**

**Introduction**

The following is a project-specific discussion of existing geological conditions and potential recharge features for the Edwards Aquifer identified within the west-central portion of the Sandra Day O' Connor High School campus that will host planned improvements (hereinafter referred to as Project or WPAP assessment area). The improvements will include a new greenhouse, shop, administrative and food science building, and animal pens. New pavement areas are proposed around the new shop and a retaining wall is proposed southeast of the new proposed animal pens. In addition, vegetation filter strip overlay in areas and the expansion of the student parking lot water quality basin is proposed for drainage improvements across the west side of the campus. This assessment was performed by **Raba Kistner, Inc. (RKI)** for KCI Technologies, Inc. (CLIENT) on behalf of Northside Independent School District (NISD) pursuant to applicable Edwards Aquifer Protection Program Rules as specified in *Title 30 of the Texas Administrative Code, Section 213 (30 TAC §213, effective April 24, 2008)*.

This assessment report is in the format required by the Texas Commission on Environmental Quality (TCEQ) for the Geologic Assessment portion of the Water Pollution Abatement Plan and Sewage Collection System (SCS) plan submittal and was prepared in accordance with the revised *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (TCEQ-0585)*, which are applicable to submittals received by the TCEQ after October 1, 2004. This geologic assessment report documents conditions observed by **RKI** within the Project boundaries on October 9, 2023. As further discussed herein, no naturally-occurring geologic features were identified as a result of assessment activities.

**Project Description**

**Project Location.** The Project comprises approximately 38.8 acres of land within the west-central portion of the existing NISD Sandra Day O'Connor High School campus, which is locally addressed at 12221 Leslie Road in Helotes (Bexar County). In accordance with TCEQ requirements, the full extent of the Project and, including the proposed SCS alignment and surrounding 50-foot buffer zone, was fully assessed in conjunction with Geologic Assessment activities. The Project area is fully developed and currently hosts existing classroom and agricultural buildings, asphalt parking lots, roadways, hardscape and landscaping improvements, in addition to existing utilities and drainage systems (i.e., storm drains and water quality basins). The Project is bounded to the north by Helotes City Hall and Police Department, west by the Vulcan Materials Helotes Asphalt quarry, NISD tennis center to the south, and existing school classroom buildings/portables and a band parade ground to the east.

Based on review of official maps prepared by TCEQ that are available from the Edwards Aquifer Protection Program website (<http://www.tceq.texas.gov/field/eapp/program.html>), the north and southwest portions of the Project are located within the Edwards Aquifer Recharge Zone (EARZ) and the central portion of the assessment area is within the Edwards Aquifer Transition Zone (EATZ) as depicted on the **Project Geologic Map**. As such, the performance of a geologic assessment is required to facilitate planned

WPAP and SCS construction activities in accordance with applicable provisions set forth in the EAPP rules as specified in *Title 30 of the Texas Administrative Code, Section 213 (30 TAC 213, effective April 24, 2008)*.

**Topography and Drainage.** Topographic information for the Project was obtained from the *Helotes, Texas Topographic Quadrangle Map* prepared by the United States Geological Survey (USGS, 2022) and 2-foot topographic contours obtained from the City of San Antonio (CoSA, 2015). These sources indicate that the natural surface topography may be characterized as gently sloping to the south and southwest. The 2-foot topographic contours obtained from CoSA are provided on the attached **Project Geologic Map** and indicate an approximate 10-12 foot drop in elevation (i.e., 1004 to 992 feet relative to mean sea level) from north to south across the Project. A review of U.S. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM, Map Nos. 48029C0215G and 48029C0220G) indicate that no part of the Project is located within the designated 100-year floodplain, although 100-year floodplain associated with Helotes Creek is located approximately to the west within the adjacent quarry property. Surface runoff across the Project generally occurs as sheetflow to the southwest with connection to existing storm water conveyances that discharge to existing water quality basins located within the Sandra Day O'Connor High School campus with ultimate discharge to Helotes Creek

**Historical Property Use.** Although research pertaining historical land use activities was beyond the scope of this assessment, historical aerial imagery was reviewed to evaluate past property conditions and the presence of lineations that could indicate the presence of normal faulting. The following aerial photographs from United Aerial Mapping and Google Earth™ were reviewed: 1981, 1995, 2002 through 2006, 2008, 2010, and 2012 through 2023. Below is a list of land development activities observed within the Project area in the aerial photographs.

- The high school property was undeveloped in the 1981 and 1995 aerial photographs.
- The high school facility was completely developed in the 2002 aerial photograph.
- The 2004 and 2008 aerial photographs indicate the addition of several structures near the southwest portion of the Project.
- The 2010 aerial photograph indicates a fenced-in asphalt parking area (i.e., band equipment staging) along the north extent of the Project

**Classification of Recharge Features:** As further described herein, 26 manmade recharge features were identified within Project boundaries, which include sanitary sewer lines, potable water lines, underground electric lines, gas lines, retention ponds, storm drain system, in addition to test holes. The significance of these features was assessed using definitions and guidance provided in *Instructions to Geologists (TCEQ-0585-Instructions, revised October 1, 2004)*. All features within the Project that met the criteria presented in this reference were mapped. The characteristics of all mapped features and the assessments of these features, as defined by the TCEQ, are presented in the attached **Geologic Assessment Table (TCEQ-0585)**.

### **Stratigraphy**

As presented in the attached **Stratigraphic Column**, information pertaining to the lithologies and thickness of geologic units underlying the Project was adapted from Collins (2000). Published data referenced indicate

that the Project is underlain by the following geological formations (youngest to oldest): Quaternary Terrace Deposits (Qt), Del Rio Clay (Kdr) formation, Georgetown Formation (Kgt), and the Upper Edwards Limestone (Person Formation [Kep]) as presented on **Project Geologic Map**. These formations are described below.

- Qt is mapped primarily within the southwest portion of the assessment area that is located adjacent (i.e., west of the Project limits) to the floodplain for Helotes Creek. Qt consists of varying proportions of gravel, sand, silt, and clay sediments, which are predominantly limestone, dolomite, and chert.
- Kdr overlies the Georgetown Formation and consists of calcareous, blocky, gray clay that weathers light gray to yellowish-gray. This unit is typically considered as an upper confining unit for the Edwards Aquifer in the San Antonio Area (Maclay, 1995).
- Kgt typically consists of thin exposures (i.e., erosional remnants) of gray to tan marly or shaley dense limestone sometimes exhibiting significant iron staining. The total thickness of the Kgt is typically on the order of 10 feet or less in Bexar County. No erosional remnants of the Kgt within Project boundaries and immediate surrounding area were identified or in the geotechnical boring logs.
- The Kep, which underlies the Kgt, is commonly divided into three distinct members: (i) Cyclic and Marine Member, undivided – mudstone to packstone, grainstone, and chert; (ii) Leached and Collapsed Member, undivided - unit includes crystalline limestone, mudstone to grainstone, and chert; and (iii) Regional Dense Member - unit consists of dense, carbonate mudstone. The total thickness of the Kep is on the order of 180 to 224 feet. The uppermost or Cyclic and Marine member of the Kep represents the portion of the Edwards Limestone directly underlying the west portion of the Project to depths on the order of 80 to 100 feet. Based upon the work of Maclay (1995), this unit contains many open fractures and possesses low matrix permeability with total porosity on the order of 5 to 10%. Patchy outcrops of the weathered Kep were observed north of sheep/goat barn (i.e., Building Q).

### **Structure**

The Project is located within the Balcones Fault Zone and as such, limestone strata exposed within the vicinity possess a distinct structural trend. This zone consists of a northeast-southwest trending, *en echelon* normal fault system, which juxtaposes Upper Cretaceous lithologies in the southeast with Lower Cretaceous lithologies in the northwest. As a result of this larger-scale, regional faulting, minor internal fault sequences and fractures exist within this zone, which follow the same structural trend and accommodate localized displacement, particularly within the extent of the EARZ.

In order to evaluate the presence of normal fault zones that could transect property boundaries, **RKI** reviewed historical aerial photographs and published maps. No faults were mapped within the Project limits and no evidence of structural features (e.g., lineations in vegetation, changes in soil type, fractured rock exposures, etc.) were observed during reconnaissance activities. Field observations are consistent with most recently published geological information for the Project vicinity (Collins, 2000).

### Karst

Although weathered exposures of the Kep were observed, north of the goat/sheep barn (i.e., Building Q), there were no potential recharge features identified within Project boundaries that may be attributed to karstification of the underlying limestone terrain. Owing to the presence of soil cover and existing improvements, limestone strata of the Kep, which are prone to karst forming processes, are not present within the near-surface interval at the Project. Reconnaissance efforts did not indicate the presence or indirect evidence of natural recharge features that may be attributed to karstification of the underlying limestone terrain.

### Manmade Features

As presented on the *Project Geologic Map*, 26 manmade features were identified that may potentially serve to enhance the transmission of surface runoff to the subsurface. The features consist of trenches for underground utilities including the following: sanitary sewer, potable water, electric, and natural gas. Additionally, manmade features include existing storm drain systems and stormwater basins, in addition to plugged geotechnical borings. All of these features meet the criteria for assessment as manmade features in bedrock. Information regarding the locations of the existing manmade features was taken from field observations, review of geotechnical borings logs (RKI, July 2023), and utility plans provided by KCI Technologies, Inc. (October 2023). The following features were identified:

- **Feature S-1** consists of interconnected trenches for a 6- to 8-inch existing sanitary sewer lines owned by San Antonio Water System (SAWS).
- **Feature S-2** consists of a trench for an existing sanitary sewer line.
- **Feature S-3** consists of interconnected trenches for existing 6- to 8-inch polyvinyl chloride (PVC) potable water lines owned by City Public Service (CPS) Energy.
- **Feature S-4** consists of interconnected trenches for an existing natural gas utility CPS Energy.
- **Feature S-5** consists of interconnected trenches for existing 1-1/4- to 4-inch electrical utility owned CPS Energy.
- **Features S-6, S-7, S-8, and S-10** consists of trenches for storm drain pipes that service O'Connor High School campus.

Although not directly observable, it is inferred that the subgrade trenches for these subgrade installations are backfilled in accordance with standard construction practices that include the use of structural fill soils (e.g., base course materials, limestone gravel, compacted clay soils, etc.) overlain by native or fill soils, depending upon location and surface improvements. The trenches were not observed in conjunction with any naturally-occurring recharge features. Although the backfilled trenches may exhibit somewhat greater relative infiltration rate than the surrounding soil/rock strata underlying the project boundaries, these manmade features are collectively classified as not sensitive, having a low potential of preferentially transmitting fluids into the Edwards Aquifer. This classification is based upon the point assignment criteria presented in the *Geologic Assessment Table (TCEQ-0585)* and professional judgment.

**RKI** identified two stormwater basins, **Features S-9** and **S-11** that treat stormwater originating within the high school campus (i.e., parking lot and agriculture barn area). The probability for rapid infiltration into the subsurface is considered low for these best management practices (BMPs) as basins are designed to capture, filter, and convey water downstream with typical detention times on the order of 24-72 hours. Additionally, a stormwater basin within the Edwards Aquifer Recharge Zone are typically required to have an impermeable liner. As such, these features are classified as not sensitive

**Features S-12 through S-26** consist of geotechnical borings installed as part of the recent geotechnical engineering study in support of proposed improvements (**RKI**, 2023). These were reportedly installed to depths ranging from 8-1/2 to 39 feet, terminating in limestone of the Kep. No shallow groundwater was observed during drilling operations. These borings were plugged with granular bentonite immediately following drilling activities. These features are collectively classified as not sensitive as they have been plugged and no longer exist.

#### **Potential for Fluid Migration to the Edwards Aquifer**

Based on a review of Project geology, topography and drainage conditions, and the results of our mapping efforts, the overall potential for direct fluid migration (i.e., surface-derived flow) to the Edwards Aquifer via infiltration is considered to be low to moderate. The following assessment findings support this conclusion:

- There were no naturally-occurring recharge features identified within the Project area that may be attributed to karstification of the underlying limestone terrain. The majority of the Project is overlain by clay soils approximately 2 feet or greater in thickness with reported slow to moderate infiltration rates (i.e., Group D and B soils, respectively). Owing to soil cover and improvements, limited exposures of the Kep were observed.
- Manmade features present at the Project are collectively classified as not sensitive based on consideration of typical construction details and application of point assignment criteria and professional judgment.
- The Project is almost completely developed with impervious cover and landscaping improvements, which is expected to promote runoff to established water quality basins and limit infiltration.

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**ATTACHMENT D**

**FEATURE POSITION TABLE  
(GPS COORDINATES)**

**PROJECT GEOLOGIC MAP**

**FEATURE POSITION TABLE**  
**O' Connor High School Water Pollution Abatement Plan (WPAP) Modification**  
**Helotes, Bexar County, Texas**  
 RKI Project No. ASF23-091-00

Feature Designation	Feature Type	Date Collected	North Latitude	West Longitude	UTM Northing (meters)	UTM Easting (meters)
S-1	Manmade feature in bedrock (Sanitary Sewer Line)	10/9/2023	29°33'33.77"N	98°41'15.54"W	3270003	530258
S-2	Manmade feature in bedrock (Sanitary Sewer Line)	10/9/2023	29°33'29.28"N	98°41'18.05"W	3269865	530190
S-3	Manmade feature in bedrock (Water Line)	10/9/2023	29°33'34.40"N	98°41'17.62"W	3270023	530202
S-4	Manmade feature in bedrock (Electric Line)	10/9/2023	29°33'34.52"N	98°41'16.40"W	3270027	530234
S-5	Manmade feature in bedrock (Gas Line)	10/9/2023	29°33'32.66"N	98°41'20.17"W	3269969	530133
S-6	Manmade feature in bedrock (Storm Drain)	10/9/2023	29°33'37.98"N	98°41'18.71"W	3270133	530172
S-7	Manmade feature in bedrock (Storm Drain)	10/9/2023	29°33'27.90"N	98°41'14.84"W	3269823	530277
S-8	Manmade feature in bedrock (Storm Drain)	10/9/2023	29°33'25.94"N	98°41'13.79"W	3269763	530305
S-9	Manmade feature in bedrock (Water Quality Pond A)	10/9/2023	29°33'26.38"N	98°41'17.33"W	3269976	530210
S-10	Manmade feature in bedrock (Storm Drain)	10/9/2023	29°33'27.40"N	98°41'22.13"W	3269807	530082
S-11	Manmade feature in bedrock (Water Quality Pond A)	10/9/2023	29°33'26.11"N	98°41'24.36"W	3269768	530022
S-12	MB (test hole B-1)	6/21/2023	29°33'27.17"N	98°41'20.02"W	3269800	530138
S-13	MB (test hole B-2)	6/21/2023	29°33'26.75"N	98°41'21.81"W	3269787	530090
S-14	MB (test hole B-3)	6/16/2023	29°33'32.38"N	98°41'19.75"W	3269960	530145
S-15	MB (test hole B-4)	6/16/2023	29°33'33.82"N	98°41'20.40"W	3270005	530127
S-16	MB (test hole B-5)	6/23/2023	29°33'36.66"N	98°41'18.07"W	3270092	530189
S-17	MB (test hole B-6)	6/22/2023	29°33'33.43"N	98°41'17.11"W	3269993	530215
S-18	MB (test hole B-7)	6/20/2023	29°33'32.25"N	98°41'16.64"W	3269957	530228
S-19	MB (test hole B-8)	6/16/2023	29°33'33.15"N	98°41'17.99"W	3269984	530192
S-20	MB (test hole B-9)	6/20/2023	29°33'32.12"N	98°41'17.31"W	3269953	530210
S-21	MB (test hole P-1)	6/21/2023	29°33'30.99"N	98°41'22.89"W	3269917	530060
S-22	MB (test hole P-2)	6/23/2023	29°33'34.29"N	98°41'21.18"W	3270019	530106
S-23	MB (test hole P-3)	6/20/2023	29°33'33.96"N	98°41'18.30"W	3270009	530184
S-24	MB (test hole P-4)	6/20/2023	29°33'31.10"N	98°41'17.01"W	3269921	530219
S-25	MB (test hole RW-1)	6/21/2023	29°33'26.52"N	98°41'20.54"W	3269780	530124
S-26	MB (test hole RW-2)	6/21/2023	29°33'27.23"N	98°41'18.29"W	3269802	530184

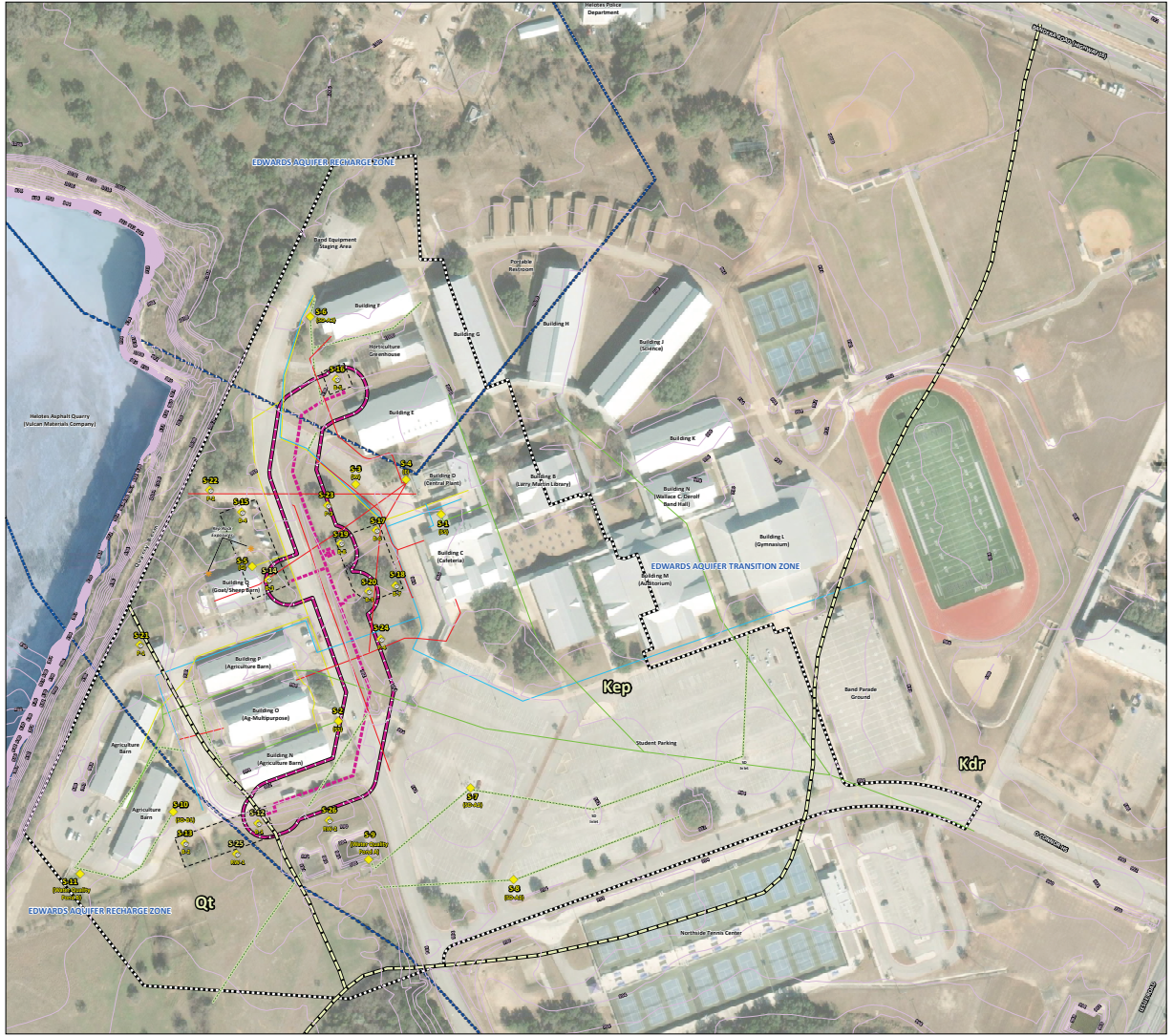
**NOTES:**

1. Geographic coordinates are presented Degrees, Minutes, Decimal Seconds
2. Reference Datum is NAD 83
3. Data were collected utilizing a Garmin GPS 60cx Global Positioning System.
4. Horizontal Accuracy: RMS Value < 3 meter ground resolution
5. GPS data was collected by Rick Sample (RKI Project Professional).
6. June 2023 GPS data was collected for the test holes by a RKI Geotechnical Professional.
7. GPS coordinates correlate to the points on the map for each feature.



**Legend**

- WBW Boundary
- Proposed Building Footprint (2025)
- Proposed Addition Lower Area (2025)
- Edwards Aquifer Boundary (EAGB, 2005)
- 20' Buffer (EAGB, 2005)
- 60' Buffer (EAGB, 2005)
- WBW Can Access
- Existing Utility/Structure (2022)
- E - Electric
- G - Gas
- WC - Wastewater
- SR - Storm
- Existing Storm Drain (SD) System
- Proposed SD New (SD), 2025
- Additional Geologic Control Points, 2005
- Q1 - Quaternary Deposits
- Rd - Roadway
- W - Wetland



- Notes:**
1. Based on the most recent data available from the Texas Geological Survey (TGS), dated January 2015.
  2. Existing geologic maps, 1000', 2500', and 5000' scale, were used to create this map. The 1000' scale map was used for the Edwards Aquifer Boundary (EAGB) and the 2500' scale map was used for the Quaternary Deposits (Q1).
  3. Proposed building footprints are shown in solid black. Existing building footprints are shown in solid grey.
  4. Proposed additions are shown in solid grey.
  5. Proposed additions are shown in solid grey.
  6. The Edwards Aquifer Boundary (EAGB) and the Edwards Aquifer Transition Zone (EATZ) are shown in solid black.
  7. The Edwards Aquifer Boundary (EAGB) and the Edwards Aquifer Transition Zone (EATZ) are shown in solid black.
  8. The Edwards Aquifer Boundary (EAGB) and the Edwards Aquifer Transition Zone (EATZ) are shown in solid black.
  9. The Edwards Aquifer Boundary (EAGB) and the Edwards Aquifer Transition Zone (EATZ) are shown in solid black.
  10. The Edwards Aquifer Boundary (EAGB) and the Edwards Aquifer Transition Zone (EATZ) are shown in solid black.

Note: This drawing is provided for illustration only. It may not be to scale and is not suitable for design or construction purposes.

**RABA KISTNER**  
 12821 West Golden Lane  
 San Antonio, Texas 78249  
 P 210-699-1900  
 F 210-699-5454  
 www.rki.com  
 TRM ERM 3-3127

**PROJECT PLAN**  
 10/26/23  
 RABA KISTNER  
 Jim Kistner

**PROJECT GEOLOGIC MAP**  
 OF CONNOR HIGH SCHOOL WATER POLLUTION ABATEMENT PLAN (WPA) MODIFICATION  
 BELL COUNTY, TEXAS

**REVISIONS:**

No.	Date	Description

PROJECT No.: ASP23-091-00  
 ISSUE DATE: 10/26/2023  
 DRAWN BY: LAW  
 CHECKED BY: SAS  
 REVIEWED BY: PKV

1" = 40' HORIZONTAL  
 1" = 8' VERTICAL

**Legend**  
 N  
 S  
 0 40 80 FEET  
 1" = 40' HORIZONTAL  
 1" = 8' VERTICAL

# **Modification of a Previously Approved Plan (TCEQ-0590)**

# Modification of a Previously Approved Plan

## Texas Commission on Environmental Quality

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

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

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


## Signature

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

Print Name of Customer/Agent: Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
Practice Leader | Senior Associate

Date: 9/22/2023

Signature of Customer/Agent:



## Project Information

1. Current Regulated Entity Name: O'Connor High School Agricultural Area  
Original Regulated Entity Name: O'Connor High School Agricultural Area  
Regulated Entity Number(s) (RN): 104754304  
Edwards Aquifer Protection Program ID Number(s): 1611  
 The applicant has not changed and the Customer Number (CN) is: 601104169  
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
2.  **Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
- Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
  - Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
  - Development of land previously identified as undeveloped in the original water pollution abatement plan;
  - Physical modification of the approved organized sewage collection system;
  - Physical modification of the approved underground storage tank system;
  - Physical modification of the approved aboveground storage tank system.
4.  Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

<b><i>WPAP Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Acres	<u>72.83</u>	<u>196.24 - TxDOT ROW Dedi.</u>
Type of Development	<u>School</u>	<u>- Sold prop. = 157.625</u>
Number of Residential Lots	<u>0</u>	<u>Commercial</u>
Impervious Cover (acres)	<u>25.91</u>	<u>0</u>
Impervious Cover (%)	<u>36%</u>	<u>19.647</u>
Permanent BMPs	<u>WQB, VFS</u>	<u>72.94</u>
Other	<u>No</u>	<u>WQB, VFS</u>
		<u>No</u>

<b><i>SCS Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Linear Feet	<u>3775.46</u>	<u>611</u>
Pipe Diameter	<u>10"</u>	<u>8"</u>
Other	<u>N/A</u>	<u>N/A</u>

<i><b>AST Modification</b></i>	<i><b>Approved Project</b></i>	<i><b>Proposed Modification</b></i>
<i><b>Summary</b></i>		
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

<i><b>UST Modification</b></i>	<i><b>Approved Project</b></i>	<i><b>Proposed Modification</b></i>
<i><b>Summary</b></i>		
Number of USTs	_____	_____
Volume of USTs	_____	_____
Other	_____	_____

5.  **Attachment B: Narrative of Proposed Modification.** A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.
  
