

Modification of a Previously Approved Plan Checklist

- ✓ - **Edwards Aquifer Application Cover Page (TCEQ-20705)**
- ✓ - **General Information Form (TCEQ-0587)**
 - Attachment A - Road Map
 - Attachment B - USGS / Edwards Recharge Zone Map
 - Attachment C - Project Description
- ✓ - **Geologic Assessment Form (TCEQ-0585)**
 - Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
 - Attachment B - Stratigraphic Column
 - Attachment C - Site Geology
 - Attachment D - Site Geologic Map(s)
- ✓ - **Modification of a Previously Approved Plan (TCEQ-0590)**
 - Attachment A - Original Approval Letter and Approved Modification Letters
 - Attachment B - Narrative of Proposed Modification
 - Attachment C - Current Site Plan of the Approved Project
- ✓ - **Application Form (include any applicable to the proposed modification):**
 - Aboveground Storage Tank Facility Plan (TCEQ-0575)
 - Organized Sewage Collection System Application (TCEQ-0582)
 - Underground Storage Tank Facility Plan (TCEQ-0583)
 - Water Pollution Abatement Plan Application (TCEQ-0584)
 - Lift Station / Force Main System Application (TCEQ-0624)
- ✓ - **Temporary Stormwater Section (TCEQ-0602)**
 - Attachment A - Spill Response Actions
 - Attachment B - Potential Sources of Contamination
 - Attachment C - Sequence of Major Activities
 - Attachment D - Temporary Best Management Practices and Measures
 - Attachment E - Request to Temporarily Seal a Feature (if requested)
 - Attachment F - Structural Practices
 - Attachment G - Drainage Area Map
 - Attachment H - Temporary Sediment Pond(s) Plans and Calculations
 - Attachment I - Inspection and Maintenance for BMPs
 - Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices
- ✓ - **Permanent Stormwater Section (TCEQ-0600), if necessary**
 - Attachment A - 20% or Less Impervious Cover Declaration (if requested for multi-family, school, or small business site)
 - Attachment B - BMPs for Upgradient Stormwater

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

Technical Review

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

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

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

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: New Braunfels Christian Academy					2. Regulated Entity No.:104634530				
3. Customer Name: New Braunfels Christian Academy					4. Customer No.:				
5. Project Type: (Please circle/check one)	New	Modification			Extension	Exception			
6. Plan Type: (Please circle/check one)	WPAP	CZF	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential	Non-residential			8. Site (acres):			27.17	
9. Application Fee:	\$810		10. Permanent BMP(s):			Two Batch Detention Basins			
11. SCS (Linear Ft.):	1,620		12. AST/UST (No. Tanks):						
13. County:	Comal		14. Watershed:			Blieiders Creek			

Application Distribution

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

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

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

Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<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

San Antonio Region					
County:	Bexar	Comal	Kinney	Medina	Uvalde
Original (1 req.)	—	<input checked="" type="checkbox"/> _x_	—	—	—
Region (1 req.)	—	<input checked="" type="checkbox"/> _x_	—	—	—
County(ies)	—	<input checked="" type="checkbox"/> _x_	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input checked="" type="checkbox"/> _x_ 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 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 checked="" type="checkbox"/> _x_ 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.

Joseph Sandoval, P.E.

Print Name of Customer/Authorized Agent

Joseph Sandoval, P.E.

3/9/2023

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

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

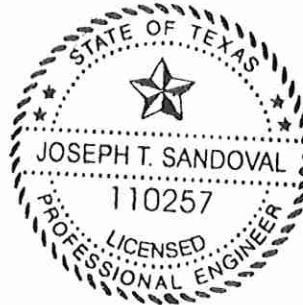
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Joseph Sandoval, P.E.

Date: 3/13/2023

Signature of Customer/Agent:

Joseph Sandoval, P.E.



Project Information

1. Regulated Entity Name: New Braunfels Christian Academy
2. County: Comal
3. Stream Basin: Blieders 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: Nicholas J. Reeves
Entity: New Braunfels Christian Academy
Mailing Address: 220 FM 1863
City, State: New Braunfels, Texas
Telephone: 830-629-1821
Email Address: nreeves@nbcctx.org

Zip: 78132
FAX: _____

8. Agent/Representative (If any):

Contact Person: Joseph Sandoval, P.E.
Entity: HMT Engineering & Surveying
Mailing Address: 290 S. Castell
City, State: New Braunfels, Texas
Telephone: 830-625-8555
Email Address: Josephs@hmtnb.com

Zip: 78130
FAX: _____

9. Project Location:

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

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

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

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 Private School

Prohibited Activities

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