6.  **Attachment C: Current Site Plan of the Approved Project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
  - The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.
  
7.  The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
  - Acreage has not been added to or removed from the approved plan.
  
8.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and

county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

# **Attachment A**

Original Approval Letter of and  
Approved Modification Letters

Bryan W. Shaw, Ph.D., *Chairman*  
Carlos Rubinstein, *Commissioner*  
Toby Baker, *Commissioner*  
Zak Covar, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

June 4, 2012

Mr. Leroy San Miguel  
Assistant Superintendent of Facilities and Operations  
Northside Independent School District  
5900 Evers Road  
San Antonio, Texas 78238

Re: Edwards Aquifer, Bexar County

Name of Project: NISD Sandra Day O'Connor High School; Located at 12221 Leslie Road;  
Helotes, Texas

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

Edwards Aquifer Protection Program (EAPP) San Antonio File No. 335.07; Investigation No.  
996385; Regulated Entity No. RN104754304

Dear Mr. San Miguel:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the San Antonio Regional Office by M.W. Cude Engineers, LLC on behalf of Northside Independent School District on March 28, 2012. Final review of the WPAP was completed after additional material was received on May 31, 2012. 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

The high school was originally approved by letter dated September 6, 1996 for the construction of 25.91 acres of impervious cover within a 72.83 acre site. The permanent best management practices approved were a sand filter basin and vegetated filter strips.



Seven modifications have been subsequently approved. The most recent modification was approved by letter dated May 27, 2011 for the construction of a building expansion, parking, and sidewalks. The impervious cover increased to 32.15 ac (44.14 percent).

### **Project Description**

The proposed commercial project will have an area of approximately 15.07 acres within the 72.83 acre school site. It will include the construction of a tennis center consisting of tennis courts, a pro-shop, associated parking, access drives, sidewalks, and two sediment/filtration basins. The project will increase the impervious cover by 5.90 acres. The total impervious cover for the site will be 38.05 (52.24 percent). Project wastewater will be disposed of by conveyance to the existing Leon Creek Water Recycling Center owned by the San Antonio Water System.

### **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, two single chamber, sediment/filtration basins, 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 4,814 pounds of TSS generated from the 5.90 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; Basin 5, a clay lined, partial sedimentation/filtration basin designed to capture the first 1.38 inches of stormwater runoff from 2.99 acres of impervious cover within a 3.71 acre catchment area. The basin has been sized to remove approximately 2,395 pounds of TSS annually, providing a total capture volume of 14,455 cubic feet (14,097 cubic feet required). The filtration system for the basin will consist of 1,480 square feet of sand (1,410 square feet required) with an ASTM rating of C-33, which is 18 inches thick and an underdrain piping system covered with a minimum two inch gravel layer.

Basin 6 is a clay lined, partial sedimentation/filtration basin designed to capture the first 2 inches of stormwater runoff from 2.82 acres of impervious cover within a 3.69 acre catchment area. The basin has been sized to remove approximately 2,420 pounds of TSS annually and to account for 0.09 acres of impervious cover that was not able to be directed into the basin, providing a total capture volume of 26,150 cubic feet (18,554 cubic feet required). The filtration system for the basin will consist of 1,990 square feet of sand (1,855 square feet required) with an ASTM rating of C-33, which is 18 inches thick and an underdrain piping system covered with a minimum two inch gravel layer.

### **Geology**

According to the geologic assessment included with the application, the site is underlain by the Del Rio Clay formation. One manmade feature, existing sanitary sewer line, was reported and assessed as not sensitive. The San Antonio Regional Office did not conduct a site assessment.

### **Special Conditions**

1. This modification is subject to all Special and Standard Conditions listed in the approval letters of the previously approved WPAP and subsequent modifications.
2. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.
3. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

### **Standard Conditions**

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

#### *Prior to Commencement of Construction:*

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated

activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

*During Construction:*

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist onsite. 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.

*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.

Mr. Leroy San Miguel  
June 4, 2012  
Page 6

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Javier Anguiano of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 490-3096.

Sincerely,



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

LMB/JA/eg

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

cc: Mr. Kevin P. Hunt, P.E., M.W. Cude Engineers, LLC  
The Honorable Thomas Schoolcraft, City of Helotes  
Ms. Renee Green, P.E., Bexar County Public Works  
Mr. Scott Halty, P.E., San Antonio Water System  
Mr. Karl J. Dreher, General Manger, Edwards Aquifer Authority  
Mr. George Wissmann, General Manager, Trinity Glen Rose Conservation District  
TCEQ Central Records, Building F, MC 212

Bryan W. Shaw, Ph.D., P.E., *Chairman*  
Toby Baker, *Commissioner*  
Jon Niermann, *Commissioner*  
Richard A. Hyde, P.E., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

August 1, 2017

Mr. Leroy San Miguel  
Northside Independent School District  
5900 Evers Road, Building C  
San Antonio, Texas 78238

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Sandra Day O'Connor High School; Located on the west side of Leslie Road, approximately 1500 feet south of Bandera Road; Helotes, Texas

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

Edwards Aquifer Protection Program ID No. 13000443; Regulated Entity No. RN104754304

Dear Mr. San Miguel:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Mr. Rolando Ramirez on behalf of Moy Tarin Ramirez Engineers, LLC on June 15, 2017. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

### BACKGROUND

The original WPAP for a 169.74 acre multi-use facility was approved by letter dated September 26, 1990. By letter dated September 6, 1996, a WPAP modification was approved for a 125 acre multi-use facility that included the high school stadium and a bus maintenance facility. The 1996 modification included 72.83 acres that comprised the high school and associated buildings. Since September 1996 there have been eight modifications of the WPAP to add additional buildings, pads, track improvements and additional vegetated filter strips (VFS). The most recent site plan update, approved on November 13, 2012, included improvements made to the running track.

The permanent BMP's approved for the high school include six sedimentation/filtration basins and multiple VFS.

PROJECT DESCRIPTION

The proposed project area will be limited to 4.3 acres of the 72.83 acre site. The project will include the construction of a new portable building and new bleacher pads at the south baseball and softball fields. The impervious cover will increase 0.21 acres to 32.73 acres (44.94 percent). Project wastewater will be disposed of by conveyance to the existing Leon Creek Water Recycling Center owned by the San Antonio Water System.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one existing sedimentation/filtration basin (Basin No. 4), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for the 0.21 acres of impervious cover is 171 pounds of TSS. The total required TSS removal for Basin No. 4 is now 6,911 pounds of TSS generated from 8.47 acres of impervious cover. Basin No. 4 was designed with a removal capability of 8,005 pounds of TSS. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project. The updated capture volume and filtration area for Basin No. 4 is shown below.

Project Submittal/Date	Total Area (ac)	Total IC (ac)	Min. Capture Volume (ft <sup>3</sup> )	Design Capture Volume (ft <sup>3</sup> )	Min. Filter Area (ft <sup>2</sup> )	Design Filter Area (ft <sup>2</sup> )	Required TSS Removal (lb/yr)	Design TSS Removal (lb/yr)
Bleacher Pads & Portable Classroom June 15, 2017	57.53	8.47	45,996	53,100	4,600	5,612	6,911	8,005

GEOLOGY

According to the geologic assessment included with the application, the site is mostly on the Edwards Person Formation with small portions of the site assessed as Buda Limestone and Quaternary alluvium. No natural or manmade features were identified by the project geologist. The San Antonio Regional Office site assessment conducted on July 6, 2017 revealed that the site was generally as described in the application.

SPECIAL CONDITIONS

- I. 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.
- II. Basin No. 4 shall be inspected and completely operational prior to use of the newly constructed facilities located within the respective drainage area of the BMP.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.



During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

18. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's

Mr. Leroy San Miguel  
August 1, 2017  
Page 5

association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Don Vandertulip, PE, BCEE of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4057.

Sincerely,



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

LB/DV/eg

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

cc: Mr. Rolando Ramirez, P.E., Moy Tarin Ramirez Engineers, LLC  
The Honorable Thomas Schoolcraft, City of Helotes  
Ms. Renee Green, PE, Bexar County Public Works  
Mr. Roland Ruiz, Edwards Aquifer Authority  
Mr. George Wissman, Trinity Glen Rose Groundwater Conservation District

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 20, 2020

Mr. Henry Acosta  
Northside Independent School District  
5900 Evers Road, Bldg. E  
San Antonio, Texas 78238

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: NISD Sandra Day O'Connor High School; Located approximately 1,625 feet south of the Bandera Road and Leslie Road intersection on the west side of Leslie Road; Helotes, Texas

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

Regulated Entity No. RN104754304; Additional ID. No. 13001049

Dear Mr. Acosta:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification Application for the above-referenced project submitted to the San Antonio Regional Office by Moy Tarin Ramirez Engineers, LLC on behalf of Northside Independent School District on January 28, 2020. Final review of the WPAP Modification was completed after additional material was received on March 12, 2020 and March 17, 2020. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

### BACKGROUND

The WPAP was approved by letter dated September 6, 1996 for construction of the NISD Multi-Use Facility (Helotes High School) later renamed as NISD Sandra Day O'Connor High School. Subsequent WPAP modifications for campus expansion on the 72.83-acre site were approved by

letters dated November 1, 1996, October 12, 1999, February 27, 2003, November 1, 2006, January 3, 2008 and August 1, 2017. Permanent BMPs include six water quality ponds and engineered vegetative filter strips.

#### PROJECT DESCRIPTION

This modification proposes the replacement of the existing natural turf football field with new synthetic turf and the resurfacing of the existing track surface within a 16.50-acre project area of the 72.83-acre site. Impervious cover totals 4.41 acres (26.72 percent) with 2.14 acres being new impervious cover. Total site impervious cover increases to 34.87 acres (47.87 percent). No wastewater will be generated by this project.

#### PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, an existing single chamber sedimentation filtration basin, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 3,599 pounds of TSS generated from the 4.41 acres of impervious cover. The approved measure meets the required 80 percent removal of the increased load in TSS caused by the project.

#### GEOLOGY

According to the geologic assessment included with the application, the site lies within the Del Rio Clay. Five (5) non-sensitive manmade features in bedrock and one (1) non-sensitive geologic feature were noted by the project geologist within the project limits. The site assessment conducted on March 11, 2020 revealed that the site was generally as described in the application.

#### SPECIAL CONDITIONS

- I. This modification is subject to all Special and Standard Conditions listed in the original plan approval letter dated September 6, 1996 and subsequent WPAP modifications dated November 1, 1996, October 12, 1999, February 27, 2003, November 1, 2006, January 3, 2008 and August 1, 2017.
- II. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

#### STANDARD CONDITIONS

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

3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and

approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells exist on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

18. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that

Mr. Henry Acosta  
Page 5  
March 20, 2020

specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Dianne Pavlicek-Mesa, P.G., of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,



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

RCS/dpm

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

cc: Mr. Nicholas Van Delist, P.E., Moy Tarin Ramirez Engineers, LLC  
Mr. Thomas Schoolcraft, City of Helotes  
Ms. Renee Green, P.E., Bexar County Public Works  
Mr. Roland Ruiz, Edwards Aquifer Authority  
Mr. Scott Halty, San Antonio Water System  
Mr. George Wissmann, Trinity Glen Rose Groundwater Conservation District

Barry R. McBee, *Chairman*  
 R. B. "Ralph" Marquez, *Commissioner*  
 John M. Baker, *Commissioner*  
 Dan Pearson, *Executive Director*



## TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

*Protecting Texas by Reducing and Preventing Pollution*

September 6, 1996

Mr. James Martin  
 Northside Independent School District  
 7522 Mainland  
 San Antonio, TX 78250

Re: EDWARDS AQUIFER, Bexar County  
 PROJECT: NISD Multi-Use Facility (Helotes High School), Located at the SW corner of S.H. 16 and Leslie Road, Helotes, Texas  
 TYPE: Request for Approval of Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) §313.4; Edwards Aquifer Protection Program

Dear Mr. Martin:

The Texas Natural Resource Conservation Commission (TNRCC) has completed their review of the WPAP application for the referenced project that was submitted on behalf of Northside Independent School District (NISD) by M.W. Cude Engineers, L.L.C. and received by the San Antonio office on June 14, 1996. Final review was completed after additional material was received on August 7, 1996, August 12, 1996, and August 29, 1996.

### PROJECT DESCRIPTION

This site was previously approved by letter dated September 26, 1996 as a multi-use facility on approximately 125 acres which would include a bus maintenance facility, stadium, and high school. This WPAP approval replaces the previous approval for that portion of the site which does not include the bus maintenance facility.

Book 07833 Page 7

The proposed 72.83 acre multi-use facility is to be developed as a school project and will consist of a high school with associated buildings, including a greenhouse, parking, and athletic fields. The site is located within the City of Helotes, and will conform with applicable codes and requirements of the City of Helotes.

The normal population of the development is estimated to be 3200 persons. 64,000 gallons per day of domestic wastewater is to be generated by this project. It will be disposed of by conveyance to the existing Leon Creek Wastewater Treatment Plant for treatment and disposal.

REPLY TO: REGION 13 • 140 HEIMER RD., SUITE 360 • SAN ANTONIO, TEXAS 78232-5042 • AREA CODE 210/490-3096

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000

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Mr. James Martin  
September 6, 1996  
Page 2

The proposed impervious cover for the development, approximately 25.91 acres (36%), includes roof tops, driveways, sidewalks, athletic fields, and parking lots.

#### GEOLOGY ON SITE

According to the geologic assessment included with the submittal, three (3) potential recharge features were found on the project site. All three (3) features were assessed as having a none/low relative infiltration rate. The site investigation performed by the San Antonio office on July 23, 1996, revealed no additional potential recharge features.

#### GEOLOGY DOWNGRADIENT OF SITE

According to the geologic assessment included with the submittal, one (1) potential recharge feature was found downgradient of the project site.

#### POLLUTION ABATEMENT

##### I. During Construction:

The following measures will be taken to prevent pollution of stormwater originating on-site or up-gradient from the project site and potentially flowing across and off the site during construction:

- A. Stabilized construction entrances shall be installed at all sites of ingress and egress prior to initiation of any other regulated activity.
- B. Temporary erosion and sedimentation controls (silt fences and rock berms) shall be installed prior to initiation of any other regulated activity.

##### II. After Construction:

Bok 07833 Page 8

The following measures will be taken to prevent pollution of stormwater originating on-site or up-gradient from the project site and potentially flowing across and off the site after construction:

- A. The full sedimentation/filtration basin is designed in accordance with the City of Austin Environmental Criteria Manual and is sized to capture the first 1/2 inch of stormwater run-off from 9.77 acres, providing a total capture volume of approximately 19000 cubic feet. The filtration system will consist of:
  - 1. approximately 1932 square feet of sand, which is 18 inches thick,
  - 2. an underdrain piping wrapped with geotextile membrane, and
  - 3. an impervious liner.

Mr. James Martin  
September 6, 1996  
Page 3

- B. There are five (5) vegetated filter strips planned for this project to treat stormwater run-off from parking lots and driveways. All vegetated filter strips are designed in accordance with the Lower Colorado River Authority (LCRA) Lake Travis Nonpoint Source Pollution Control Ordinance Technical Manual.

The 2.20 acre filter strip for drainage area 1 will:

1. be contiguous with developed area,
2. be at the same elevation as the developed area,
3. have a level spreading device, and
4. be sized to filter stormwater run-off from 1.04 acres of impervious cover.

The 4.03 acre filter strip for drainage area 2 will:

1. be contiguous with developed area,
2. be at the same elevation as the developed area,
3. have a level spreading device, and
4. be sized to filter stormwater run-off from 1.30 acres of impervious cover.

The 2.70 acre filter strip for drainage area 3 will:

1. be contiguous with developed area,
2. be at the same elevation as the developed area,
3. have a level spreading device, and
4. be sized to filter stormwater run-off from 1.52 acres of impervious cover.

The 1.70 acre filter strip for drainage area 4 will:

1. be contiguous with developed area,
2. be at the same elevation as the developed area,
3. have a level spreading device, and
4. be sized to filter stormwater run-off from 0.72 acres of impervious cover.

The 1.90 acre filter strip for drainage area 5 will:

1. be contiguous with developed area,
2. be at the same elevation as the developed area,
3. have a level spreading device, and
4. be sized to filter stormwater run-off from 0.97 acres of impervious cover.

Mr. James Martin  
September 6, 1996  
Page 4

### APPROVAL

The plan for this project has been reviewed for compliance with 30 TAC §313.4 which sets forth pollution abatement criteria for any development on the recharge zone of the Edwards Aquifer. The proposed water pollution abatement plan is in general agreement with 30 TAC §313.4; therefore, approval of the plan is hereby granted subject to the specific conditions listed below.

Failure to comply with any of the following conditions, the deed recordation requirement, or any other specific conditions of approval is a violation of these rules. Pursuant to §26.136 of the Texas Water Code, any violations of the Edwards Aquifer Rules may result in administrative penalties of up to \$10,000 for each act of violation and for each day of violation.

### SPECIAL CONDITIONS OF APPROVAL

1. If any potential recharge features are encountered during construction, a geologist shall evaluate the significance of the features. The evaluation shall include representative photographs and a description of the feature forwarded to the San Antonio office. Construction in the vicinity of the features may only continue with written approval from the TNRCC.
2. Placement of hydrocarbon or hazardous substance storage facilities regulated pursuant to 313.10 and 313.11, requires submittal of all appropriate applications with appropriate fees and must receive prior approval from the TNRCC.
3. The sedimentation/filtration basin is designed in accordance with the City of Austin Environmental Criteria Manual. The basin will incorporate sedimentation and filtration as described above.
4. All permanent pollution abatement measures shall be operational prior to completion of construction.
5. Any chemicals or hazardous substances used on-site, whether for instructional purposes, maintenance activities, or any other use shall be used as specified by the manufacturer, and shall be stored and disposed of properly.

### STANDARD CONDITIONS OF APPROVAL

1. Please be reminded that 30 TAC §313.4(c) requires the owner/developer to: (1) record in the county deed records that this property is subject to the approved WPAP; and (2) submit to the Executive Director through the San Antonio office, within 30 days of receiving this

Mr. James Martin  
September 6, 1996  
Page 5

written notice of approval of the water pollution abatement plan and prior to commencing construction, proof of application for recordation of notice in the county deed records. Enclosed is a suggested format you may use to deed record your approved WPAP.

2. Prior to commencing construction, the applicant/agent shall submit to the San Antonio office copies of any changes made to the plans and specifications for this project which have been required by the TNRCC review and/or all other permitting authorities.
3. Please note, following this approval of the regulated activities described in the referenced WPAP submittal, any amendment to these activities required by some other regulating authority or desired by the applicant will require the submittal of a WPAP application to amend this approval. And, as indicated in 30 TAC §313.4 and 30 TAC §313.27, an application to amend any approved regulated activity shall include payment of appropriate fees and all information necessary for its review and Executive Director approval.
4. Additionally, all contractors conducting regulated activities associated with this proposed regulated project shall be provided with copies of this approval letter and the entire contents of the submitted WPAP so as to convey to the contractors the specific conditions of this approval. During the course of these regulated activities, the contractors shall be required to keep on-site copies of the WPAP and this approval letter.
5. The temporary erosion and sedimentation (E&S) controls for the entire project shall be installed prior to beginning any other construction work on this project.
6. The appropriate E&S control(s) that shall be used during the construction of the project should be determined as follows: (1) Silt fences should be used when the drainage area is less than 2 acres and the slope is less than 10%. (2) Rock berms with filtration should be used when the drainage areas are greater than two acres or when the slopes are in excess of 10%. The bottom edge of the filter fabric must be buried a minimum of 6 inches below grade.
7. The TNRCC may monitor stormwater discharges from the site to evaluate the adequacy of the temporary and permanent erosion and sedimentation control measures. Additional protection may be necessary if excessive solids or other contaminants are being discharged from the site.
8. Also, 30 TAC §313.4(d)(2) requires that if any significant recharge features, such as solution openings or sinkholes, are discovered during construction, all regulated activities near the significant recharge feature must be suspended immediately and may not be resumed until

the Executive Director has reviewed and approved the methods proposed to protect the aquifer from any potential adverse impacts. Upon discovery of the significant recharge features, the developer shall immediately notify the San Antonio office.

9. Temporary erosion and sedimentation controls must be installed prior to construction, maintained during construction, and removed when vegetation is established and the construction area is stabilized.
10. If any abandoned wells exist on the site or are found during construction of the proposed development, they shall be plugged in accordance with the local underground water conservation district's plugging procedures, if applicable, or 30 TAC §287.50(a) of this title (relating to Standards for Plugging Wells that Penetrate Undesirable Water Zones), or an equivalent method, as approved by the Executive Director. Pursuant to 30 TAC §287.48(e), the person that plugs such a well shall, within 30 days after plugging is complete, submit a Water Well Completion and Plugging Report to the Executive Director, through the San Antonio office and to the Edwards Aquifer Authority.

Any drill holes resulting from core sampling on-site or down-gradient of the site shall be plugged with cement slurry, from the bottom of the hole to the top of the hole, so as to not allow water or contaminants to enter the subsurface environment.

11. No waste-disposal wells, new confined animal feeding operations, land disposal of Class I wastes, or use of sewage holding tanks as parts of organized collection systems shall be allowed on the recharge zone of this regulated development.
12. During the course of the construction related to the referenced regulated project, the owner/developer shall comply with all applicable provisions of 30 TAC §313.4. Construction which is initiated and abandoned, or not completed, shall be returned to a permanent condition such that groundwater in the Edwards Aquifer is protected from potential contamination. Additionally, the applicant, NISD, shall remain responsible for the provisions and special conditions of this approval until such responsibility is legally transferred to another person or entity, upon which that person or entity shall assume responsibility for all provisions and specific conditions of this approval.
13. Pursuant to 30 TAC §313.4(d)(1) and prior to commencing regulated activities, the applicant must provide the San Antonio office with the date on which the regulated activity will commence.
14. Please note that 30 TAC §313.4(g) states that this approval expires two years from this date unless, prior to the expiration date, construction has commenced on the regulated project.

Mr. James Martin  
September 6, 1996  
Page 7

15. Approval of the design of the sewage collection system for this proposed subdivision shall be obtained from the Texas Natural Resources Conservation Commission prior to the commencement of construction of any sewage collection system, the design of which shall be in accordance with 30 TAC §313.5 and 30 TAC §317.
16. The developer shall ensure that construction debris, such as but not limited to scrap wood, bricks, paint, adhesives, containers, paper, etc. is disposed of properly at an authorized landfill off of the Edwards Aquifer Recharge Zone.
17. If asphaltic materials such as "seal coat", emulsion or other asphaltic products used for paving, roofing, etc. wash off or leave the project site the developer shall notify the TNRCC immediately and commence clean-up.
18. Each purchaser or occupant of an individual lot within this development shall be informed in writing about best management practices of pesticide and fertilizer application. The applicant may use Preventing Groundwater Pollution, A Practical Guide to Pest Control, available from the Edwards Aquifer Authority (210/222-2204), or equivalent information produced by recognized authorities such as the Soil Conservation Service, Texas Dept. of Agriculture, U.S. Dept. of Agriculture, etc. The applicant may develop their own educational information (with review by the TNRCC prior to use).

Should clarification of this letter be desired or if we may be of any other assistance, please contact Julie Rogers of our San Antonio office at 210/490-3096.

Sincerely,



Dan Pearson,  
Executive Director

Book D Volm Page  
07033 01173

DP/JPR

Enclosure: Deed Recordation Form

cc: Steven Eklund, M.W. Cude Engineers, L.L.C.  
Vivian Hails, Mayor, City of Helotes  
Renee Green, Bexar County Public Works  
Rick Illgner, Edwards Aquifer Authority  
TNRCC Field Operations, Austin

Kathleen Hartnett White, *Chairman*  
Larry R. Soward, *Commissioner*  
Martin A. Hubert, *Commissioner*  
Glenn Shankle, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 1, 2006

Mr. James Martin  
Superintendent, Facilities & Operations  
Northside Independent School District  
5900 Evers Road  
San Antonio, Texas 78238-1699

Re: EDWARDS AQUIFER, Bexar County  
PROJECT: O'Conner/Clark Reliever High School, Project No. 2401.03  
TYPE: Solution Feature/Sensitive Feature; 30 Texas Administrative Code (TAC) §213.5(f)(2);  
Edwards Aquifer Protection Program, Regulated Entity No. RN104754304, Investigation  
No. 517839

Dear Mr. Martin:

The Texas Commission on Environmental Quality (TCEQ) received a plan which addresses protection of solution features encountered during grading for the above referenced project. It was submitted on behalf of the Northside Independent School District by Raba-Kistner Consultants, Inc. and received by the San Antonio Regional Office on October 26, 2006. Feature locations and assessments are outlined in Table I below.

TABLE I		
Type of Solution Feature	Location	Case*
Cave	Located within a fire lane trench west of Area "C" on the vicinity map submitted with the protection plan.	Case: NA Sensitivity: Sensitive
* For SCS & Storm Sewer lines, see TABLE II (enclosed). For other types of utility excavations, "Case" is not applicable.		

The San Antonio office conducted a site investigation on October 30, 2006. The field investigator agrees with the case assessment and sensitivity (sensitive). The plan submitted by Raba-Kistner Consultants, Inc. has been reviewed and was found to conform to the treatment outlined for this case in Table II (enclosure).

The resolution submitted for this situation is described and illustrated in the enclosure entitled, "Attachment 3 - Narrative Description of Proposed Protection Measure" (2 pages).

Based on the information provided, your protection plan is approved with the following conditions:

1. The location of the solution feature shall be shown on the "as-built" plans.

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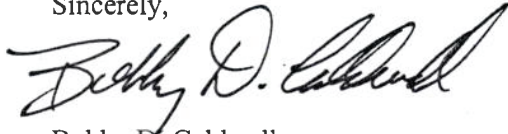
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2. Any concrete or concrete encasement shall meet or exceed City of San Antonio/ San Antonio Water System specifications for minimum thickness and compression strength.
3. A site plan shall be provided showing the location of this geologic feature. It shall be updated and provided when additional features are discovered and reported.

Should clarification of this letter be desired or if we may be of any other assistance, please contact John Mauser of our San Antonio Regional office at 210/403-4024.

Sincerely,



Bobby D. Caldwell  
Water Section Manager  
San Antonio Regional Office

BDC/JKM/eg

Enclosure: Table II (Minimum Standards for Closing Solution Features in Sewer Line Trenches)  
Attachment 3 Narrative Description of Proposed Protection Measure (2 pages).

cc: Richard Klar, PG, Raba-Kistner Consultants, Inc. (fc: 210/699-6426)  
Brian Jones, Bartlett Cocke General Contractors (fc: 210/655-1327)  
Scott Halty, San Antonio Water System  
Renee D. Green, P.E., Bexar County Public Works  
Robert J. Potts, Edwards Aquifer Authority  
TCEQ Central Records, Building F, MC 212



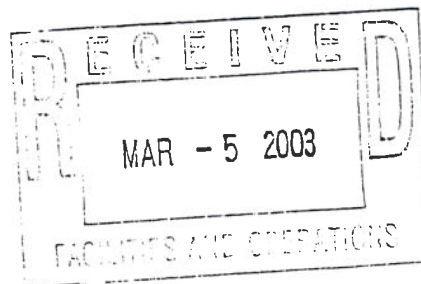
Robert J. Huston, *Chairman*  
 R. B. "Ralph" Marquez, *Commissioner*  
 Kathleen Hartnett White, *Commissioner*  
 Margaret Hoffman, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

February 27, 2003



Mr. James G. Martin  
 Northside Independent School District  
 5615 Grissom Road  
 San Antonio, TX, 78238

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Sandra Day O'Connor High School; Located on the northwest corner of State Highway 16 and Leslie Road; Helotes, 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. 1321.01

Dear Mr. Martin:

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 Rolando Ramirez, P.E. of M.W. Cude Engineers, L.L.C. on behalf of Northside Independent School District on December 5, 2002. Final review of the WPAP submittal was completed after additional material was received on February 24, 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 letters dated October 12, 1999, November 1, 1996, and September 6, 1996. As presented, the proposed modification to the site will consist of the following items. Phase one will include a cafeteria addition, 0.024 acres impervious cover (IC), a new band facility, 0.174 acres IC, a new multi-purpose building agriculture facility, 0.492 acres IC, new parking lot for event parking and band practice, 1.487 acres IC, a covered walkway, 0.009 acres IC, covering of existing walkways, no change in IC, a feed lot pad, 0.01 acres IC, and construction of vegetated filter strips 1, 2, & 3. Phase two will include an agricultural barn, 0.0279 acres IC, utility building expansion, 0.374 acres IC, pole barn, 0.018 acres IC, and portable classroom buildings, 0.355 acres IC. The proposed impervious cover for the entire development is approximately 29.44 acres (40.4 percent) of the total area of the site.

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## PERMANENT POLLUTION ABATEMENT MEASURES

### Vegetated Filter Strip 1 (VFS1)

This filter strip will incorporate the required area necessary to treat storm water run-off from the impervious cover approved on September 6, 1996, and run-off from additional impervious cover included in this modification. VFS1 will treat storm water run-off from the event parking, athletic parking and bleachers (1.731 acres of new impervious cover) in addition to the previously approved impervious cover 1.034 acres which includes the driveway next to the football field. The additional vegetated filter strip of 1.65 acres will be added to the existing 1.9 acres of vegetative filter strip yielding a total area of 3.55 acres of required treatment area. The provided 3.64 acre vegetated filter strip is treating 2.765 acres of IC.

### Vegetated Filter Strip 2 (VFS2)

The proposed band hall, covered walk, cafeteria addition, and portable classrooms are not in close proximity to an area suitable for treating the associated storm water run-off. It is proposed to treat the storm water run-off from approximately half of the existing vocational education building and all of the general classroom building in lieu of the proposed band hall, covered walk, cafeteria addition, and portable classrooms. This option of providing equivalent treatment is feasible since the treatment of rooftops was not required when the September 1996 WPAP approval was granted. Calculations of the impervious cover from the previously mentioned proposed improvements yield a total of 24,610 ft<sup>2</sup>. One half of the vocational education building, and all the general classroom building impervious cover combine for a total 33,630 ft<sup>2</sup>. VFS2 will provide equivalent treatment of runoff from the proposed band hall (7,600 ft<sup>2</sup>), covered walk (470 ft<sup>2</sup>), cafeteria addition (1,060 ft<sup>2</sup>), and portable classrooms (15,480 ft<sup>2</sup>). The required vegetated filter strip is 0.55 acres. The provided 0.74 acre vegetated filter strip is treating 0.772 acres of IC.

### Vegetated Filter Strip 3 (VFS3)

There are 6.08 acres of impervious cover situated through out 18.55 acre drainage area. The structures included in the impervious cover calculation are the following: greenhouse (7,000 ft<sup>2</sup>), agriculture building (20,000 ft<sup>2</sup>), central plan (9,600 ft<sup>2</sup>), a portion of the cafeteria (9,000 ft<sup>2</sup>), security housing (1,450 ft<sup>2</sup>), utility building (5,000 ft<sup>2</sup>), pens (24,000 ft<sup>2</sup>), paving/sidewalk 138,000 ft<sup>2</sup>, feed lot pad (450 ft<sup>2</sup>), multi purpose building, also known as agriculture building, (21,450 ft<sup>2</sup>), utility building expansion (16,300 ft<sup>2</sup>), pole barn (800 ft<sup>2</sup>), and future barn (12,140 ft<sup>2</sup>). A vegetated filter strip of 7.30 acres is required. The provided 10.63 acre vegetated filter strip is treating 6.08 acres of IC. All previously dedicated vegetated filter strips located within the contributing drainage area per the previous WPAP and modification approvals are being replaced by VFS3.

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.

## GEOLOGY

According to the original geologic assessment included with this application, three geologic features not assessed as sensitive were identified on the site. The San Antonio Regional Office did not conduct a site assessment investigation.

## SPECIAL CONDITIONS

- I. All permanent pollution abatement measures shall be operational prior to use of any of the facilities within the contributing drainage area.

- II. The request to use the geologic assessment provided with the original WPAP is granted.

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.

During Construction:

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.

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

Mr. James G. Martin  
February 27, 2003  
Page 5

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. Bumgardner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4023.

Sincerely,



*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. Rolando Ramirez, P.E., M.W. Cude Engineers, L.L.C.  
Mr. Steven Hodges, City of Helotes  
Mr. John Bohuslav, TXDOT San Antonio District  
Ms. Renee Green, Bexar County Public Works  
Mr. Greg Ellis, Edwards Aquifer Authority  
TCEQ Central Records, Building F, MC 212

Book 10275 Page 1343

Kathleen Hartnett White, *Chairman*  
Larry R. Soward, *Commissioner*  
Martin A. Hubert, *Commissioner*  
Glenn Shankle, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 1, 2006

Mr. James G. Martin  
Northside Independent School district  
5900 Evers Road  
San Antonio, Texas 78238-1699

Re: Edwards Aquifer, Bexar County  
NAME OF PROJECT: Sandra Day O'Connor Ag. Addition; Located on the northwest corner of State Hwy 16 and Leslie Road, Texas  
TYPE OF PLAN: Request for Modification of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 and Chapter 317 Edwards Aquifer; Edwards Aquifer Protection Program ID No. 335.04, Investigation No. 511849, Regulated Entity No. RN102772001

Dear Mr. Martin:

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 M.W. Cude Engineers, LLC on behalf of the Northside Independent School District on September 01, 2006. Final review of the WPAP submittal was completed after additional material was received on October 20 and October 30, 2006. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

### PROJECT DESCRIPTION

This facility was previously approved by letters dated October 12, 1999, November 1, 1996 and September 6, 1996. As presented, the proposed modification to the site will consist of the following items. The proposed commercial project will have an area of approximately 4.7 acres (total site area is 72.83 acres). The modification to the existing high school will consist of the following:

1. Two new agricultural barns with adjacent sidewalks.
2. New asphalt parking area.
3. New loop drive to accommodate fire truck access.
4. A new water quality pond and a detention pond.

The modification will also include a partial relocation of vegetated filter strip #3 approved by letter dated February 27, 2003. The table below summarizes modification to the existing vegetated filter #3

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Filter Strip Status	Watershed Area (acres)	Impervious Cover (acres)	Filter Strip Area (square feet)	Required TSS Removal (lbs)
Existing	18.55	6.5*	317,912.20	5549
Future	15.95	6.8	319,135.00	5549

\*the impervious cover approved by February 27, 2003 letter was to be 6.8 acres, however 0.3 acres (pole barn and future barn) were not constructed

The impervious cover will be 1.73 acres (36.8% of the 4.7 acres disturbed). Impervious cover for the entire 72.83 acre site will become 31.57 acres. Project wastewater will be disposed of by conveyance to the existing Leon Creek Wastewater Treatment Plant.

#### 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, a partial sedimentation/filtration basin designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (BMPs)(July 2005) will be constructed. The basin is designed to provide treatment of 1413 pounds (lbs) of Total Suspended Solids (TSS) from 6.01 acres with a capture volume of 9,018 cubic feet and a sand filter area of 2,066 square feet. The approved measures have been presented to meet the required 80 percent removal of the increased load in TSS caused by the project.

#### GEOLOGY

According to the geologic assessment included with the application, no geologic or manmade features were found on the project site. The San Antonio Regional Office did not conduct a site investigation.

#### SPECIAL CONDITIONS

1. The sedimentation/filtration basin shall be operational prior to the use of any of the facilities approved by this letter.
2. All sediment and/or media removed from the sedimentation/filtration basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335 as applicable.
3. Intentional discharges of sediment laden stormwater are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.
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.
4. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letters of February 27, 2003, October 12, 1999, November 1, 1996, and September 6, 1996.
5. The applicant shall provide all contractors with a copy of pages 1-35 through 1-60 of TCEQ TGM RG-348 (2005) as a guide for soil stabilization practices and assure that any soil stabilization is performed in accordance with these practices and the approved plan.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, 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 program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.



During Construction:

8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
10. No wells exist on the site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
12. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
13. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

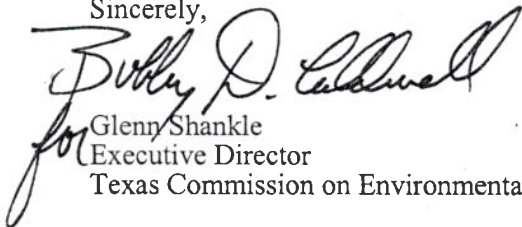
14. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

Mr. James G. Martin  
November 1, 2006  
Page 5

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

If you have any questions or require additional information, please contact Agnieszka Hobson of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4075.

Sincerely,

  
for Glenn Shankle  
Executive Director  
Texas Commission on Environmental Quality

GS/AMH/eg

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

cc: Mr. Rolando "Ron" Ramirez, P.E., M.W. Cude Engineers, LLC  
Mr. Jon Allan, City of Helotes  
Mr. Scott Halty, San Antonio Water System  
Ms. Renee Green, Bexar County Public Works  
Mr. Robert J. Potts, Edwards Aquifer Authority  
TCEQ Central Records, MC 212

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



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

May 27, 2011

Mr. Vernon Dunagin  
Northside Independent School District  
5900 Evers Road  
San Antonio, TX 78238

Re: Edwards Aquifer Protection Program, Bexar County

Name of Project: NISD Sandra Day O'Conner High School ROTC Addition; Located at the southwest corner of Hwy. 16 and Leslie Rd., Helotes, Texas

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

Edwards Aquifer Protection Program San Antonio File No. 335.06; Investigation No. 906329; Regulated Entity No. RN104754304

Dear Mr. Dunagin:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP modification for the above-referenced project submitted to the San Antonio Regional Office by M.W. Cude Engineers, LLC on behalf of Northside Independent School District on March 15, 2011. Final review of the WPAP was completed after additional material was received on May 17, 2011. 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**

The high school was originally approved by letter dated September 6, 1996 for construction of 25.91 acres of impervious cover within the 72.83 acre site. The permanent best management practices approved was a sand filter basin and vegetated filter strips.

REPLY TO: REGION 13 • 14250 JUDSON RD. • SAN ANTONIO, TEXAS 78233-4480 • 210-490-3096 • FAX 210-545-4329

P.O. Box 13087 • Austin, Texas 78711-3087 • 512-239-1000 • Internet address: [www.tceq.state.tx.us](http://www.tceq.state.tx.us)

printed on recycled paper using soy-based ink

Since the first approval, six modifications have been approved. The most recent modification was approved by letter dated January 3, 2008 and resulted in removing vegetated filters strips and adding a sand filter basin. The impervious cover remained at 31.57 acres.

### **Project Description**

The proposed school project will have an area of 2.68 acres within the larger 72.83 acre site. It will include the construction of a new building expansion with new parking and sidewalk and the relocation of an existing driveway. The impervious cover will increase by 0.579 acres and now totals 32.15 acres (44.14 percent). Project wastewater will be disposed of by conveyance to the existing Leon Creek Water Recycling Center owned by the San Antonio Water System.

### **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 Vortechs system, 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 1,060 pounds of TSS generated from the 0.579 acre increase in impervious cover (472 lbs) and from removing the vegetated filter strip that was treating 0.72 acres of impervious cover (588 lbs). The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The precast Vortechs Vx16000 unit will have a drainage area of 2.10 acres with 1.27 acres of impervious cover. The unit has been sized for 1,060 pounds of TSS.

### **Geology**

According to the geologic assessment included with the application, the site is located on the Del Rio Clay. One manmade feature in bedrock (boring) was evaluated as non-sensitive by the project geologist since the feature had been backfilled. The San Antonio Regional Office did not conduct a site assessment.

### **Special Conditions**

1. This modification is subject to all Special and Standard Conditions listed in the approval letters of the previously approved WPAPs.
2. The permanent BMP shall be operational prior to occupancy of the facility.
3. All sediment and/or media removed from the permanent BMP during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

### **Standard Conditions**

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

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

*Prior to Commencement of Construction:*

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must

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

*During Construction:*

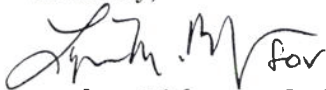
10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. No wells are located within the project limits. 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.

*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 Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,



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

MRV/CEF/eg

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

cc: Mr. Jeffrey Randow, P.E., CFM, M.W. Cude Engineers, LLC

Mr. Vernon Dunagin

May 27, 2011

Page 6

Mr. Scott Halty, San Antonio Water System

Ms. Renee Green, P.E., Bexar County Public Works

Mr. George Wissmann, Trinity Glen Rose UCD

Mr. Karl Dreher, General Manager, Edwards Aquifer Authority

TCEQ Central Records, Building F, MC 212



Bryan W. Shaw, Ph.D., *Chairman*  
 Carlos Rubinstein, *Commissioner*  
 Toby Baker, *Commissioner*  
 Zak Covar, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 13, 2012

Mr. Leroy San Miguel  
 Northside ISD  
 5900 Evers Road  
 San Antonio, Texas 78250

Re: Edwards Aquifer, Bexar County  
 NAME OF PROJECT: NISD Sandra Day O'Connor High School, 12221 Leslie Road; Helotes, Texas  
 TYPE OF PLAN: Request for Technical Clarification on a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer; Edwards Aquifer Protection Program San Antonio File No. 335.08; Regulated Entity No. RN104754304; Investigation No. 1035681

Dear Mr. San Miguel:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the request for technical clarification of the approved WPAP for the above-referenced project submitted to the San Antonio Regional Office by CUDE Engineers on behalf of Northside ISD on August 29, 2012. Final review of the request was completed after additional material was received on September 25, 2012.

As presented to the TCEQ, the submitted request describes a proposed change to the site layout from the previously approved site plan. The request includes the demolition of the existing track, site grading, reconstruction of the track, and placement of sidewalks. The resulting impervious cover for the site will increase by 0.37 acres (16,117 square feet) from the previously approved 7.89 acres to 8.26 acres. The drainage area within the site has not been revised and routes storm water to the previously approved partial sedimentation/filtration basin. The previously approved basin has been constructed as approved and is sufficiently sized to accommodate the proposed changes without modification to the basin. Due to the net increase in impervious cover, an additional 302 pounds of Total Suspended Solids (TSS) will be generated by the track improvements.

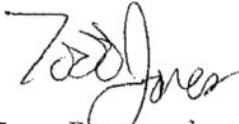
Basin	Total Area (ac)	Total IC (ac)	Min. Capture Volume (ft <sup>3</sup> )	Design Capture Volume (ft <sup>3</sup> )	Min. Filter Area (ft <sup>2</sup> )	Design Filter Area (ft <sup>2</sup> )	Required TSS Removal (lb/yr)	Design TSS Removal (lb/yr)
Sand Filtration Basin	57.53	8.26	45,211	53,100	4,521	5,612	6,740	8,005

Mr. San Miguel  
November 13, 2012  
Page 2

Based on the engineer's concurrence of compliance, and the submitted planning materials, the proposed project does not include any activities outlined in 30 TAC 213.4(j) that would require a modification to the approved WPAP. The above referenced file will be updated with the submitted information. Please note the activities described in the submitted request are subject to all Special and Standard Conditions listed in the WPAP approval letter dated January 3, 2008.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Michael Isley, P.E. of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4057.

Sincerely,



for

Lynn Bungardner  
Water Section Manager  
San Antonio Regional Office  
Texas Commission on Environmental Quality

LMB/MI/eg

cc: Mr. Kevin Hunt, P.E., CUDE Engineers  
The Honorable Thomas Schoolcraft, City of Helotes  
Ms. Renee Green, P.E., Bexar County Public Works  
Mr. Scott Halty, P.E., San Antonio Water System  
Mr. Karl J. Dreher, General Manger, Edwards Aquifer Authority  
Mr. George Wissmann, Trinity Glen Rose Conservation District  
TCEQ Central Records, MC 212

# **Attachment B**

## **Narrative of Proposed Modification**

## **Narrative of Proposed Modification**

### **PROJECT OVERVIEW**

Northside ISD is looking at adding new buildings and parking lots (as shown in enclosed Overall Site Plan) to O'Connor High School. The site is located at 12221 Leslie Road within the City limits of Helotes with the legal description as CB 4480B BLK 1 LOT 4 EXC NE IRR 5FT HELOTES AREA HIGH SCHOOL, Bexar County, Texas. The site is entirely located within Leon Creek Watershed and a portion of it is within the 100-year FEMA floodplain, Firm Panel 48029C0220G effective September 29, 2010, as shown in Exhibits A of this report.

### **METHODOLOGY**

#### **Overview**

#### ***Existing Hydrology***

Runoff generated from the existing Students Parking Lot, existing drainage areas 1, 2 and 3 as shown in enclosed Existing Drainage Plan HDY 1.0 is mitigated to the existing Water Quality Basin located south of the Students Parking Lot via underground storm drains. The runoff from the existing drainage areas 4 and 5 are conveyed via the existing channel and a series of culverts to the floodplain on the southwest corner of the property. In drainage area 6, a portion of the runoff drains to the existing quarry west of the site, and the other portion drains to the existing road between drainage areas 6 and 7. Drainage area 7 directly drains to the floodplain southwest of the site as shown in enclosed Existing Drainage Plan HDY 1.0.

#### ***Proposed Hydrology***

A portion of the increase in runoff generated from this development will be conveyed to the existing Water Quality Basin located south of the Students Parking Lot as shown in enclosed Proposed Hydrology Plan HDY 2.0. This increase in runoff will be treated in accordance with TCEQ requirements and the Water Quality Basin will be upsized to accommodate the increase in runoff. The existing basin is a full sedimentation and filtration basin and will be converted to a partial filtration basin to fit within the footprint of the area allowed for development for this project. This increase in basin size is also due to there being an area of the existing campus and bus loop, drainage areas 4 and 5 that was treated by several VFS that will now be treated with the new partial sand filtration basin. After runoff has been treated, it will be discharged via an outfall to the FEMA floodplain portion of the site. A portion of the runoff from the project, specifically the area around the new barn, Drainage area 7 will be treated with a new VFS. The shop area (near proposed Building Q), Drainage area 6, will not be treated directly, but will be handled via over treatment of the existing student parking area and portions of the existing school that were previously treated with several VFS as noted above.

# **Attachment C**

## Site Plan



# **Water Pollution Abatement Plan Application (TCEQ-0585)**

# Water Pollution Abatement Plan Application

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
Practice Leader | Senior Associate

Date: 9/22/2023

Signature of Customer/Agent:



**Regulated Entity Name:** O'Connor High School Agricultural Area

## Regulated Entity Information

1. The type of project is:

- Residential: Number of Lots: \_\_\_\_\_
- Residential: Number of Living Unit Equivalents: \_\_\_\_\_
- Commercial
- Industrial
- Other: Educational. Construction of new Agricultural Science and Technology Buildings, Parking Lot, and Driveways for O'Connor High School.

2. Total site acreage (size of property): 26.936 out of 157.625



3. Estimated projected population: N/A
4. The amount and type of impervious cover expected after construction are shown below:

**Table 1 - Impervious Cover Table**

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	200,710	÷ 43,560 =	4.608
Parking	426,013	÷ 43,560 =	9.780
Other paved surfaces	243,083	÷ 43,560 =	5.580
Total Impervious Cover	869,806	÷ 43,560 =	19.968

**Total Impervious Cover 19.968 ÷ Total Acreage 26.936 X 100 = 74.130% Impervious Cover**

5.  **Attachment A - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.
6.  Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

### ***For Road Projects Only***

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

7. Type of project:

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

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

- Concrete
- Asphaltic concrete pavement
- Other: \_\_\_\_\_

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

Width of R.O.W.: \_\_\_\_\_ feet.

L x W = \_\_\_\_\_ Ft<sup>2</sup> ÷ 43,560 Ft<sup>2</sup>/Acre = \_\_\_\_\_ acres.

10. Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area: \_\_\_\_\_ feet.

L x W = \_\_\_\_\_ Ft<sup>2</sup> ÷ 43,560 Ft<sup>2</sup>/Acre = \_\_\_\_\_ acres.

Pavement area \_\_\_\_\_ acres ÷ R.O.W. area \_\_\_\_\_ acres x 100 = \_\_\_\_\_% impervious cover.

11.  A rest stop will be included in this project.  
 A rest stop will not be included in this project.
12.  Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

### ***Stormwater to be generated by the Proposed Project***

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

### ***Wastewater to be generated by the Proposed Project***

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

<u>100%</u> Domestic	<u>1500</u> Gallons/day
<u>0%</u> Industrial	<u>      </u> Gallons/day
<u>0%</u> Commingled	<u>      </u> Gallons/day
TOTAL gallons/day <u>1500</u>	

15. Wastewater will be disposed of by:

- On-Site Sewage Facility (OSSF/Septic Tank):
- Attachment C - Suitability Letter from Authorized Agent.** An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.
- Sewage Collection System (Sewer Lines):
- Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
- Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.
- The SCS was previously submitted on 04/21/1997.
- 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 SAWS (Leon Creek) (name) Treatment Plant. The treatment facility is:

Existing.

Proposed.

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

## **Site Plan Requirements**

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

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

Site Plan Scale: 1" = 400'.

18. 100-year floodplain boundaries:

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

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

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Firm Map number 48029C0220G Effective Sep. 2010.

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

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

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

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

The wells are not in use and have been properly abandoned.

The wells are not in use and will be properly abandoned.

The wells are in use and comply with 16 TAC §76.

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

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

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

No sensitive geologic or manmade features were identified in the Geologic Assessment.

- Attachment D - Exception to the Required Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.
22.  The drainage patterns and approximate slopes anticipated after major grading activities.
23.  Areas of soil disturbance and areas which will not be disturbed.
24.  Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
25.  Locations where soil stabilization practices are expected to occur.
26.  Surface waters (including wetlands).  
 N/A
27.  Locations where stormwater discharges to surface water or sensitive features are to occur.  
 There will be no discharges to surface water or sensitive features.
28.  Legal boundaries of the site are shown.

### ***Administrative Information***

29.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
30.  Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

# **Attachment A**

## Factors Affecting Water Quality

## **Factors Affecting Water Quality**

During construction activity factors that could affect surface water quality are as follows:

- 1) Onsite fueling operations by portable fuel trucks providing fuel to construction equipment. Fuels will not be stored onsite.
- 2) Automotive and Fuel Powered Equipment (including backhoes and generators) may be used during construction.
- 3) Sediment erosion from grading operations and/or topsoil placement prior to completion of vegetative restoration.
- 4) Ready Mix concrete truck washout activities.
- 5) Brick mortar and stucco washout activities.
- 6) Base and asphaltic products being placed.
- 7) Excavation and trenching activities for the installation of utilities, site grading, lighting, asphalt parking lot construction, concrete parking lot construction, building construction, and other site improvements such as sidewalks.
- 8) Trash/refuse from general construction activities.
- 9) Paints and Solvents or other materials used in the finish out of the building.
- 10) Sewage spills from portable toilets or collection tank for sewage from the construction trailer.

After construction activity factors that could affect surface water quality are as follows:

- 1) General trash from littering by personnel or students using the facility and surrounding areas.
- 2) Fuel/Grease from automobiles and other motor vehicles.
- 3) Animal Waste.

# **Attachment B**

## Volume and Character of Stormwater

## Volume and Character of Stormwater

### VOLUME:

The site being less than 200 Acres, Modified Rational Method (Q=CIA) used to determine Q; City of San Antonio Unified Development Code guidance used for Rainfall Intensities and Runoff Coefficients. The C values were based off the COSA UDC Tables 504-1(a) and 504-1 (b) and the evaluation of the site characteristics.

The total acreage for the project site is 26.963 acres (Project Boundary). The below table shows the runoff for existing and proposed conditions of the project.

	<b>Acreage</b>	<b>Q5<sup>1</sup></b>	<b>Q25<sup>1</sup></b>	<b>Q100<sup>1</sup></b>
Existing	26.963 Acres <sup>2</sup>	164.50 <sup>3</sup>	229.87 <sup>3</sup>	284.42 <sup>3</sup>
Proposed	26.963 Acres <sup>2</sup>	170.08 <sup>3</sup>	237.54 <sup>3</sup>	294.11 <sup>3</sup>
<b>Difference</b>		<b>5.58<sup>3</sup></b>	<b>7.67<sup>3</sup></b>	<b>9.69<sup>3</sup></b>

<sup>1</sup>Flows for the various storm events are in cubic feet per second.

<sup>2</sup>Areas shown are those for the respective Headwaters San Antonio River.

<sup>3</sup>Refer to the attached Hydrology Calculation Sheet for specifics on the time of concentrations, slopes, and other data for each sub-basin. There are plan sheets HDY 1.0, HDY 2.0 that accompany this report that indicate the locations of these areas.

### CHARACTER:

The character of post-construction stormwater runoff will include small amounts of Total Suspended Solids (TSS) and these suspended solids will be treated by the upsized student parking lot water quality basin. Water Quality practices should be typical for a new parking lot, roadway, and building type construction with the associated sidewalks and drainage infrastructure.

Runoff from area's impervious cover contributing to the total suspended solids loading will be accounted for by one of two ways. Please see enclosed Total Suspended Solids (TSS) Calculations.



# **Attachment C**

## **TCEQ Basin Calculations**

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:

$L_{M \text{ TOTAL PROJECT}}$  = 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 = **Bexar**  
Total project area included in plan \* = **26.94** acres  
Predevelopment impervious area within the limits of the plan \* = **17.06** acres  
Total post-development impervious area within the limits of the plan \* = **19.97** acres  
Total post-development impervious cover fraction \* = **0.74**  
 $P$  = **30** inches

$L_{M \text{ TOTAL PROJECT}}$  = **2375** 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 = **22.20** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres  
Post-development impervious area within drainage basin/outfall area = **17.07** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.77**  
 $L_{M \text{ THIS BASIN}}$  = **13929** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Sand Filter**  
Removal efficiency = **89** percent

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

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

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

where:

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

$A_C$  = **22.20** acres  
 $A_i$  = **17.07** acres  
 $A_p$  = **5.13** acres  
 $L_R$  = **15844** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **15088** lbs.  
 $F$  = **0.95**

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.**

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth = **2.60** inches

Post Development Runoff Coefficient = **0.58**  
On-site Water Quality Volume = **122146** 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 = **24429**

**Total Capture Volume (required water quality volume(s) x 1.20) = 146575** 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 = **146575** cubic feet  
Minimum filter basin area = **6786** square feet  
Maximum sedimentation basin area = **61073** square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = **15268** square feet For maximum water depth of 8 feet

**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = **146575** cubic feet  
Minimum filter basin area = **12215** square feet  
Maximum sedimentation basin area = **48858** square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = **3054** 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<sub>c</sub>) = **NA** square feet

**14. Stormwater Management StormFilter® by CONTECH**

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

**THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES**

**15. Grassy Swales**

Designed as Required in RG-348

Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A = **0.00** acres

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:

$L_{M \text{ TOTAL PROJECT}}$  = 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 = **Bexar**  
 Total project area included in plan \* = **26.94** acres  
 Predevelopment impervious area within the limits of the plan \* = **17.06** acres  
 Total post-development impervious area within the limits of the plan \* = **19.97** acres  
 Total post-development impervious cover fraction \* = **0.74**  
 $P$  = **30** inches

$L_{M \text{ TOTAL PROJECT}}$  = **2375** 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 = **3.49** acres  
 Predevelopment impervious area within drainage basin/outfall area = **0.84** acres  
 Post-development impervious area within drainage basin/outfall area = **2.26** acres  
 Post-development impervious fraction within drainage basin/outfall area = **0.65**  
 $L_{M \text{ THIS BASIN}}$  = **1159** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Sand Filter**  
 Removal efficiency = **89** percent

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

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

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

where:

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

$A_C$  = **3.49** acres  
 $A_i$  = **2.26** acres  
 $A_p$  = **1.23** acres  
 $L_R$  = **2106** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **1159** lbs.

$F$  = **0.55**

**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 = **0.49** inches

Post Development Runoff Coefficient = **0.46**  
On-site Water Quality Volume = **2822** 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 = **564**  
Total Capture Volume (required water quality volume(s) x 1.20) = **3387** 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 = **3387** cubic feet  
Minimum filter basin area = **157** square feet  
Maximum sedimentation basin area = **1411** square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = **353** square feet For maximum water depth of 8 feet

**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = **3387** cubic feet  
Minimum filter basin area = **282** square feet  
Maximum sedimentation basin area = **1129** square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = **71** 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<sub>c</sub>) = **NA** square feet

**14. Stormwater Management StormFilter® by CONTECH**

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

THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

**15. Grassy Swales**

Designed as Required in RG-348

Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A = **0.00** acres

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:

$L_{M \text{ TOTAL PROJECT}}$  = 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 = **Bexar**  
Total project area included in plan \* = **26.94** acres  
Predevelopment impervious area within the limits of the plan \* = **17.06** acres  
Total post-development impervious area within the limits of the plan \* = **19.97** acres  
Total post-development impervious cover fraction \* = **0.74**  
 $P$  = **30** inches

$L_{M \text{ TOTAL PROJECT}}$  = **2375** 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 = **1.24** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.27** acres  
Post-development impervious area within drainage basin/outfall area = **0.64** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.52**  
 $L_{M \text{ THIS BASIN}}$  = **302** lbs.

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Vegetated Filter Strips**  
Removal efficiency = **85** percent

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

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

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

where:

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

$A_C$  = **1.24** acres  
 $A_i$  = **0.64** acres  
 $A_p$  = **0.60** acres  
 $L_R$  = **573** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **302** lbs.

$F$  = **0.53**

**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 = **0.46** inches

Post Development Runoff Coefficient = 0.37  
On-site Water Quality Volume = 761 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 = 152

Total Capture Volume (required water quality volume(s) x 1.20) = 913 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 = NA cubic feet  
Minimum filter basin area = NA square feet  
Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = NA square feet For maximum water depth of 8 feet

**9B. Partial Sedimentation and Filtration System**

Water Quality Volume for combined basins = NA cubic feet  
Minimum filter basin area = NA square feet  
Maximum sedimentation basin area = NA square feet For minimum water depth of 2 feet  
Minimum sedimentation basin area = NA 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<sub>c</sub>) = NA square feet

**14. Stormwater Management StormFilter® by CONTECH**

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

THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

**15. Grassy Swales**

Designed as Required in RG-348

Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A = 0.00 acres

# **Attachment D**

## Hydrologic Calculations



### Rational Methodology - Existing Hydrology

For Areas less than 200 Acres in the City of San Antonio and Bexar County

Project Number and Name: 762301481 O'Connor High School  
 Site Location/Address: 12221 Leslie Rd, Helotes, TX 78023  
 Precipitation Area: PA-3 Reference COSA Appendix H. 5.4.1 "2 Year 24 Hour Rainfall Depth"

Date: 9/22/2023  
 City: Helotes  
 County: Bexar County

WATERSHED		TIME OF CONCENTRATION										COEFFICIENT	FLOW						NOTES									
		Sheet Flow					Shallow Concentrated Flow						Channel or Storm Sewer Flow		Total T <sub>c</sub> (min)	INTENSITY												
		n	L (ft)	s (%)	T <sub>c</sub> (min)	L (ft)	s (%)	T <sub>c</sub> (min)	L (ft)	s (%)	T <sub>c</sub> (min)		v (ft/s)	L (ft)		T <sub>c</sub> (min)	I <sub>2</sub> (in/hr)	I <sub>5</sub> (in/hr)		I <sub>10</sub> (in/hr)	I <sub>15</sub> (in/hr)	I <sub>20</sub> (in/hr)	I <sub>30</sub> (in/hr)	Q <sub>2</sub> (cfs)	Q <sub>5</sub> (cfs)	Q <sub>10</sub> (cfs)	Q <sub>15</sub> (cfs)	Q <sub>20</sub> (cfs)
DA - 1	3.153	0.011	100	1.7	1.16	0	0.0	0	155	1.3	1.11	6	229	0.64	2	6.30	7.88	9.20	11.00	12.36	13.79	0.95	18.92	23.67	27.63	33.04	37.12	41.42
DA - 2	3.967	0.011	100	1.3	1.29	0	0.0	0	284	0.3	4.25	6	267	0.74	6	5.95	7.45	8.73	10.43	11.75	13.08	0.95	22.33	27.95	32.76	39.13	44.09	49.08
DA - 3	2.869	0.011	100	1.1	1.38	0	0.0	0	71	0.9	0.61	6	340	0.94	2	6.30	7.88	9.20	11.00	12.36	12.49	0.96	17.28	21.62	25.24	30.17	33.90	34.26
DA - 4	9.073	0.081	100	1.1	6.83	71	2.9	0.43	0	0	0	6	479	1.33	8	5.42	6.81	7.98	9.54	10.78	11.97	0.85	41.88	52.62	61.66	73.71	83.29	92.49
DA - 5	3.139	0.081	100	0.7	8.19	287	1.5	2.42	65	1.5	0.44	0	0	0.00	11	4.85	6.08	7.11	8.50	9.58	10.64	0.87	13.22	16.57	19.37	23.16	26.10	28.99
DA - 6	3.493	0.15	100	1	11.62	857	1.2	8.08	0	0	0	0	0	0.00	19	3.75	4.66	5.40	6.45	7.21	8.00	0.83	10.89	13.53	15.68	18.73	20.94	23.24
DA - 7	1.242	0.081	100	4.7	3.82	226	1.5	1.91	0	0.5	0	0	0	0.00	5	6.30	7.88	9.20	11.00	12.36	13.79	0.88	6.87	8.59	10.03	12.00	13.48	15.04
<b>Total</b>																							<b>131.38</b>	<b>164.55</b>	<b>192.37</b>	<b>229.95</b>	<b>258.93</b>	<b>284.51</b>

A = Area of watershed in acres

**COSA Appendix H. 5.4.1 - Overland Flow**  
 2 Year 24 Hr Rainfall Depth P<sub>2</sub> = 3.96

n = Manning's n for Sheet Flow

T<sub>c</sub> = Time of concentration in minutes

C = Runoff coefficient

C<sub>w</sub> = Weighted Runoff Coefficient

I = Intensity

$$T_c = \frac{0.42 + (nL)^{0.8}}{P_2^{0.5} + 5^{0.4}}$$

**COSA 5.4.2 Time of Concentration - Shallow Concentrated Flow**

Shallow Concentrated Flow (Unpaved)  $T_c = \frac{L}{60 + 16.13 + 5^{0.5}}$

Shallow Concentrated Flow (Paved)  $T_c = \frac{L}{60 + 20.32 + 5^{0.5}}$



**Weighted Coefficient**

No	Area 1	Area 2	Area 3	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>Weighted</sub>
DA - 1	3.036	0.111	0	0.96	0.75	0	0.95
DA - 2	3.693	0.267	0	0.96	0.75	0	0.95
EX - 3	2.818	0.053	0	0.96	0.75	0	0.96
DA - 4	4.609	4.464	0	0.96	0.75	0	0.85
DA - 5	1.853	1.296	0	0.95	0.75	0	0.87
DA - 6	1.126	2.353	0	0.96	0.77	0	0.83
DA - 7	0.706	0.536	0	0.96	0.77	0	0.88

## Rational Methodology - Proposed Hydrology

For Areas less than 200 Acres in the City of San Antonio and Bexar County

Project Number and Name: 762301481 O'Connor High School  
 Site Location/Address: 12221 Leslie Rd, Helotes, TX 78023  
 Precipitation Area: PA-3 Reference COSA Appendix H. 5.4.1 "2 Year 24 Hour Rainfall Depth"

Date: 9/22/2023  
 City: Helotes  
 County: Bexar County

WATERSHED		TIME OF CONCENTRATION										COEFFICIENT	FLOW						NOTES										
		Shallow Concentrated Flow					Channel or Storm Sewer Flow						C	FLOW															
No.	Area (acres)	Sheet Flow					Shallow Concentrated Flow					Total T <sub>c</sub> (min)		INTENSITY						C	Q <sub>2</sub> (cfs)	Q <sub>5</sub> (cfs)	Q <sub>10</sub> (cfs)	Q <sub>25</sub> (cfs)	Q <sub>50</sub> (cfs)	Q <sub>100</sub> (cfs)			
		n	L (ft)	s (%)	T <sub>c</sub> (min)	T <sub>c</sub> (min)	L (ft)	s (%)	T <sub>c</sub> (min)	L (ft)	s (%)		T <sub>c</sub> (min)	v (ft/s)	L (ft)	T <sub>c</sub> (min)	I <sub>2</sub> (in/hr)	I <sub>5</sub> (in/hr)	I <sub>10</sub> (in/hr)								I <sub>25</sub> (in/hr)	I <sub>50</sub> (in/hr)	I <sub>100</sub> (in/hr)
DA - A	3.153	0.011	100	1.7	1.16	0	0.0	0	155	1.3	1.11	6	229	0.64	2	6.30	7.88	9.20	11.00	12.36	13.79	0.95	18.91	23.66	27.62	33.03	37.11	41.40	
DA - B	3.967	0.011	100	1.3	1.29	0	0.0	0	284	0.3	4.25	6	267	0.74	6	5.95	7.45	8.73	10.43	11.75	13.08	0.95	22.32	27.94	32.74	39.12	44.07	49.06	
DA - C	2.869	0.011	100	1.1	1.38	0	0.0	0	71	0.9	0.61	6	340	0.94	2	6.30	7.88	9.20	11.00	12.36	12.49	0.96	17.28	21.62	25.24	30.18	33.91	34.27	
DA - D	9.073	0.081	100	1.7	5.74	71	2.9	0.43	0	0	0	6	437	1.21	7	5.66	7.11	8.33	9.95	11.24	12.49	0.88	45.17	56.75	66.48	79.41	89.71	99.69	
DA - E	3.139	0.081	100	0.7	8.19	287	1.5	2.42	65	1.5	0.44	6	21	0.06	11	4.85	6.08	7.11	8.50	9.58	10.64	0.87	13.29	16.66	19.48	23.29	26.25	29.15	
DA - F	3.493	0.15	100	1	11.62	540	1.0	5.58	316	2.2	1.75	0	0	0.00	18	3.86	4.80	5.55	6.63	7.42	8.24	0.89	12.00	14.93	17.26	20.62	23.08	25.63	
DA - G	1.242	0.081	100	4.8	3.79	181	1.8	1.39	45	0.5	0.52	0	0	0.00	5	6.30	7.88	9.20	11.00	12.36	13.79	0.87	6.81	8.52	9.95	11.89	13.37	14.91	
<b>Total</b>																<b>135.80</b>	<b>170.08</b>	<b>198.78</b>	<b>237.54</b>	<b>267.49</b>	<b>294.11</b>								

A = Area of watershed in acres

**COSA Appendix H. 5.4.1 - Overland Flow**  
 2 Year 24 Hr Rainfall Depth P<sub>2</sub> = 3.96

n = Manning's n for Sheet Flow

T<sub>c</sub> = Time of concentration in minutes

C = Runoff coefficient

C<sub>w</sub> = Weighted Runoff Coefficient

I = Intensity

$$T_c = \frac{0.42 + (nL)^{0.8}}{P^{0.5} + 5^{0.4}}$$

**COSA 5.4.2 Time of Concentration - Shallow Concentrated Flow**

Shallow Concentrated Flow (Unpaved)  $T_c = \frac{L}{60 + 16.13 + 5^{0.5}}$

Shallow Concentrated Flow (Paved)  $T_c = \frac{L}{60 + 20.32 + 5^{0.5}}$



**Weighted Coefficient**

No.	Area 1	Area 2	Area 3	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>Weighted</sub>
DA - A	3.036	0.117	0	0.96	0.75	0	0.95
DA - B	3.693	0.274	0	0.96	0.75	0	0.95
DA - C	2.818	0.051	0	0.96	0.75	0	0.96
DA - D	5.603	3.470	0	0.96	0.75	0	0.88
DA - E	1.929	1.210	0	0.95	0.75	0	0.87
DA - F	2.212	1.281	0	0.96	0.77	0	0.89
DA - G	0.658	0.584	0	0.96	0.77	0	0.87

## Difference Between Existing and Proposed Flowrates

<b>Storm Frequency</b>	<b>Pre-Development (CFS)</b>	<b>Post-Development (CFS)</b>	<b>Difference (CFS)</b>
<b>2-Year</b>	<b>131.38</b>	<b>135.80</b>	<b>4.42</b>
<b>5-Year</b>	<b>164.55</b>	<b>170.08</b>	<b>5.53</b>
<b>10-Year</b>	<b>192.37</b>	<b>198.78</b>	<b>6.41</b>
<b>25-Year</b>	<b>229.95</b>	<b>237.54</b>	<b>7.59</b>
<b>50-Year</b>	<b>258.93</b>	<b>267.49</b>	<b>8.56</b>
<b>100-Year</b>	<b>284.51</b>	<b>294.11</b>	<b>9.60</b>

# **Temporary Stormwater Section (TCEQ-0602)**

# Temporary Stormwater Section

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
Practice Leader | Senior Associate

Date: 9/22/2023

Signature of Customer/Agent:

  
\_\_\_\_\_

**Regulated Entity Name:** O'connor High School agricultural science and technology

## Project Information

### Potential Sources of Contamination

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

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

The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

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

- Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.
  - Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
  - Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
  - Fuels and hazardous substances will not be stored on the site.
2.  **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
  3.  Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
  4.  **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

### ***Sequence of Construction***

5.  **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
  - For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
  - For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
6.  Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Helotes Creek

### ***Temporary Best Management Practices (TBMPs)***

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

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

- A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
  - A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
  - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
  - A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8.  The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
  - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9.  **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10.  **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
  - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
  - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
  - There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11.  **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- N/A
12.  **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13.  All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14.  If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15.  Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16.  Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

### ***Soil Stabilization Practices***

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

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



18.  Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
19.  Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

### ***Administrative Information***

20.  All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21.  If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
22.  Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

# **Attachment A**

## **Spill Prevention, Control and Response**

The spill response actions are to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees. *Adapted from RG-348, Section 1.4.16.*

### ***Education***

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills.
- Employees should also be aware of when spill must be reported to the TCEQ.
- Educate employees and subcontractors on potential dangers from spills and leaks.
- Incorporate into regular safety meetings the proper disposal procedures.
- Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

### ***General Measures***

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from storm water during rainfall to the extent that it doesn’t compromise cleanup activities.
- Do not bury or wash spills with water.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

### ***Cleanup***

- Clean up leaks and spills immediately.

### ***Minor Spills***

- 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. Use absorbent materials on small spills rather than hosing down or burying the spill. Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - 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.
- Spills should be cleaned up immediately:
  - Contain spread of the spill.
  - Notify the project foreman immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags).
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
  - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

### ***Significant/Hazardous Spills***

- For significant or hazardous spills that are in reportable quantities:
- 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.
- 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.
- Notification should first be made by telephone and followed up with a written report.
- The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

### ***Vehicle and Equipment Maintenance***

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills. Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- 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.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute storm water. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal.
- Store cracked batteries in a non-leaking secondary container.

### ***Vehicle and Equipment Fueling***

- If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills / leaks.

### ***Product Specific Practices***

- 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, 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.
- 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 SW3P site plan.
- Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be poured into the storm sewer system or drainage channels, but will be properly disposed of according to manufacturers' instructions or state/local regulations.
- 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.

# **Attachment B**

## Potential Sources of Contamination

## Potential Sources of Contamination

Potential sources not described in Attachment A.

Potential Source: Stock piled top soil, and fill material.

Preventive Measure: Stock piles shall be placed away from any steep slopes, sensitive features, surface or groundwater. The down gradient side shall be protected with silt fencing.

Potential Source: Miscellaneous litter and debris from construction workers and construction materials.

Preventive Measure: Trash receptacles will be placed on site for proper disposal. Receptacles will be emptied or replaced by a registered trash hauler as necessary.

Potential Source: Petroleum Products (diesel, oil, hydraulic fluid, gun grease).

Preventive Measure: All on site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. No petroleum products will be stored onsite. Service vehicles will come on site to fuel all equipment. All oil, hydraulic fluid, and gun grease will be stored on work or service vehicles in original sealed containers.

Potential Source: Concrete.

Preventive Measure: 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 concrete washout area as shown on the SW3P site plan.

Potential Source: Paint.

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

Potential Source: Asphalt & Asphaltic Products.

Preventive Measure: All asphalt paving, roofing, and sealers may be brought onsite only as it is being applied. Application will be in accordance to the manufacturer's recommendations and City of San Antonio specifications.

Potential Source: Fertilizer.

Preventive Measure: Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Revegetated areas that are seeded and fertilized will be protected by a hydraulic mulch, hay and tackifier or binder, or erosion control mat. Fertilizer will not be stored onsite.

Potential Source: Sewage from Portable Toilets and / or Collection Tanks on Construction Trailer.

Preventive Measure: Sewage from the units will be properly removed on a regular basis, will be inspected on a regular basis, and will be disposed of by a licensed waste collection service. Note that any spills should be contained within the respective BMP installed and any spill outside the containment area will be cleaned up in accordance with current state / local regulations as well as reported to TCEQ.

# **Attachment C**

## **Sequence of Major Activities**



## Sequence of Major Activities

### Construction Sequencing:

- A. Installation of Temporary BMPs as shown on the “Storm Water Pollution Prevention Plan (SWPPP) / Erosion and Sediment Control Plan, Storm Water Pollution Prevention Plan (SWPPP) Details / Erosion and Sediment Control Details, the Tree Protection Details and the “Water Pollution Abatement Plan sheets.
- B. Site clearing including the removal of select trees / trimming of trees and rough grading of the entire proposed site.
- C. Excavation and preparation of basins.
- D. Demolition of some of the existing areas (sidewalks, curbs, and pavement) and trenching activities for utility and drainage work associated with this project.
- E. Excavation and preparation of subgrade.
- F. Trenching for services on-site / extension of utilities to the site.
  - a. Installation of electric, communication, data, and other dry utility services to the new parking lots.
  - b. Installation of water main for domestic and fire protection of the site.
  - c. Installation of the on-site sewer facility (OSSF).
  - d. Reestablishment of vegetation in areas beyond the parking lot and office building within the construction envelope(s).
- G. Excavation and construction of structural footings and foundations for ramps and buildings respectively.
- H. Installation of drainage infrastructure.
- I. Installation of base material / construction of parking lots and roadway.
- J. Erection and construction of building, including finish out while site work is on-going.
- K. Installation of concrete curbs.
- L. Drill and pour concrete footings for structures such as light standards, cameras, bollards, etc.
- M. Application of prime and tack coats.
- N. Construction of sidewalks.
- O. Installation of asphalt pavement and installation of ADA truncated domes.
- P. Finish out items such as erecting light standards and cameras.
- Q. Finish grading as indicated on plans.
- R. Landscaping / sodding / seeding to reestablish vegetation on all remaining disturbed areas.
- S. Removal of temporary BMPs once area is established or when the particular temporary BMP measure is no longer required (i.e. Construction Exit and Concrete Washout Pit)

# **Attachment D**

## **Temporary Best Management Practices and Measures**

## **Temporary Best Management Practices and Measures**

There are no significant recharge features identified by the Geologic Assessment that will be adversely affected by the construction of this project as it is identified on the geological report. Please reference the Geological Assessment attached. Refer to the "Storm Water Pollution Prevention Plan (SWPPP) / Erosion and Sediment Control Plan, Storm Water Pollution Prevention Plan (SWPPP) Details / Erosion and Sediment Control Details, the Tree Protection Details and the "Water Pollution Abatement Plan (WPAP) sheets for BMPs to protect the general site areas, including tree protection measures, during construction activities and after.

Temporary BMPs, such as sediment control rolls, sediment control / silt fencing, gravel filter bags, inlet protection with filter fabric placed around the on-site and adjacent curb inlets, and high service rock berms will be implemented to control the runoff and prevent sediment transport downstream onto the existing roadways, swales, storm drains, and channels until vegetation is reestablished for the area. Silt fencing will be placed downstream in a manner not to exceed 1 acre of contributing area to also trap sediment before reaching the roadway and channels where feasible. Triangular filter dikes will also be used at existing paved areas, such as roadways and sidewalks where silt fence post cannot be installed.

Any upgradient runoff that will enter the site and downstream conditions will be addressed.

# **Attachment F**

## **Structural Practices**

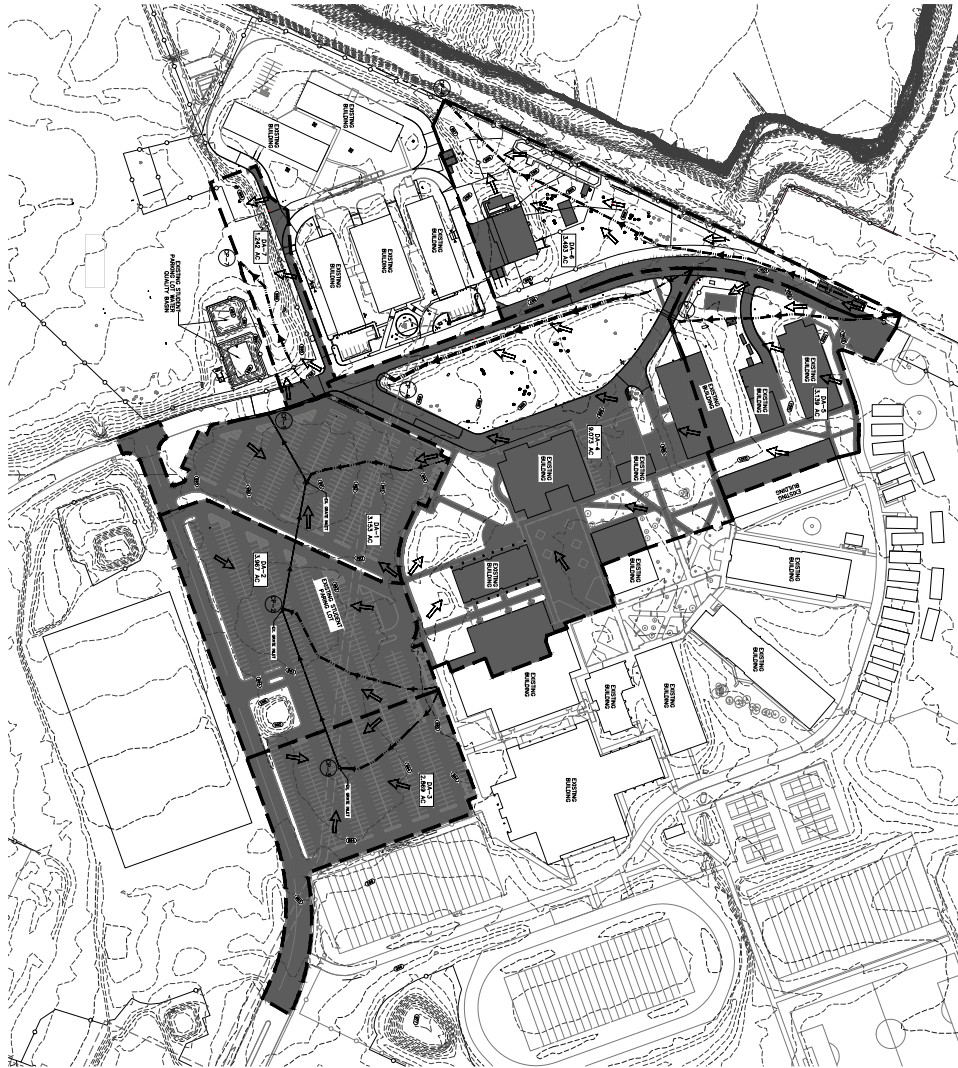
## **Structural Practices**

Refer to Water Pollution Abatement Plan (WPAP), Stormwater Pollution Prevention Plan (SWPPP) / Erosion and Sedimentation Control Plan, Stormwater Pollution Prevention Plan (SWPPP) / Erosion and Sedimentation Control Plan Details.

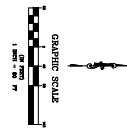
The permanent BMPs will be excavated and used to trap sediment construction as well as those other details noted above.

# **Attachment G**

## Drainage Area Maps



- LEGEND**
- PROPOSED SUB MAIN WATER
  - PROPOSED COLLECTION LINE
  - PROPOSED DRAINAGE FLUM
  - PROPOSED OVERFLOW WEIR
  - PROPOSED OVERFLOW COUPLER
  - EXISTING CONTOUR
  - SHEET FLOW TIME OF CONCENTRATION
  - SHALLOW CONCENTRATION TIME OF CONCENTRATION
  - CHANNEL TIME OF CONCENTRATION
  - PIPE TIME OF CONCENTRATION
  - EXISTING CONTOUR
  - PROPOSED OVERFLOW COUPLER
  - PROPOSED OVERFLOW WEIR
  - PROPOSED DRAINAGE FLUM
  - PROPOSED COLLECTION LINE
  - PROPOSED SUB MAIN WATER



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DRAWN BY: LNC  
APPROVED: PAM

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: PAUL A. MCELROY, P.E. NO. 0150078 ON SEPTEMBER 19, 2003 DATE

**HVD 1.0**

**EXISTING HYDROLOGY PLAN**

DATE	BY	CHKD BY	APP'D BY	TITLE

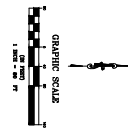
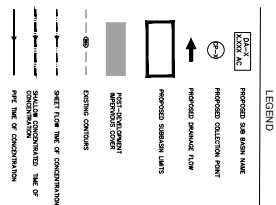
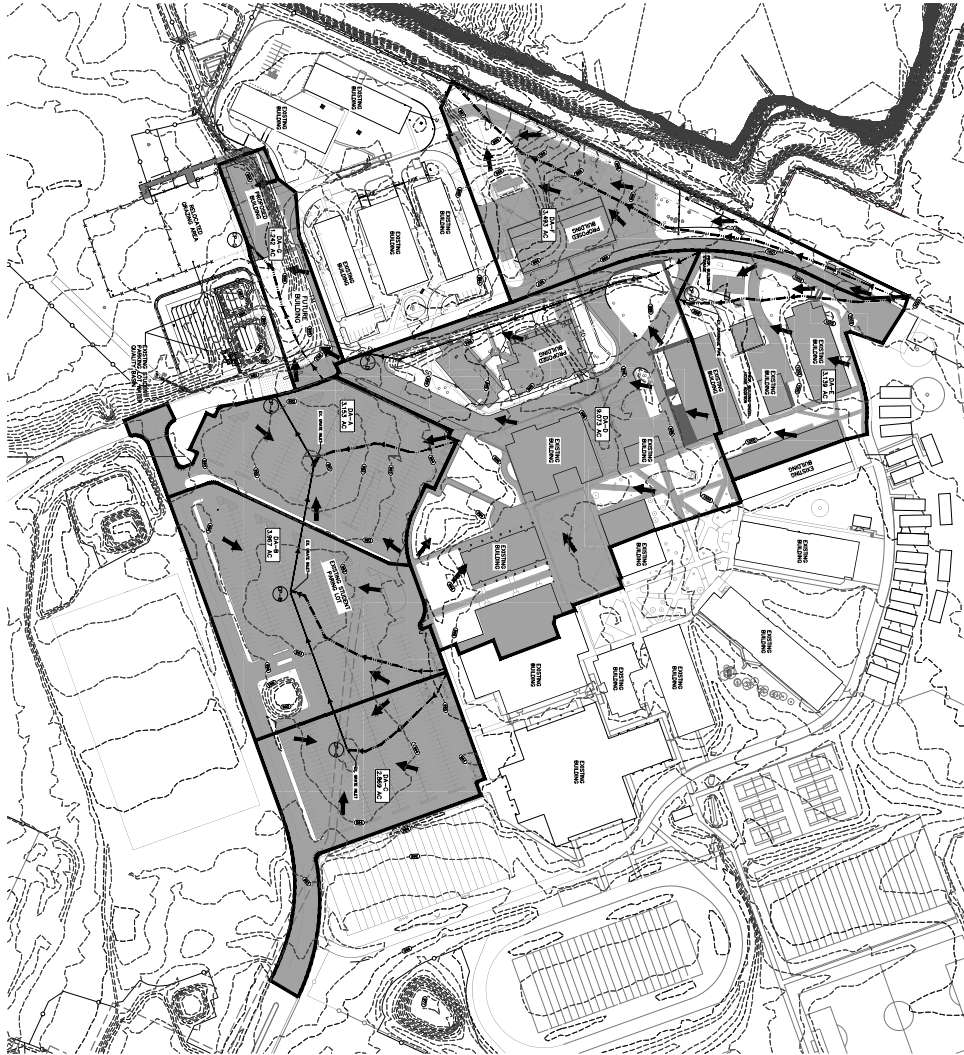
KAARLSEN  
NOONAN  
RITTMANN  
GARCIA

CHUCK BANCHEK AND KEOI  
PROFESSIONAL ENGINEERS  
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 DRAWN BY: LNC  
 APPROVED: PAM  
 JOB NO: 762301481

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: PAUL A. BECKER, P.E. NO. #105075 ON SEPTEMBER 19, 2003 DATE

HYD 2.0

PROPOSED HYDROLOGY PLAN

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 RITTMANN  
 GARCIA  
 CIVIL ENGINEERS AND ARCHITECTS  
 1200 SANDCREEK FRODO KEEZ  
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# **Attachment I**

## **Inspection and Maintenance for Temporary BMPs**

## **Inspection and Maintenance for Temporary BMP's**

There will be several types of Temporary BMPs used for this project: Silt Fencing, Rock Berms, Area Inlet Protection, Gravel Filter Bags, Triangular Dikes, Temporary Construction Entrance/Exit, and a Concrete Washout Pit. Items listed below must be inspected every 7 days and within 24 hours of a rainfall event of 0.5 inches or more. These inspections and if any maintenance is performed on such BMPs, it must be documented within the inspection and maintenance report form and kept on site. The forms can be found at the end of this section.

### **Silt Fencing, Rock Berms, Area Inlet Protection, Gravel Filter Bags, & Triangular Filter Dikes**

Refer to TCEQ "Edwards Aquifer Technical Guidance Manual" RevJul05, pages 1-66 to 1-68 (Silt Fencing), pages 1-72 to 1-74 (Rock Berms), pages 1-89 to 1-92 (Area Inlet Protection), pages 1-98 to 1-100 (Gravel Filter Bags), pages 1-69 to 1-71 (Triangular Filter Dikes), pages 1-63 to 1-65 (Construction Entrance/Exit), pages 1-124 to 1-125 (Concrete Washout) for standards, and also refer to Sheets C01B and C05 through C05D.1 for the Erosion Control Plan and Sheets C05E through C05G for the Erosion Control Details of the construction plans for locations/details/guidance.

Contractor shall maintain log and document following items for silt fencing, rock berms, gravel filter bags, inlet protection, triangular dikes and any other approved temporary BMP:

- 1) Inspection of all fencing/berms/bags/dikes weekly, and after any rainfall event.
- 2) Removal of sediment when buildup reaches 6" on any temporary BMP, or the installation of a second line of fencing parallel to the old fence. Dispose of the accumulated silt of in an approved manner.
- 3) Replacement of any torn fabric or installation of a second line of fencing parallel to the old fence.
- 4) Replacement/repair of any sections crushed, torn, or collapsed temporary BMPs in the course of construction activity. If a section of fence/berm is obstructing vehicular access, document the relocation to a spot where it will provide equal protection, but will not obstruct vehicles.
- 5) The contractor may use Triangular Filter Dikes in areas where fencing is impractical due to existing pavement or concrete flatwork.
- 6) For installations of rock berms in streambeds, additional daily inspections should be made.
- 7) For rock berms, any loose wire sheathing shall be repaired or replaced as needed and the berm reshaped as needed during inspection.
- 8) Any rock berms are to be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
- 9) Any rock berm shall be left in place until all upstream areas are stabilized, and accumulated silt removed.
- 10) Any gravel filter bags torn allowing gravel to come out of the constraints of the bag shall be replaced immediately.

These temporary BMPs as shown on the “Storm Water Pollution Prevention Plan (SWPPP) / Erosion and Sediment Control Plan / Details” (Sheets C01B and C05 through C05G) and “Water Pollution Abatement Plan (WPAP)” (Sheets WPAP 1, WPAP 2, WPAP 3, and WPAP 4) will intercept any storm water borne pollutants originating onsite, including upstream offsite runoff, therefore preventing them from entering Geological Features, roadways, drainage features, and other drainage structures such as the existing WQBs.

### **Temporary Construction Entrance/Exit**

Contractor shall establish and maintain a Temporary Construction Entrance/Exit throughout the construction period to protect the site from pollutants brought onto the site from other sources or leaving the site. Contractor to insure rocks are maintained free of trash and sediment.

### **Concrete Washout Pit**

Contractor shall insure concrete washout pit is maintained at all times during construction and removed appropriately at the end of construction.

The concrete washout pit will be inspected on a weekly basis and after any rainfall event. The sediment build up will be removed when it reaches 6”. Upon removal the area of the washout pit shall be revegetated to prevent erosion of the area.

### **Construction Lay Down Area**

Contractor shall insure silt fencing, rock berms, area inlet protection, gravel filter bags, triangular dikes, temporary construction entrance/exit, and concrete washout pit are maintained as stated above. This construction lay down area shall be used for construction trailers, supplies storage, machinery, temporary parking, etc. needed for construction. The lay down areas will need to be shown on sheets C05 through C05G or other applicable exhibit by the contractor and these areas will be revegetated upon completion of construction. This includes any off-site laydown area within an existing paved area, it shall be cleaned of any debris or sediment prior to removal of any temporary BMP surrounding it.

### **Tree Protection**

All trees that will remain shall be protected in accordance with the details as shown on Sheet C05F. In addition to the drip line of the trees being fenced as shown within the details, other measures to protect the existing trees and to minimize disturbance are specifically noted in the plans.

# **Attachment J**

## **Schedule of Interim and Permanent Soil Stabilization Practices**

## **Schedule of Interim and Permanent Soil Stabilization Practices**

### **Interim Practices**

All temporary BMPs as described in Attachment I. This also includes the construction of the WQBs to act as the temporary basins during construction.

### **Permanent 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 14<sup>th</sup> 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 the site. In areas experiencing droughts where the initiation of stabilization measures by the 14<sup>th</sup> day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Refer to "Water Pollution Abatement Plan (WPAP) for all areas to be sodded within the project limits that are designated as VFS or earthen channels or at the back of curbs. All other areas are to be landscaped or hydromulched at a minimum, which includes all other offsite disturbed areas associated with this project (utility installation) beyond the parking areas, walkways, and other paved areas. Landscaping plans also accompany the construction plans for this project for reestablishment of vegetation.

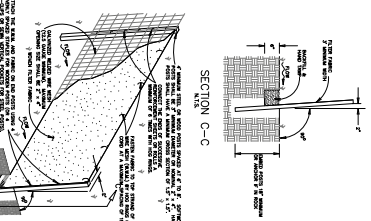
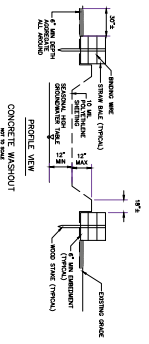
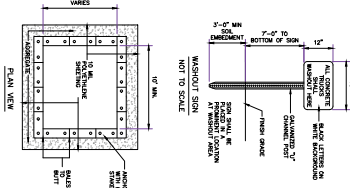
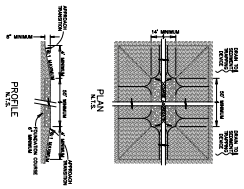
# **Attachment K**

SWPPP

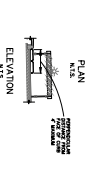








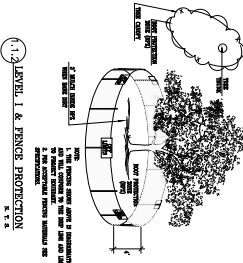
GRAVEL FILTER BASIS



1. GRAVEL FILTER BASIS - TYPE 1
2. GRAVEL FILTER BASIS - TYPE 1
3. GRAVEL FILTER BASIS - TYPE 1
4. GRAVEL FILTER BASIS - TYPE 1
5. GRAVEL FILTER BASIS - TYPE 1
6. GRAVEL FILTER BASIS - TYPE 1

TEMPORARY SEDIMENT CONTROL FENCE

1. THE FENCE SHALL BE CONSTRUCTED OF 2" X 4" POSTS AND 1" X 4" RAILS.
2. THE FENCE SHALL BE 6 FEET HIGH AND 10 FEET LONG.
3. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.
4. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.
5. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.
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8. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.
9. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.
10. THE FENCE SHALL BE SET BACK 10 FEET FROM THE EDGE OF THE DISTURBED AREA.



CONSTRUCTION/PERMIT DOCUMENTS

KAARLSEN  
 NOONAN  
 BITTMANN  
 GARCIA

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 REGISTRATION #1-10573 #151943-03

DESIGNED BY	PAM
DRAWN BY	LMO
CHECKED BY	PAM
APP. NO.	7088016401

THE SEAL, OFFERING OF SERVICE, AND SIGNATURE OF THE REGISTERED PROFESSIONAL ENGINEER ARE REQUIRED FOR ALL PERMITS AND CONTRACTS.

NORTHERN HEMISPHERE SCHOOL DISTRICT

C2.02

# **Permanent Stormwater Section (TCEQ-0600)**

# Permanent Stormwater Section

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

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

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

## Signature

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

Print Name of Customer/Agent: Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA

Practice Leader | Senior Associate

Date: 9/22/2023

Signature of Customer/Agent



Regulated Entity Name: O'connor High School agricultural science and technology

## Permanent Best Management Practices (BMPs)

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

- Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.  
 N/A
- These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

- The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
- A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: N/A
- N/A
3.  Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
- N/A
4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
- The site will be used for low density single-family residential development and has 20% or less impervious cover.
- The site will be used for low density single-family residential development but has more than 20% impervious cover.
- The site will not be used for low density single-family residential development.
5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
- Attachment A - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- The site will not be used for multi-family residential developments, schools, or small business sites.
6.  **Attachment B - BMPs for Upgradient Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
  - No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
  - Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.
7.  **Attachment C - BMPs for On-site Stormwater.**
- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
  - Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.
8.  **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.
- N/A
9.  The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.
- The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.
  - Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.
10.  **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:
- Design calculations (TSS removal calculations)
  - TCEQ construction notes
  - All geologic features
  - All proposed structural BMP(s) plans and specifications
- N/A

11.  **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:
- Prepared and certified by the engineer designing the permanent BMPs and measures
  - Signed by the owner or responsible party
  - Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
  - A discussion of record keeping procedures
- N/A
12.  **Attachment H - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
- N/A
13.  **Attachment I -Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.
- N/A

### ***Responsibility for Maintenance of Permanent BMP(s)***

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

14.  The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
- N/A
15.  A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.
- N/A

# **Attachment B**

BMPs for Upgradient Stormwater

## **BMPs for Upgradient Storm Water**

The area upgradient drains to already existing Water Qualities Basins on-site.

Please refer to drainage areas as shown on the HYD 1.0 and HYD 2.0, Hydrology Sheets.



# **Attachment C**

## **BMPs for Onsite Stormwater**

## **BMPs for Onsite Storm Water**

A variety of temporary BMPs will be utilized to control the transport of sediment from the site during construction and post construction until areas are established. Please refer to enclosed Erosion and Sediment Control Plans / SWPPP and Details for locations of such BMPs.

In areas not covered by sidewalks, pavement, and other impervious cover; vegetated swales, channels, and other pervious areas (such as grassy areas and landscaped areas) will be utilized to prevent the transport of sediment from the project site post construction. The entire site will be revegetated upon completion of construction for those disturbed areas not scheduled for paving or other impervious cover, such as sidewalks and concrete rip-rap on culvert structures and basin inlet structures.

Several permanent structural BMPs are planned for this area as there are not any treatment methods for a majority of the site as it was not included in the latest Master Plan for the O'Connor High School. Those downgradient BMPs would be vegetative filter strips (VFS) for the proposed barn and new partial sand filtration basin for existing student parking lot, existing roadway, and the portion of the now to be constructed parking lot, new proposed buildings and storages.

# **Attachment D**

## **BMPs for Surface Streams**

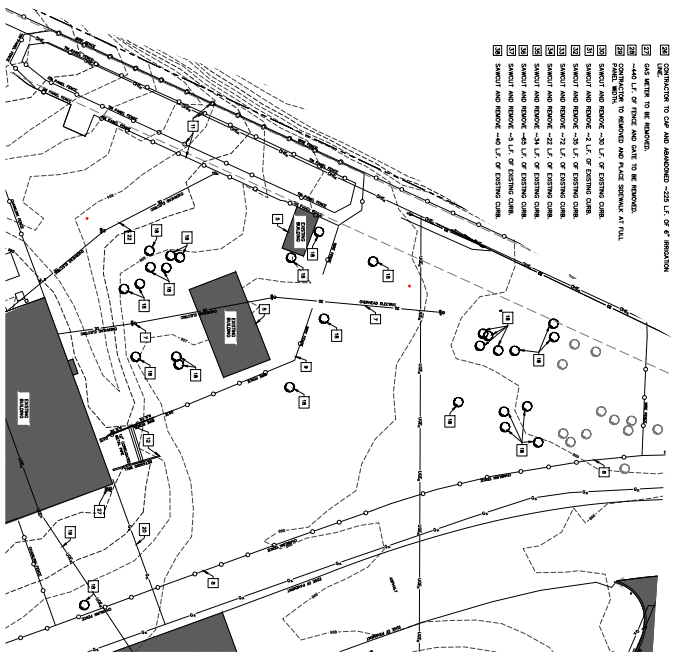
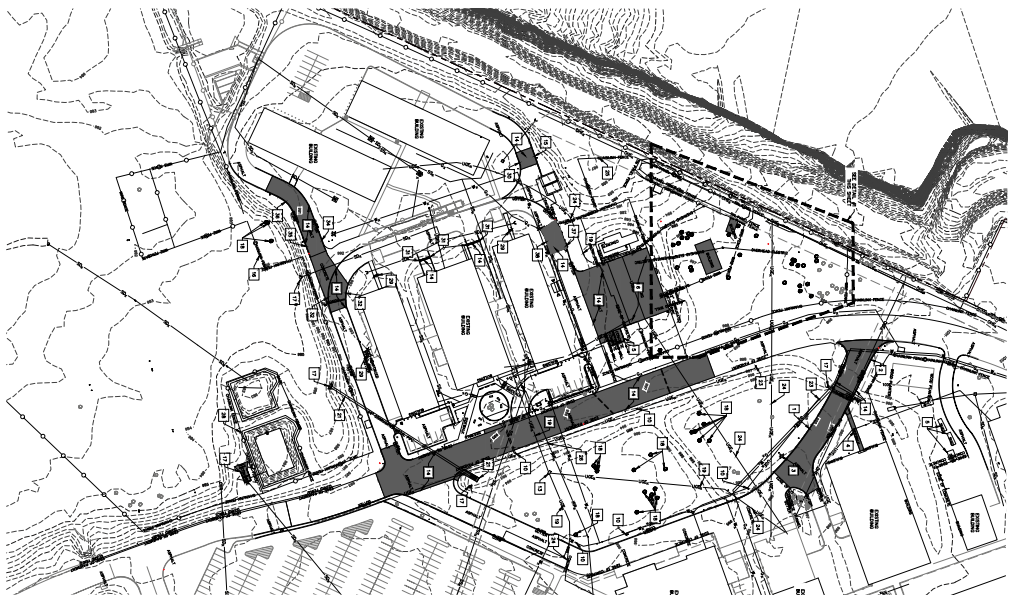
## **BMPs for Surface Streams**

The temporary BMPs and post construction re-vegetation described in Attachment C will be used to protect the downstream areas from potential increased sediment loading during construction and after.

# **Attachment F**

Construction Plans & TCEQ Construction Notes

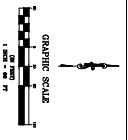




**PLANNOTES**

- 1 SHAWT AND REMOVE -20' L.F. OF EXISTING CURB.
- 2 SHAWT AND REMOVE -24' L.F. OF EXISTING CURB. REFER TO PLAN SHEET 1 FOR UTILITY PLANS FROM PREVIOUS EDITIONS OF THIS PLAN DRAWING.
- 3 EXISTING SIDEWALK TO BE REMOVED.
- 4 EXISTING SIDEWALK TO BE REMOVED. AFTER MAINT. 1' OF NEW SIDEWALK.
- 5 EXISTING SIDEWALK TO BE REMOVED. AFTER MAINT. 1' OF NEW SIDEWALK.
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- 100 EXISTING SIDEWALK TO BE REMOVED. AFTER MAINT. 1' OF NEW SIDEWALK.

- GENERAL NOTES**
1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AFFECTED AGENCIES. IT IS REMOVED FROM THE CONTRACTOR'S OBLIGATION TO OBTAIN ANY PERMITS OR APPROVALS FROM ANY AGENCY.
  2. BEFORE ANY WORK BEGINS, CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANTONIO OF ANY WORK TO BE PERFORMED IN ANY PUBLIC RIGHT-OF-WAY.
  3. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES AND STRUCTURES UNLESS OTHERWISE INDICATED ON THE PLANS.
  4. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES AND STRUCTURES UNLESS OTHERWISE INDICATED ON THE PLANS.



CONSTRUCTION/PERMIT DOCUMENTS

C100

DATE: 11/11/2010

PROJECT: AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS

CLIENT: KCI TECHNOLOGIES, INC.

DESIGNER: KAARLSEN, NOONAN, RITTMANN, GARCIA

CONTRACT NO.: 1000000000

PROJECT NO.: 1000000000

DATE: 11/11/2010

PROJECT: AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS

CLIENT: KCI TECHNOLOGIES, INC.

DESIGNER: KAARLSEN, NOONAN, RITTMANN, GARCIA

CONTRACT NO.: 1000000000

PROJECT NO.: 1000000000

DATE: 11/11/2010

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**

1100 W. 10TH STREET, SUITE 300  
SAN ANTONIO, TEXAS 78205-0357  
PHONE: (210) 545-6600  
FAX: (210) 545-6665  
REGISTRATION #1-10573 #101943-03

**ENGINEER OF RECORD**

**DESIGNER**

**DATE**

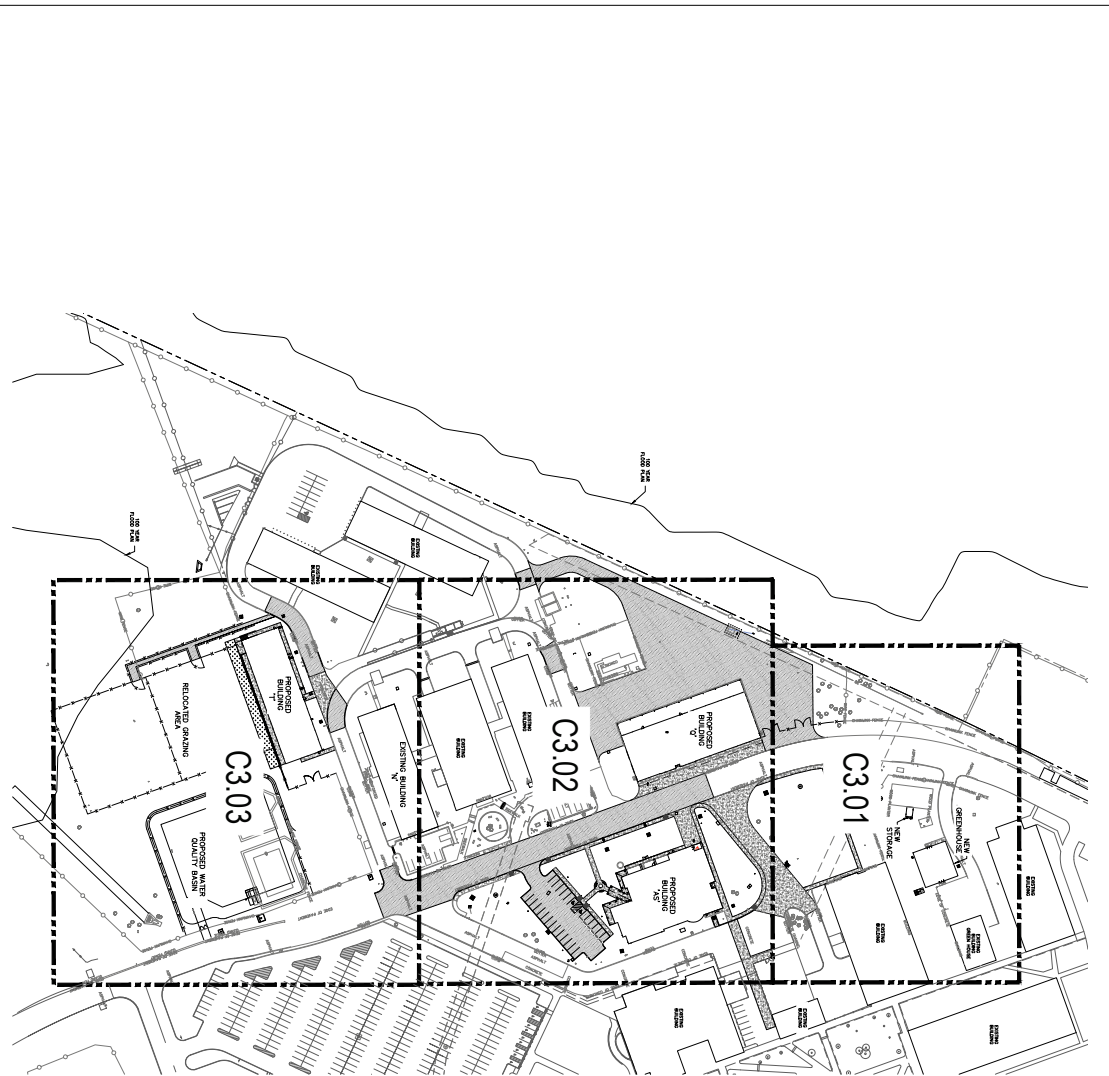
**PROJECT**

**CONTRACT NO.**

**PROJECT NO.**

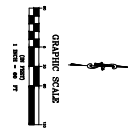
**DATE**





SITE DIMENSION CHECK NOTES

- 1) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 2) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 3) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 4) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 5) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 6) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
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- 99) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE
- 100) 20' SETBACK FROM WEST SIDE OF EXISTING DRIVE



CONSTRUCTION/PERMIT DOCUMENTS

C3.00	OWNER NORTH HEBBESBACH SCHOOL DISTRICT	DATE 12/15/2011	PROJECT AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS
	ARCHITECT KCI TECHNOLOGIES, INC.		
	ENGINEER KCI TECHNOLOGIES, INC.		
	PERMIT NUMBER 11-000000000		

**KCI TECHNOLOGIES, INC.**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA

1100 W. 10th Street, Suite 300  
 San Antonio, Texas 78204-0337  
 Phone: (210) 641-6600  
 Fax: (210) 641-6443  
 Registration #1-10573 / #121943-03

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

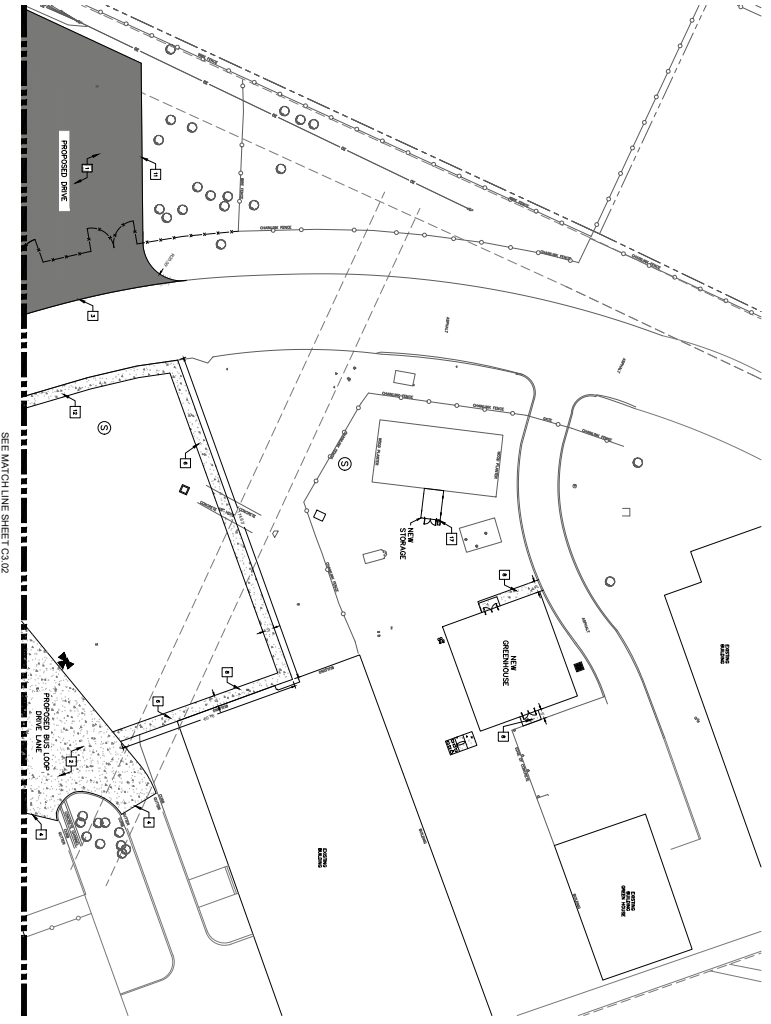
12221 LESLIE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**  
 1100 W. 10th Street, Suite 300  
 San Antonio, Texas 78204-0337  
 Phone: (210) 641-6600  
 Fax: (210) 641-6443  
 Registration #1-10573 / #121943-03

**THE SEAL, OFFERING OF THIS PROJECT TO THE PUBLIC FOR REVIEW, IS THE PROPERTY OF THE ARCHITECT AND ENGINEER. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON.**

**NORTH HEBBESBACH SCHOOL DISTRICT**





SHEET MATCHLINE SHEET C3.02

**LEGEND:**

- EXISTING PAVEMENT
- CONCRETE PAVEMENT
- ASPHALT DRIVE PAVEMENT
- ASPHALT DRIVE PAVEMENT
- ASPHALT DRIVE PAVEMENT
- ASPHALT DRIVE PAVEMENT

**GRAPHIC SCALE:**  
1" = 20' 0"

CONSTRUCTION/PERMIT DOCUMENTS

C301

DATE	DESCRIPTION

**INTEGRITY ARCHITECTS**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA  
 12001 SANDCORN FRO DOGS  
 FORT WORTH, TEXAS 76133  
 TEL: 817-336-1111  
 FAX: 817-336-1112

**KCI TECHNOLOGIES, INC.**  
 11500 W. 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78230-0337  
 PHONE: (214) 541-0300  
 FAX: (214) 541-6443  
 REGISTRATION #F-10573 / #F101943-03

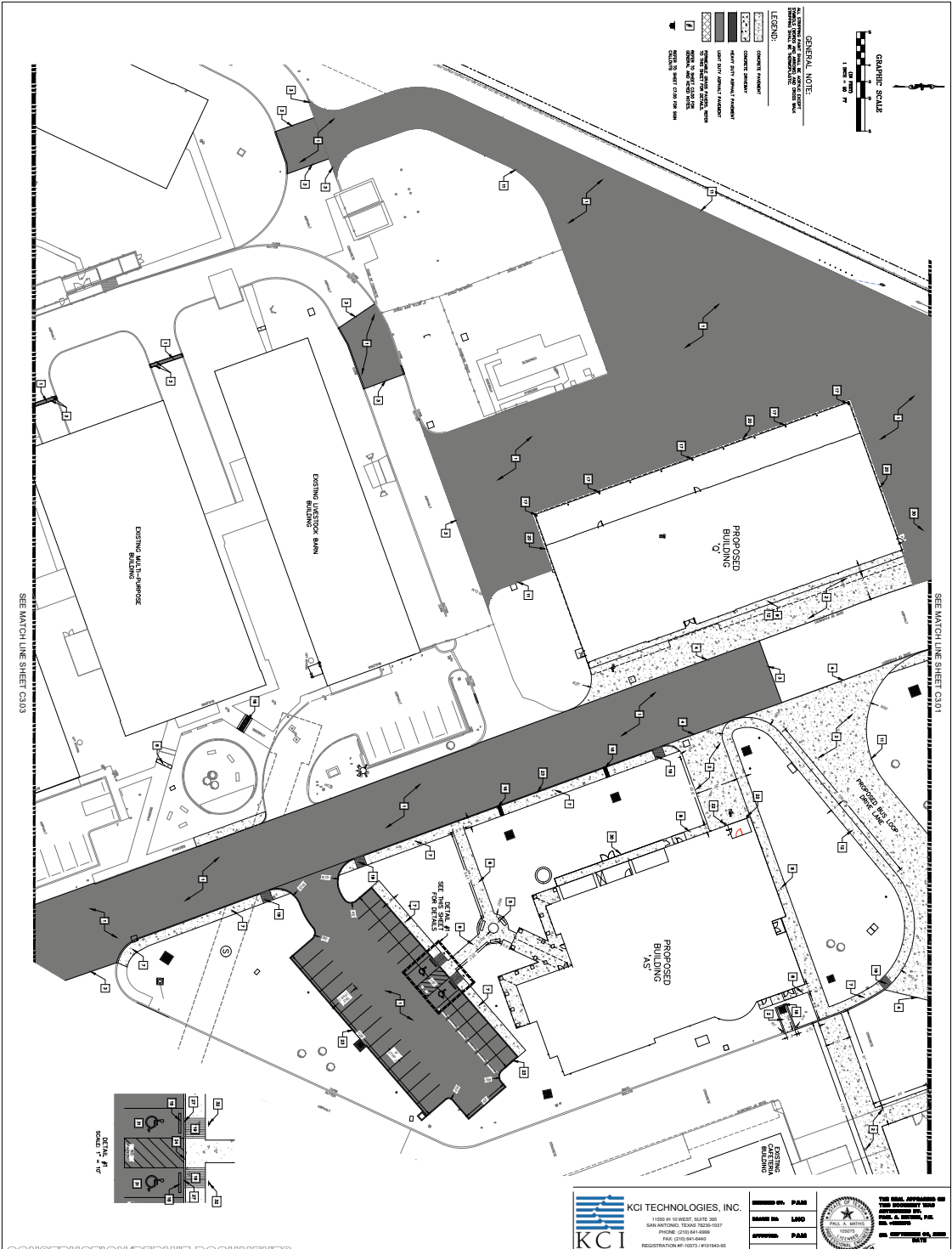
DESIGNED BY	PJAB
DRAWN BY	LAW
CHECKED BY	PJAB
APP. NO.	7088014801



**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023





CONSTRUCTION/PERMIT DOCUMENTS

C3 02

DATE: 11/11/2011	PROJECT: AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS
DRAWN BY: [Redacted]	CHECKED BY: [Redacted]
DESIGNED BY: [Redacted]	APPROVED BY: [Redacted]
SCALE: 1/8" = 1'-0"	

**INTEGRITY ARCH**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA  
 10000 SANDERSON FRODO KEEB  
 HOUSTON, TEXAS 77063  
 281-461-1111  
 281-461-1112

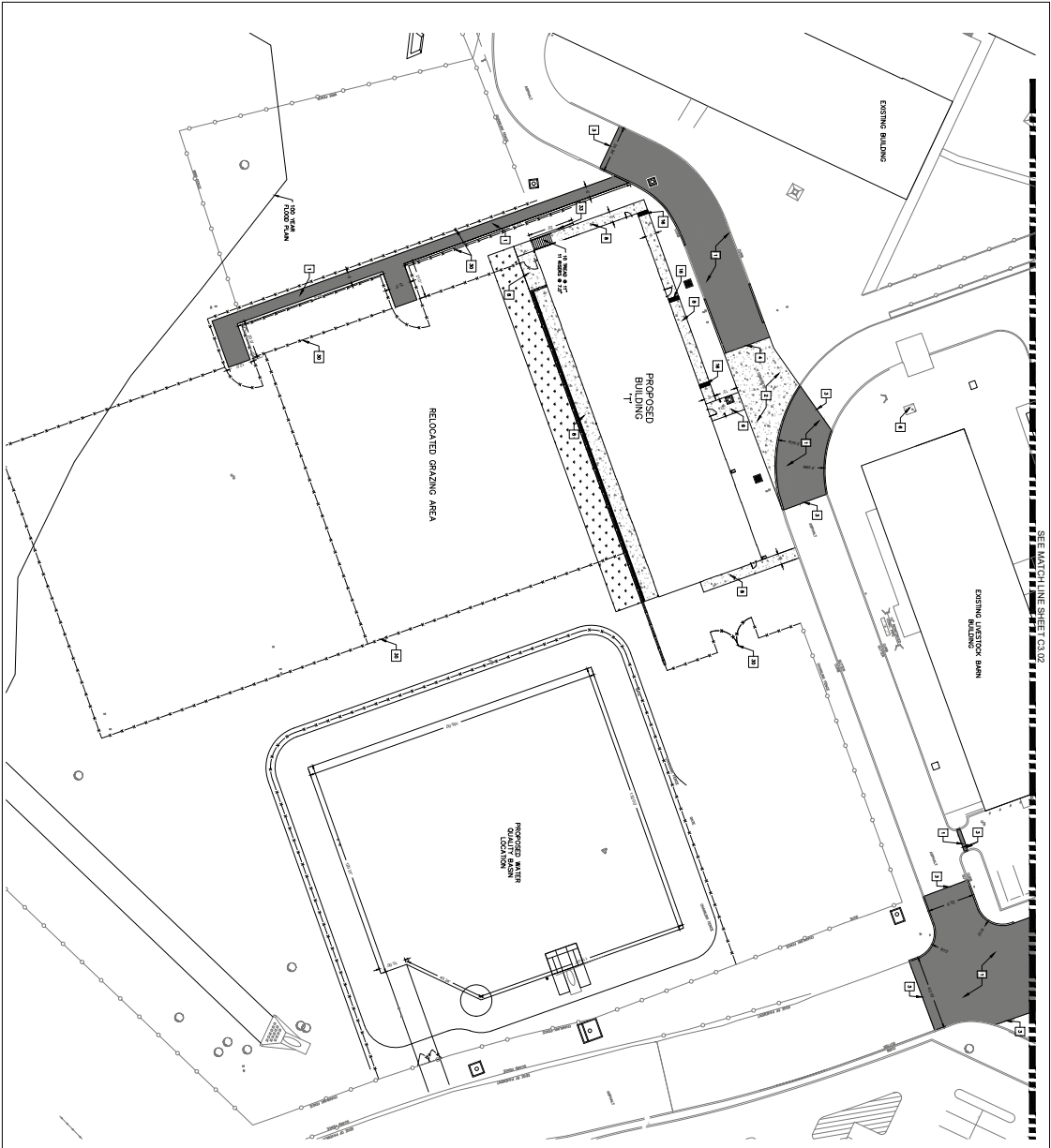
**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**  
 1100 W 10 WEST SUITE 300  
 SAN ANTONIO, TEXAS 78203-0337  
 PHONE: (210) 541-0000  
 FAX: (210) 541-6443  
 REGISTRATION #1-10573 #101943-03

OWNER: PAM
DESIGN: LNO
APPROVE: PAM
APP NO: 708801401





SHEET MATCHLINE SHEET C3.02

**GENERAL NOTE:**  
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.  
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.  
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

**LEGEND:**

- CONCRETE FLOOR
- LIGHT GYPSUM BOARD FLOOR
- EXISTING GRAVEL DRIVEWAY
- 100' BUFFER AREA
- EXISTING GRAVEL DRIVEWAY
- EXISTING GRAVEL DRIVEWAY

**GRAPHIC SCALE:**  
 1" = 20' 0" PER FOOT

**KCI TECHNOLOGIES, INC.**  
 11500 W. 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78230-0337  
 PHONE: (210) 541-6666  
 FAX: (210) 541-6665  
 REGISTRATION #1-10573 / #101943-03

**OWNER:** PAM  
**DESIGNER:** LNO  
**APPROVER:** PAM  
**DATE:** 08/08/2011

**THE SEAL, APPROVED BY THE BOARD OF ARCHITECTS, REGISTERED PROFESSIONAL ARCHITECT, STATE OF TEXAS, NO. 101943-03, EXPIRES 08/31/2015.**

**CONSTRUCTION/PERMIT DOCUMENTS**

**C3.03**

**INTEGRITY ARCHITECTS, P.C.**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA

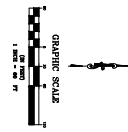
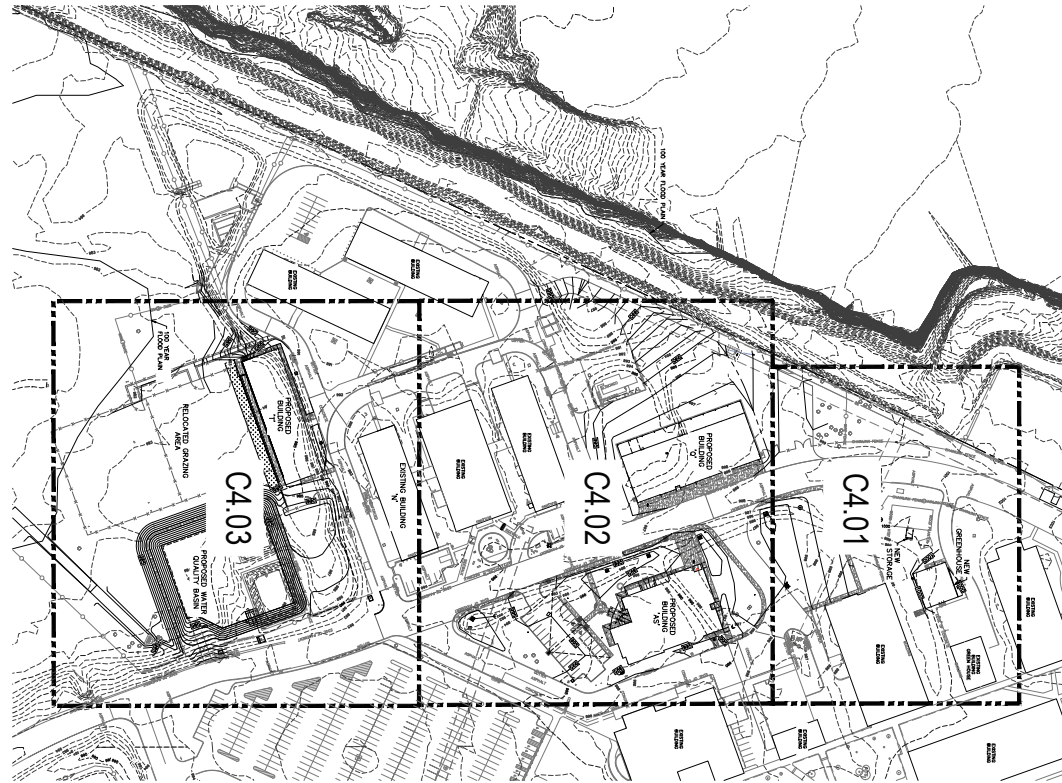
12221 LESLIE ROAD, HELOTES, TX 78023

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**NORTHERN HEBBESBRIGHT SCHOOL DISTRICT**





CONSTRUCTION/PERMIT DOCUMENTS

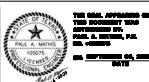
C4.00

DATE	DESCRIPTION

**ARCH**  
 KAARLSEN  
 NOGNAN  
 RITTMANN  
 GARCIA  
 ARCHITECTS  
 12221 LESLIE ROAD, HELOTES, TX 78023  
 TEL: 512-941-4444  
 FAX: 512-941-4444

**KCI TECHNOLOGIES, INC.**  
 11500 W. 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78230-0337  
 PHONE: (210) 541-6666  
 FAX: (210) 541-6665  
 REGISTRATION #1-10573 / #101943-03

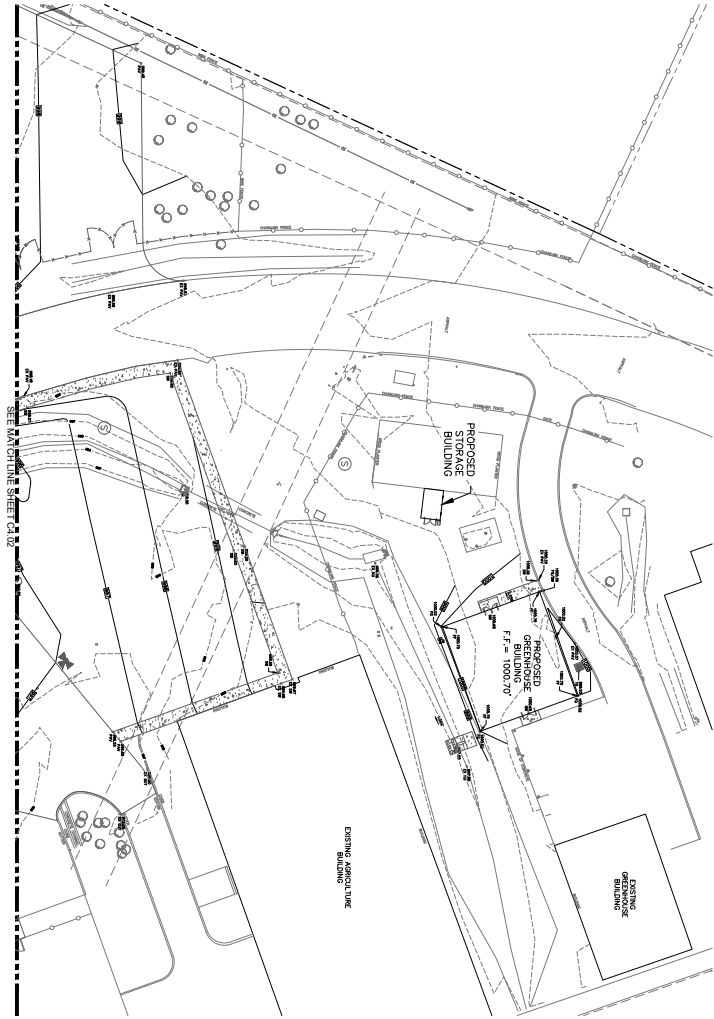
DESIGNED BY	PARR
DRAWN BY	LARG
CHECKED BY	PARR
DATE	08/11/2011



**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

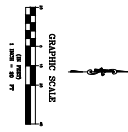
12221 LESLIE ROAD, HELOTES, TX 78023





**LEGEND**

(Symbol)	EXISTING BUILDING
(Symbol)	PROPOSED BUILDING
(Symbol)	PROPOSED STORAGE BUILDING
(Symbol)	EXISTING DRIVEWAY
(Symbol)	PROPOSED DRIVEWAY
(Symbol)	EXISTING SIDEWALK
(Symbol)	PROPOSED SIDEWALK
(Symbol)	EXISTING PAVEMENT
(Symbol)	PROPOSED PAVEMENT



CONSTRUCTION/PERMIT DOCUMENTS

C4.01

DATE	DESCRIPTION

**INTEGRATED ARCHITECTURE**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA  
 2000 BANCROFT FRO KCEI  
 HOUSTON, TEXAS 77057  
 P: 281.544.1111  
 F: 281.544.1111

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**  
 11500 N. 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78230-0337  
 PHONE: (210) 541-6669  
 FAX: (210) 541-6663  
 REGISTRATION #F-10573 / #F101943-03

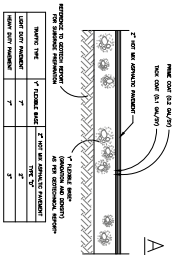
DESIGNED BY	P.A.M.
DRAWN BY	L.M.D.
CHECKED BY	P.A.M.
DATE	08/11/2011





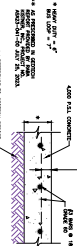






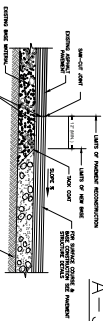
A-1

ASPHALTIC PAVEMENT SECTION



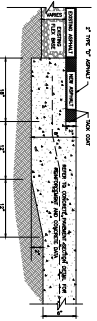
A-2

CONCRETE PAVEMENT SECTION



A-3

PAVEMENT JUNCTION DETAILS



A-4

CONCRETE/ASPHALT PAVEMENT JUNCTION DETAIL

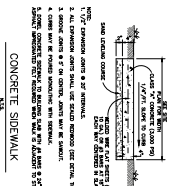


A-5

1. THE 4" THICK CONCRETE SHALL BE 4000 PSI STRENGTH AND SHALL BE REINFORCED TO MEET DESIGN REQUIREMENTS.
2. THE 4" THICK ASPHALT SHALL BE 4000 PSI STRENGTH AND SHALL BE REINFORCED TO MEET DESIGN REQUIREMENTS.
3. THE 4" THICK SUBGRADE SHALL BE 4000 PSI STRENGTH AND SHALL BE REINFORCED TO MEET DESIGN REQUIREMENTS.
4. THE 4" THICK CONCRETE SHALL BE 4000 PSI STRENGTH AND SHALL BE REINFORCED TO MEET DESIGN REQUIREMENTS.
5. THE 4" THICK ASPHALT SHALL BE 4000 PSI STRENGTH AND SHALL BE REINFORCED TO MEET DESIGN REQUIREMENTS.

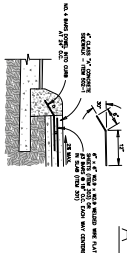
CONCRETE FLATWORK

N.T.S.



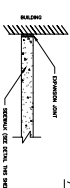
A-6

CONCRETE SIDEWALK



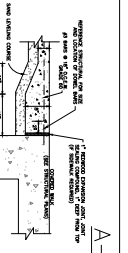
A-7

CONCRETE SIDEWALK ADJOINING CURB SECTION



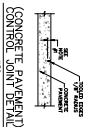
A-8

SIDEWALK ADJACENT TO BUILDING



A-9

SIDEWALK ADJACENT TO COVERED WALK



A-10

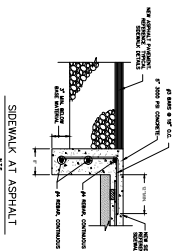
CONCRETE PAVEMENT CONTROL JOINT DETAIL



A-11

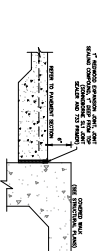
EDGE OF PAVEMENT (NO CURB)

N.T.S.



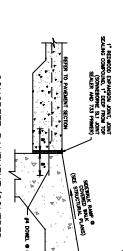
A-12

SIDEWALK AT ASPHALT



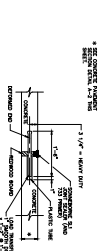
A-13

CONCRETE PAVEMENT/COVERED WALK DETAIL (6" CURB)



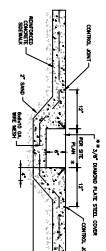
A-14

CONCRETE PAVEMENT/COVERED WALK DETAIL (FLUSH CURB)



A-15

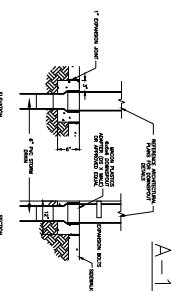
PAVEMENT EXPANSION JOINT SMOOTH DOWEL



A-16

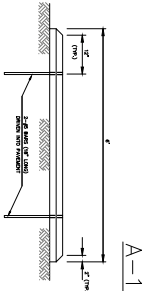
SIDEWALK DRAIN AND COVER - PRIVATE WORK

N.T.S.



A-17

DOWNSPOUT BOOT



A-18

CONCRETE WHEEL STOP

KCI TECHNOLOGIES, INC.  
1500 N. HOUSTON SUITE 300  
SAN ANTONIO, TEXAS 78204-6507  
PHONE: (210) 491-6669  
FAX: (210) 541-6665  
REGISTRATION #1-0573 #103493-03

DESIGNED BY: PAM  
DRAWN BY: LNC  
APPROVED: PAM  
JOB NO: 762301481



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: P. M. ANDERSON, P.E. NO. 15075  
ON SEPTEMBER 06, 2003 DATE



AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES

12221 LESLIE ROAD, HELOTES, TX 78023

CONSTRUCTION/PERMIT DOCUMENTS

PROJECT NO.	15073
DATE	09/06/03
SCALE	AS SHOWN
DRAWN BY	LNC
CHECKED BY	PAM
APPROVED BY	PAM
DATE	09/06/03
PROJECT NO.	15073
DATE	09/06/03
SCALE	AS SHOWN
DRAWN BY	LNC
CHECKED BY	PAM
APPROVED BY	PAM
DATE	09/06/03

C4.04



**SECTION 8** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.1** | **2 RAIL PANELS - 12 PANEL LENGTH**

**SECTION 8.1.1** | **POSTS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	POSTS - 2x4x6x8 - GALV. STEEL	EA	12	12.00	144.00
2	POSTS - 2x4x6x8 - GALV. STEEL	EA	12	12.00	144.00
3	POSTS - 2x4x6x8 - GALV. STEEL	EA	12	12.00	144.00

**SECTION 8.1.2** | **RAIL PANELS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
4	RAIL PANELS - 12 PANEL LENGTH	EA	1	120.00	120.00

**SECTION 8.1.3** | **CONNECTORS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
5	CONNECTORS - GALV. STEEL	EA	12	1.00	12.00

**SECTION 8.2** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.2.1** | **RAILS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	RAILS - 1 1/2" DIA. GALV. STEEL	EA	12	12.00	144.00
2	RAILS - 1 1/2" DIA. GALV. STEEL	EA	12	12.00	144.00

**SECTION 8.2.2** | **CONNECTORS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
3	CONNECTORS - GALV. STEEL	EA	12	1.00	12.00

**SECTION 8.3** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.3.1** | **ALUMINUM SQUARE POSTS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	POSTS - 4x4x6x8 - ALUMINUM	EA	12	12.00	144.00
2	POSTS - 4x4x6x8 - ALUMINUM	EA	12	12.00	144.00

**SECTION 8.4** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.4.1** | **STEEL PAVED SQUARE POSTS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	POSTS - 4x4x6x8 - GALV. STEEL	EA	12	12.00	144.00
2	POSTS - 4x4x6x8 - GALV. STEEL	EA	12	12.00	144.00

**SECTION 8.4.2** | **CONNECTORS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
3	CONNECTORS - GALV. STEEL	EA	12	1.00	12.00

**SECTION 8.5** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.5.1** | **SINGLE ROWS - W/OUT RAIL PICES - GATE SPECIFICATIONS**

**SECTION 8.5.2** | **CONNECTORS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	CONNECTORS - GALV. STEEL	EA	12	1.00	12.00

**SECTION 8.6** | **ORNA-MENTAL** | **ALUMINUM** | **FENCE**

**SECTION 8.6.1** | **DOUBLE ROWS - W/OUT RAIL PICES - GATE SPECIFICATIONS**

**SECTION 8.6.2** | **CONNECTORS**

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
1	CONNECTORS - GALV. STEEL	EA	12	1.00	12.00

8' ORNAMENTAL FENCE DETAILS

**ARCH**

KARLSEN  
NOONAN  
RITTMANN  
GARCIA

3000 SANDERS FRO KCI  
10000 GREENBERRY TRAIL  
DALLAS, TX 75243

PROJECT NO. 202001001  
DATE: 09/06/2023

SCALE: AS SHOWN

DATE: 09/06/2023

PROJECT: 3

DATE: 09/06/2023

SCALE: AS SHOWN

AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES

**KCI TECHNOLOGIES, INC.**

1100 W 10 WEST SUITE 300  
SAN ANTONIO, TEXAS 78202-0107  
PHONE: (210) 944-6669  
FAX: (210) 944-6663  
REGISTRATION #F-10573 / F103493-03

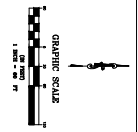
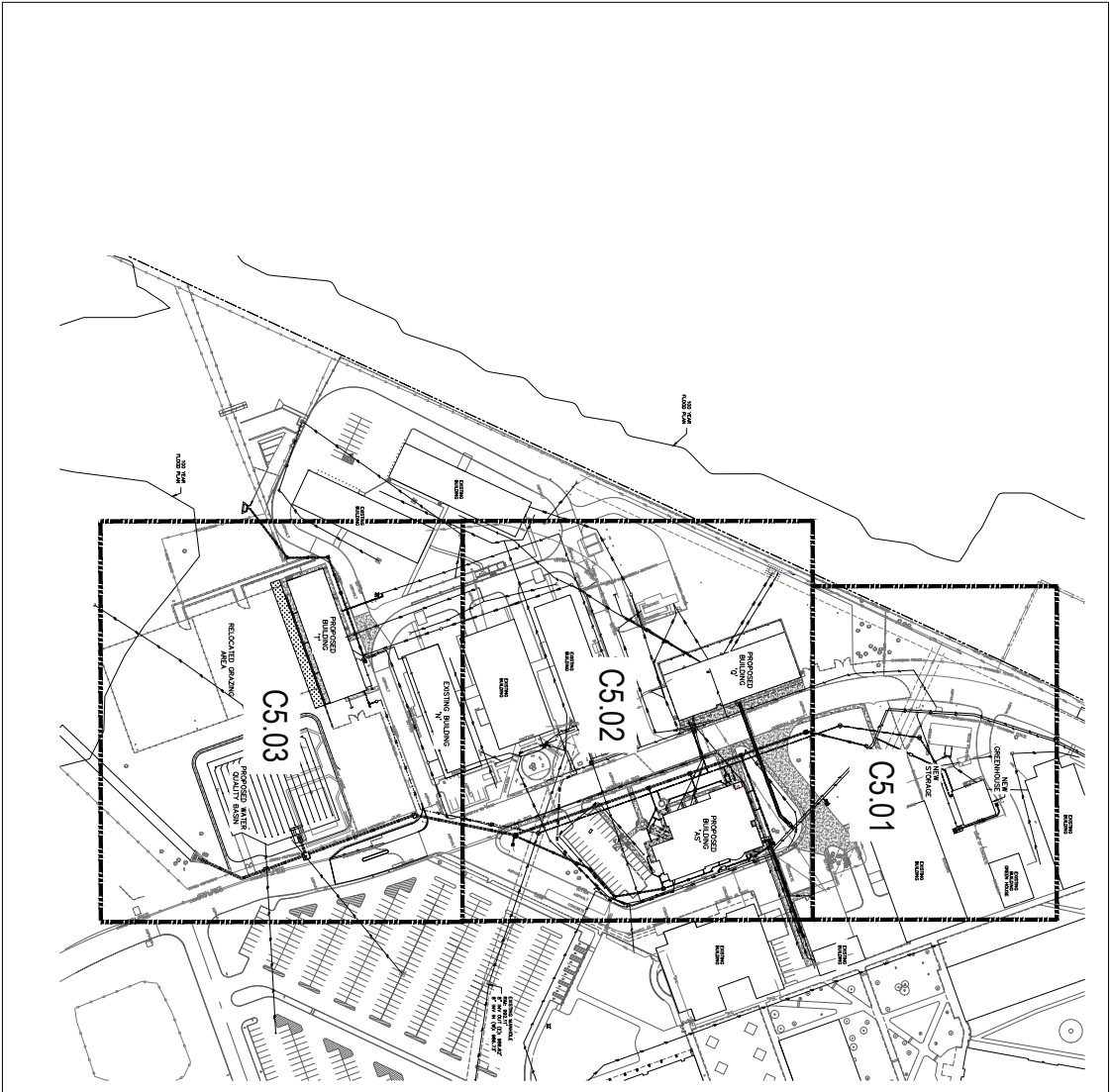
DESIGNED BY: PAM  
DRAWN BY: LNC  
APPROVED: PAM  
JOB NO: 762301481



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: PAM M. BEHR, P.E. NO. 076075 ON SEPTEMBER 06, 2023 DATE







CONSTRUCTION/PERMIT DOCUMENTS

C5.01	CONSULTANT FIRM	INTEGRATED ARCHITECTURE & ENGINEERING, INC.
	CONSULTANT	INTEGRATED ARCHITECTURE & ENGINEERING, INC.
	PROJECT NO.	15000000000000000000
	DATE	12/22/2011
	BY	KAARLSEN, NOONAN, RITTMANN, GARCIA
	FOR	DR. DAN BANCROFT AND KCI2
		PROJECT: TEXAS TECH
		12221 LEBLUE ROAD, HELOTES, TX 78023

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LEBLUE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**  
 11500 W. 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78230-0337  
 PHONE: (210) 541-6660  
 FAX: (210) 541-6665  
 REGISTRATION #F-10573 / #F101943-03

DESIGNED BY	PARR
DRAWN BY	LANG
CHECKED BY	PARR
APP. NO.	708801481

THE SEAL, OFFICER OF THE BOARD OF EXAMINERS, AND THE BOARD OF EXAMINERS, OF THE STATE OF TEXAS, DO HEREBY CERTIFY THAT DAN BANCROFT IS A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.

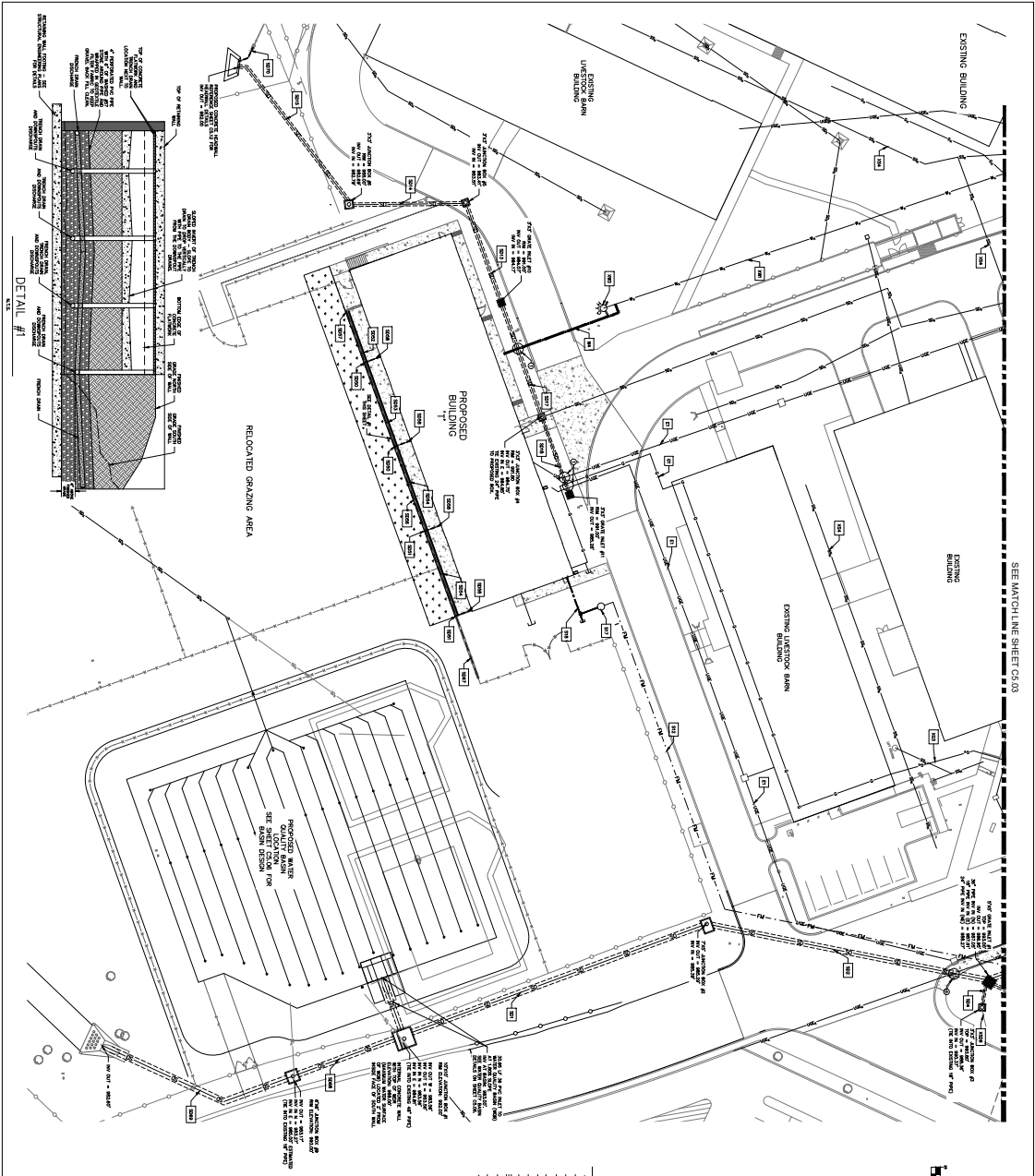












**LEGEND**

- EXISTING WATER MAIN LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING GAS LINE
- PROPOSED WATER MAIN LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED STORM SEWER LINE
- PROPOSED GAS LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- EXISTING WATER MAIN EASEMENT
- EXISTING SANITARY SEWER EASEMENT
- EXISTING STORM SEWER EASEMENT
- EXISTING GAS EASEMENT
- EXISTING UNDERGROUND ELECTRIC EASEMENT
- EXISTING EASEMENT
- PROPOSED WATER MAIN EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- PROPOSED STORM SEWER EASEMENT
- PROPOSED GAS EASEMENT
- PROPOSED UNDERGROUND ELECTRIC EASEMENT
- PROPOSED EASEMENT

**PLAN NOTES**

- REFER TO SHEET C5.03 FOR CONSTRUCTION.
- REFER TO SHEET C5.04 FOR CONSTRUCTION.

CONSTRUCTION/PERMIT DOCUMENTS

C5 04

UNIVERSITY OF TEXAS AT ARLINGTON

ARCHITECTS

KAARLSEN  
NOONAN  
RITTMANN  
GARCIA

3000 SANDCORN FLD K02  
FORT WORTH TEXAS 76102

REGISTERED ARCHITECTS

**KCI TECHNOLOGIES, INC.**

1100 W 10 WEST SUITE 300  
SAN ANTONIO, TEXAS 78201-0107

PHONE: (214) 541-6600  
FAX: (214) 541-6665  
REGISTRATION #F-10573 #F101943-03

**DESIGNED BY: PARR**

**DRAWN BY: LANG**

**CHECKED BY: PARR**

**DATE: 04/04/01**

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**THE SEAL APPROVED BY THE BOARD OF ARCHITECTS AND ENGINEERS OF THE STATE OF TEXAS**

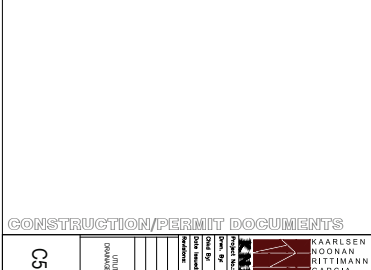
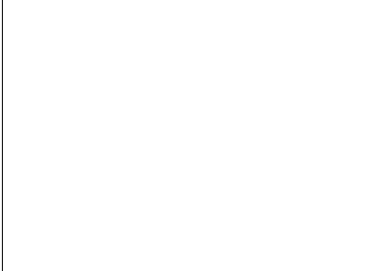
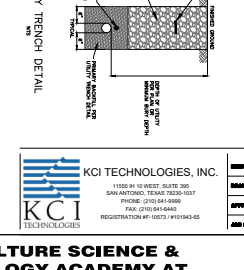
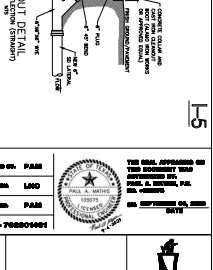
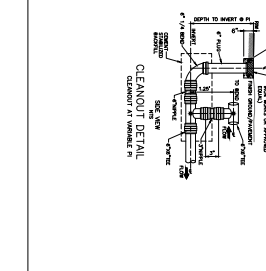
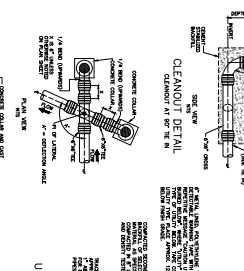
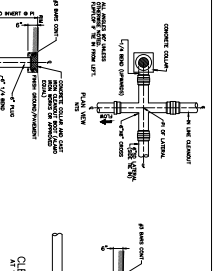
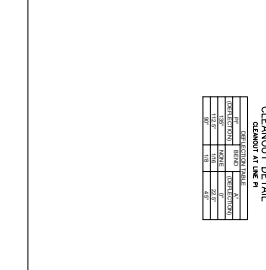
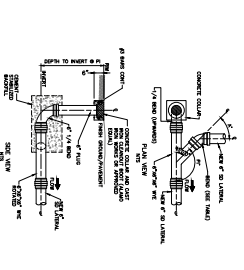
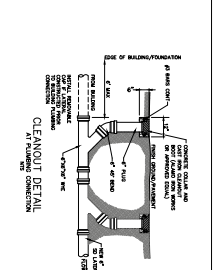
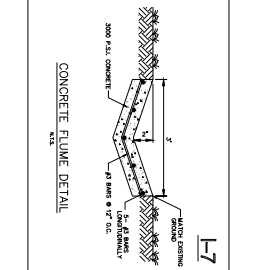
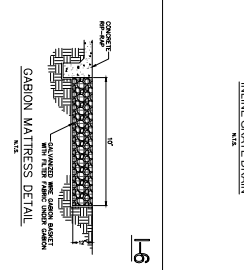
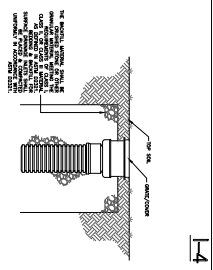
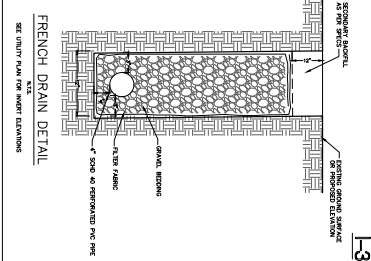
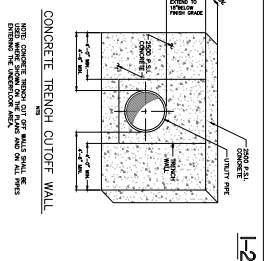
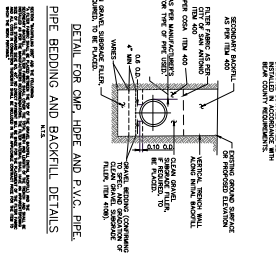
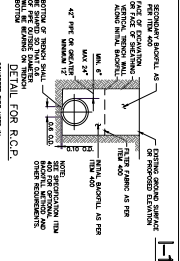
REGISTERED PROFESSIONAL ARCHITECT

REGISTERED PROFESSIONAL ENGINEER

**NORTHERN HURST HIGH SCHOOL DISTRICT**







**KCI TECHNOLOGIES, INC.**  
 1505 N. 10 WEST SUITE 300  
 SAN ANTONIO, TEXAS 78201-3557  
 PHONE: (214) 541-6666  
 FAX: (214) 541-6663  
 REGISTRATION #10688-04801

**CONSTRUCTION/PERMIT DOCUMENTS**

**C5 07**

DATE: 01/17/2010  
 DRAWN BY: JMM  
 CHECKED BY: JMM

**INTEGRITY ARCHITECTS**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA

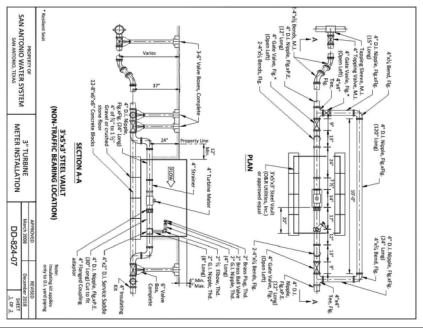
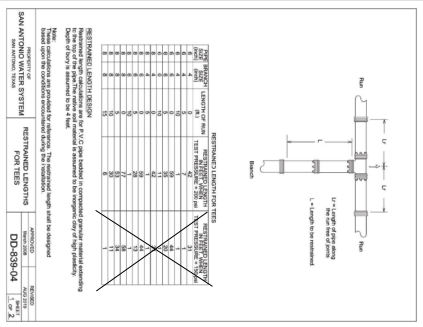
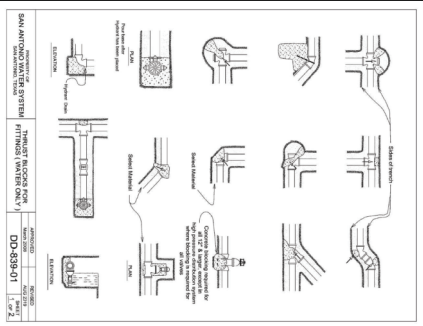
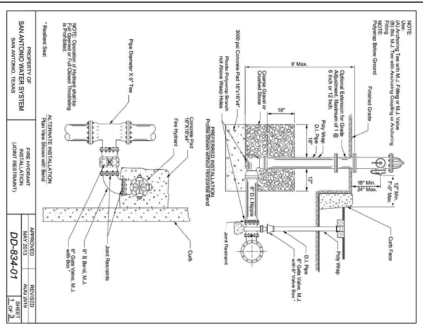
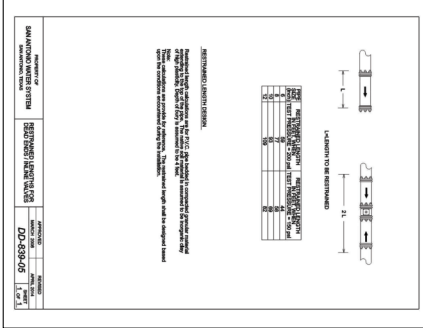
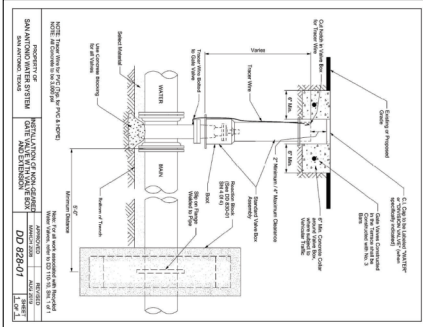
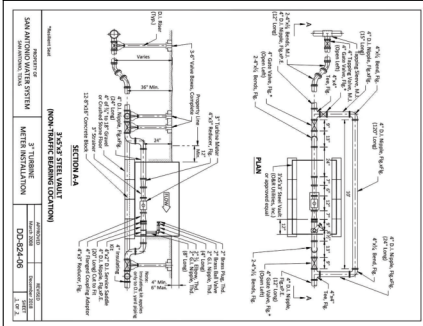
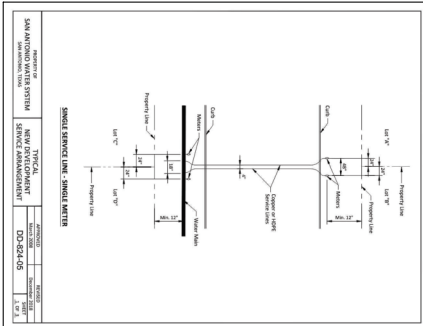
15221 LESLIE ROAD, HELOTES, TX 78023

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

15221 LESLIE ROAD, HELOTES, TX 78023







**KCI TECHNOLOGIES, INC.**  
 1500 W 10 WEST SUITE 300  
 SAN ANTONIO, TEXAS 78201-0357  
 PHONE: (214) 541-6600  
 FAX: (214) 541-6443  
 REGISTRATION #F-10573 #F105493-03

**DESIGNED BY: PAM**  
**DRAWN BY: LMO**  
**CHECKED BY: PAM**  
**APP. NO.: 7088014601**

SMALL SERVICE LINE, DOUBLE METERS  
 RELEASE SYSTEM  
 SERVICE MANAGEMENT  
 DD-534-05  
 1 OF 1

SMALL SERVICE LINE, DOUBLE METERS  
 RELEASE SYSTEM  
 SERVICE MANAGEMENT  
 DD-534-06  
 1 OF 1

SMALL SERVICE LINE, DOUBLE METERS  
 RELEASE SYSTEM  
 SERVICE MANAGEMENT  
 DD-534-07  
 1 OF 1

SMALL SERVICE LINE, DOUBLE METERS  
 RELEASE SYSTEM  
 SERVICE MANAGEMENT  
 DD-534-08  
 1 OF 1

**KCI TECHNOLOGIES, INC.**  
 1500 W 10 WEST SUITE 300  
 SAN ANTONIO, TEXAS 78201-0357  
 PHONE: (214) 541-6600  
 FAX: (214) 541-6443  
 REGISTRATION #F-10573 #F105493-03

**DESIGNED BY: PAM**  
**DRAWN BY: LMO**  
**CHECKED BY: PAM**  
**APP. NO.: 7088014601**

**CONSTRUCTION/PERMIT DOCUMENTS**

**C5 09**

SMALL SERVICE LINE, DOUBLE METERS  
 RELEASE SYSTEM  
 SERVICE MANAGEMENT  
 DD-534-05  
 1 OF 1

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**THE SEAL, OFFERING BY THE STATE OF TEXAS, IS VALID ONLY WHEN USED IN CONNECTION WITH A PROFESSIONAL ENGINEER LICENSE ISSUED BY THE STATE OF TEXAS.**

**NORTHERN METROHSB DISTRICT**







CONTRACT NO.	
PROJECT NO.	
DATE	
SCALE	
BY	
CHECKED	
DATE	

**INTEGRATED ARCH**  
 KAARLSEN  
 NOONAN  
 RITTMANN  
 GARCIA  
 10000 SANDCREEK FRODO KEE  
 HOUSTON, TEXAS 77062  
 2820 WEAVER  
 HOUSTON, TEXAS 77063

**AGRICULTURE SCIENCE & TECHNOLOGY ACADEMY AT SANDRA DAY O'CONNOR HS UPGRADES**

12221 LESLIE ROAD, HELOTES, TX 78023

**KCI TECHNOLOGIES, INC.**  
 1500 W 10 WEST, SUITE 300  
 SAN ANTONIO, TEXAS 78203-0337  
 PHONE: (214) 516-0888  
 FAX: (214) 541-6463  
 REGISTRATION #F-10573 #F121943-03

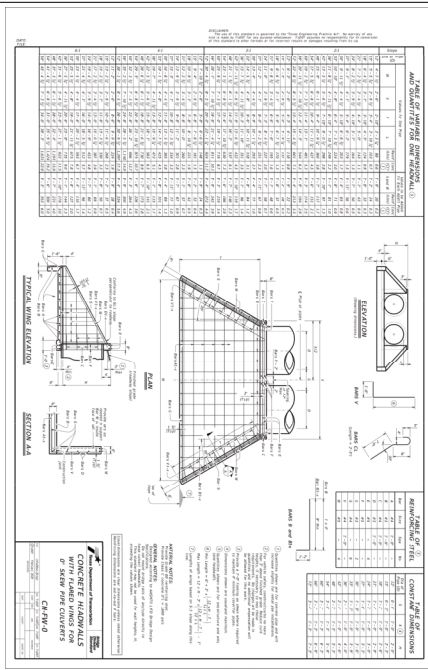
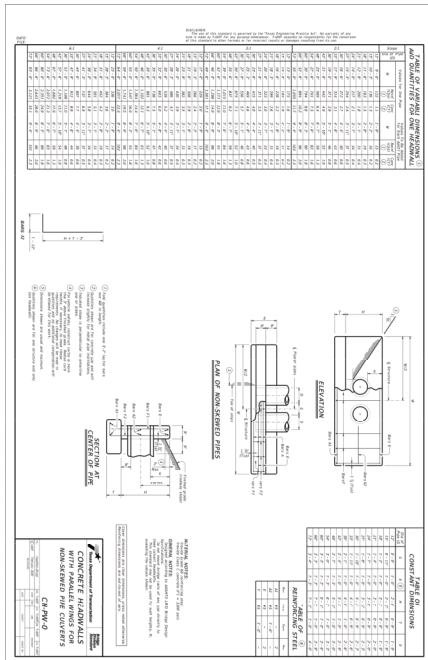
ENGINEER OF RECORD  
**PAAR**  
 LICENSE NO. 1490  
 PROFESSIONAL SEAL  
**PAAR**  
 LICENSE NO. 7088014601



THE SEAL, SIGNATURE AND  
 LICENSE NO. OF THE  
 REGISTERED PROFESSIONAL  
 ENGINEER ARE REQUIRED FOR  
 ALL PERMITS AND SHALL BE  
 KEPT ON FILE AT ALL TIMES.  
 AN APPROVED COPY MUST  
 BE SUBMITTED TO THE  
 CITY OF HOUSTON.



NORTHERN HEMISPHERE SCHOOL DISTRICT



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

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

10. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
  
11. The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
  
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
  - A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
  - B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
  - C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office 2800 S. IH 35, Suite 100 Austin, Texas 78704-5712 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329
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**THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.**

# **Attachment G**

Inspection, Maintenance, Repair and Retrofit Plan

## Inspection, Maintenance, Repair and Retrofit Plan

### Existing and Proposed Vegetated Filter Strips (VFSs)

The existing and proposed Vegetated Filter Strips (VFSs) will continue to be and shall be accessible 24 hours a day. As such, any problems associated with the operation of any VFSs will be readily identifiable and can be addressed by the O'Connor High School Facility Maintenance personnel. Refer to Section 3.5.8 TCEQ 'Edwards Aquifer Technical Guidance Manual' RevJul05 pages 3-91/92 for additional intent and guidance on this plan.

O'Connor High School agrees that the following minimum VFS maintenance requirements will be complied with:

1. **Pest Management:** O'Connor High School shall develop and / or maintain their existing Integrated Pest Management Plan for the VFSs. This plan will specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.
  2. **Seasonal Mowing and Lawn Care:** The VFSs will be sodded with native grass cover. The areas will be mowed as needed to maintain reasonable appearance and to keep grass under 6" high. Grass clippings and brush debris will not be deposited within VFSs. Regular mowing will include weed control practices, but herbicide use will be kept to a minimum.
  3. **Inspection:** These VFSs shall be inspected a minimum of 2 times per year to check for erosion or damage to vegetation. Additional inspections are to be made after periods of heavy rainfall. Inspections shall check uniformity of grass cover, debris and litter, and areas of sediment accumulation. Bare spots and areas of erosion will be replanted and restored to meet original specifications. Additional level spread device(s) will be installed if necessary to re-establish shallow overland flow.
  4. **Debris and Litter Removal:** VFSs shall be kept free of obstructions to reduce floatables being flushed downstream and to maintain an aesthetically pleasing appearance and shall be inspected for conformance to this requirement a minimum of 4 times per year.
  5. **Sediment Removal:** Remove sediment from the VFSs when sediment buildup reaches a depth of 3 inches at any spot or when the proper functioning is impaired or when the vegetation is covered. Sediment should be cleared periodically as needed. Sediment shall be disposed of in a manner that will not cause additional siltation.
  6. **Grass Reseeding and Mulching:** Eroded areas within the VFSs shall be filled, compacted, and new sod established in order to maintain a consistent final grade. Grass damaged during the sediment removal process shall be promptly replaced using the same species used during the establishment of the VFSs. Flow shall be diverted from the damaged area(s) until the grass is firmly established. Bare spots and areas of erosion identified during Item 3 inspections must be replanted and restored to meet specifications. The VFSs must be weeded and replanting should be done more frequently in the first two (2) to three (3) years after installation to ensure stabilization.
  7. **Limits:** The limits of each VFSs shall be plainly marked to preclude inadvertent destructive activities within said limits.
  8. **Record Keeping:** All inspections, maintenance, repairs, or other items done to each respective VFS shall be recorded in a log on-site. This log should be kept at the Office of Facilities at O'Connor High School for easy access. Please refer to the example provided on page 3 of Attachment G which shows a typical sample form.
-

## Inspection, Maintenance, Repair and Retrofit Plan

### Existing and Proposed Water Quality Basins (WQBs)

The existing and proposed Water Quality Basins for treating of the impervious cover contributing to the total suspended solids within respective watershed will remain accessible 24 hours a day. As such, any problems associated with the operation of the Water Quality Basin (WQB) will be readily identifiable and can be addressed by the O'Connor High School Facility Maintenance personnel. Refer to Section 3.5.9 TCEQ 'Edwards Aquifer Technical Guidance Manual' RevJul05 pages 3-92/93 for additional intent and guidance on this plan.


O'Connor High School agrees that the following minimum WQB maintenance requirements will be complied with including items per the previous Inspection, Maintenance, Repair, and Retrofit Plan for this existing basin:

1. **Pest Management:** O'Connor High School shall develop and / or maintain their existing Integrated Pest Management Plan for the WQB. This plan will specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.
2. **Seasonal Mowing and Lawn Care:** The WQB will be sodded with native grass cover. The areas will be mowed as needed to maintain reasonable appearance and to keep grass under 6" high. Grass clippings and brush debris will not be deposited within the WQB. Regular mowing will include weed control practices, but herbicide use will be kept to a minimum. Basin should be free of weeds or any other unwanted vegetation, such as trees within the basin.
3. **Inspection:** WQB shall be inspected a minimum of 2 times per year to check for erosion, damage to vegetation, and / or damage to the sand bed. Additional inspections are to be made after periods of heavy rainfall. Inspections shall check for signs of cracking in or other damage to the basin concrete structures, damage to any of the pipes, damage to gabion structure, uniformity of grass cover, erosion around the basin, uniformity of sand, debris and litter, areas of sediment accumulation, and check for erosion of downstream areas from all discharge pipes coming from the basins. Bare spots and areas of erosion will be replanted and restored to meet original specifications. Additional level spread device(s) will be installed if necessary to re-establish shallow overland flow.
4. **Debris and Litter Removal:** Opening to the WQB shall be kept free of obstructions to reduce floatables being flushed downstream and to maintain an aesthetically pleasing appearance and shall be inspected for conformance to this requirement a minimum of 4 times per year.
5. **Sediment Removal:** Remove sediment from the inlet structure and sedimentation chamber when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least every year and from the sedimentation basin (including the gabion structures) at least every 5 years.
6. **Media Replacement:** Maintenance of the filter media is necessary when the drawdown time exceeds 48 hours. When this occurs, the upper layer of media should be removed and replaced with new material meeting the original specifications. Any discolored media should also be removed and replaced. In filters that have been regularly maintained, this should be limited to the top 2 or 3 inches.
7. **Filter Underdrain:** Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.
8. **Grass Reseeding and Mulching:** Eroded areas within the WQBs shall be filled, compacted, and reseeded in order to maintain a level final grade. Grass damaged during the sediment removal process shall be promptly replaced using the same seed mix used during the establishment of the WQB or VFS. Flow shall be diverted from the damaged area(s) until the grass is firmly established. Bare spots and areas of erosion identified during Item 3 inspections must be replanted and restored to meet specifications.
9. **Limits:** The limits of each WQB shall be plainly marked to preclude inadvertent destructive activities within said limits. Any vertical basin walls shall be fenced off with a minimum 4' tall green chain link fence. A gate will be provided at the access point to the basin ramp and should remain locked when not being accessed for maintenance or inspections when a fence is installed. The sediment marker inside the basin should be visible at all times and if at some point it becomes faded or not legible, it should be remarked.
10. **Record Keeping:** All inspections, maintenance, repairs, or other items done to each respective VFS shall be recorded in a log on-site. This log should be kept at the Office of Facilities at O'Connor High School for easy access. Please refer to the example provided on page 3 of Attachment G which shows a typical sample form.


Inspection, Maintenance, Repair and Retrofit Plan

**PERMANENT BMP RECORD KEEPING LOG**

Date of Activity	Location	PLEASE CHECK ONE ITEM				Description of Item	PERSON DOCUMENTING ACTIVITY		
		Inspection Item	Maintenance Item	Repair Item	Other		Name	Job Title	Initial
January 15, 2020	WQB#			✓		Resodded Bare Spot near toe of basin at inlet to basin as Example 1	John A. Budd	ABC Contracting	JAB
January 20, 2020	VFS#		✓			Removed Weeds from VFS as Example 2	Noe L. Snow	Maintenance Team	NLS
March 23, 2020	WQB#		✓			Removed Weeds from sand filter in WQB as Example 3	Noe L. Snow	Maintenance Team	NLS
April 23, 2020	WQB#	✓				Inspected Basin for signs of erosion after 2 day Rain Event as Example 4	Abel B. Chavez	Maintenance Team	ABC

  
 \_\_\_\_\_  
 James Evans  
 Director of Facilities and Construction  
 Northside Independent School District

\_\_\_\_\_  
 Date: 11/07/2023

  
 \_\_\_\_\_  
 Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
 Practice Leader \ Senior Associate  
 KCI Technologies, Inc.  
 Certifying Engineer

\_\_\_\_\_  
 Date: 11/07/2023

# **Attachment I**

## **Measures for Minimizing Surface Stream Contamination**



# **Attachment I**

## **Measures for Minimizing Surface Stream Contamination**

All runoff from all offsite and onsite sources will discharge via a series of swales, improved earthen channels, storm drains, and underdrainage systems. These drainage features and infrastructure direct runoff towards Leon Creek.

- The “first flush” from the existing parking lot, existing roadway, and the portion of the now to be constructed parking lot and buildings of this project’s WPAP and Project Boundary will be conveyed by the existing Student Parking Lot Water Quality Basin that will be upsized to accommodate increase in runoff. After stormwater treatment, the water quality basin will be discharged to Leon Creek.
- The “first flush” from the proposed barn will be treated by proposed VFS.

Refer to the enclosed “Water Pollution Abatement Plan (WPAP)”; “Storm Water Pollution Prevention Plan (SWPPP) / Erosion and Sediment Control Plan”; and the “Storm Water Pollution Prevention Plan (SWPPP) Details / Erosion and Sediment Control Details” for measures to handle runoff pollutants during construction.

During the construction phase of the project, all BMPs must be inspected every 7 days and within 24 hours of a rainfall event of 0.5 inches or more. These inspections and if any maintenance is performed on such BMPs, it must be documented within the inspection and maintenance report form and kept on site. The forms can be found at the end of this section.

# **Agent Authorization Form (TCEQ-0599)**

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

I Jacob Villarreal, P.E. \_\_\_\_\_  
Print Name

Executive Director of Construction and Engineering \_\_\_\_\_  
Title - Owner/President/Other

of Northside Independent School District \_\_\_\_\_  
Corporation/Partnership/Entity Name

have authorized Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA  
Practice Leader | Senior Associate \_\_\_\_\_  
Print Name of Agent/Engineer

Of KCI Technolgies \_\_\_\_\_  
Print Name of Firm

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

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

  
Applicant's Signature

8/16/23  
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Jacob Villarreal 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 16 day of August, 2023.

Yronne M. Carter  
NOTARY PUBLIC

Yronne M. Carter  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 12/08/2026

# **Application Fee Form (TCEQ-0574)**

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: O'connor High School agricultural science and technology

Regulated Entity Location: 12221 Leslie Rd, Helotes, TX 78023

Name of Customer: Northside Independent School District

Contact Person: Paul A. Mathis, P.E., PMP Phone: (210) 641-9999

Customer Reference Number (if issued): CN 601104169

Regulated Entity Reference Number (if issued): RN 104754304

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

### Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
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	26.936 Out of 157.625 Acres	\$ 10,000
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 9/22/2023

# Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

## **Water Pollution Abatement Plans and Modifications**

### **Contributing Zone Plans and Modifications**

<b>Project</b>	<b>Project Area in Acres</b>	<b>Fee</b>
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

### **Organized Sewage Collection Systems and Modifications**

<b>Project</b>	<b>Cost per Linear Foot</b>	<b>Minimum Fee- Maximum Fee</b>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

### **Underground and Aboveground Storage Tank System Facility Plans and Modifications**

<b>Project</b>	<b>Cost per Tank or Piping System</b>	<b>Minimum Fee- Maximum Fee</b>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

### **Exception Requests**

<b>Project</b>	<b>Fee</b>
Exception Request	\$500

***Extension of Time Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Extension of Time Request	\$150



# **TCEQ Core Data Form (TCEQ-10400)**



# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 601104169		RN 104754304

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)		
<input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)				
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>				
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)			<i>If new Customer, enter previous Customer below:</i>	
Northside Independent School District				
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
<b>11. Type of Customer:</b>				
<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual		Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input checked="" type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:
<b>12. Number of Employees</b>			<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following				
<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Other: <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant				
<b>15. Mailing Address:</b>	Northside Independent School District			
	5900 Evers Road			
	<b>City</b>	San Antonio	<b>State</b>	TX
	<b>ZIP</b>	78238	<b>ZIP + 4</b>	
<b>16. Country Mailing Information</b> (if outside USA)			<b>17. E-Mail Address</b> (if applicable)	
			info@nisd.net	
<b>18. Telephone Number</b>		<b>19. Extension or Code</b>		<b>20. Fax Number</b> (if applicable)

**SECTION III: Regulated Entity Information****21. General Regulated Entity Information** (If 'New Regulated Entity' is selected, a new permit application is also required.)

New Regulated Entity    Update to Regulated Entity Name    Update to Regulated Entity Information

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

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

O'Connor High School

**23. Street Address of the Regulated Entity:**

O'Connor High School

12221 Leslie Road

(No PO Boxes)

<b>City</b>	Helotes	<b>State</b>	TX	<b>ZIP</b>	78023	<b>ZIP + 4</b>	
-------------	---------	--------------	----	------------	-------	----------------	--

**24. County**

Bexar

If no Street Address is provided, fields 25-28 are required.

**25. Description to****Physical Location:****26. Nearest City****State****Nearest ZIP Code**

*Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).*

**27. Latitude (N) In Decimal:****28. Longitude (W) In Decimal:**

Degrees

Minutes

Seconds

Degrees

Minutes

Seconds

**29. Primary SIC Code****30. Secondary SIC Code****31. Primary NAICS Code****32. Secondary NAICS Code**

(4 digits)

(4 digits)

(5 or 6 digits)

(5 or 6 digits)

8211

611110

**33. What is the Primary Business of this entity?** (Do not repeat the SIC or NAICS description.)

Education

**34. Mailing**

Northsdie ISD

**Address:**

5900 Evers Road

<b>City</b>	San Antonio	<b>State</b>		<b>ZIP</b>	78238	<b>ZIP + 4</b>	
-------------	-------------	--------------	--	------------	-------	----------------	--

**35. E-Mail Address:**

info@nisd.net

**36. Telephone Number****37. Extension or Code****38. Fax Number** (if applicable)

( 210 ) 397-8500

( ) -

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

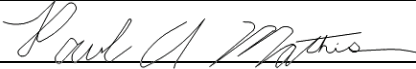
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
		13-90071601B		
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

## **SECTION IV: Preparer Information**

<b>40. Name:</b>	Paul A. Mathis, P.E., PMP, LEED Green Assoc., MBA	<b>41. Title:</b>	Pratice Leader \ Senior Associate
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>
( 210 ) 641-9999		( 210 ) 641-6440	paul.mathis@kci.com

## **SECTION V: Authorized Signature**

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

<b>Company:</b>	KCI Technolgies, Inc.	<b>Job Title:</b>	Civil Engineer
<b>Name (In Print):</b>	Paul A. Mathis (Submitted on behalf of Northside ISD)	<b>Phone:</b>	( 210 ) 641- 9999
<b>Signature:</b>		<b>Date:</b>	9/22/2023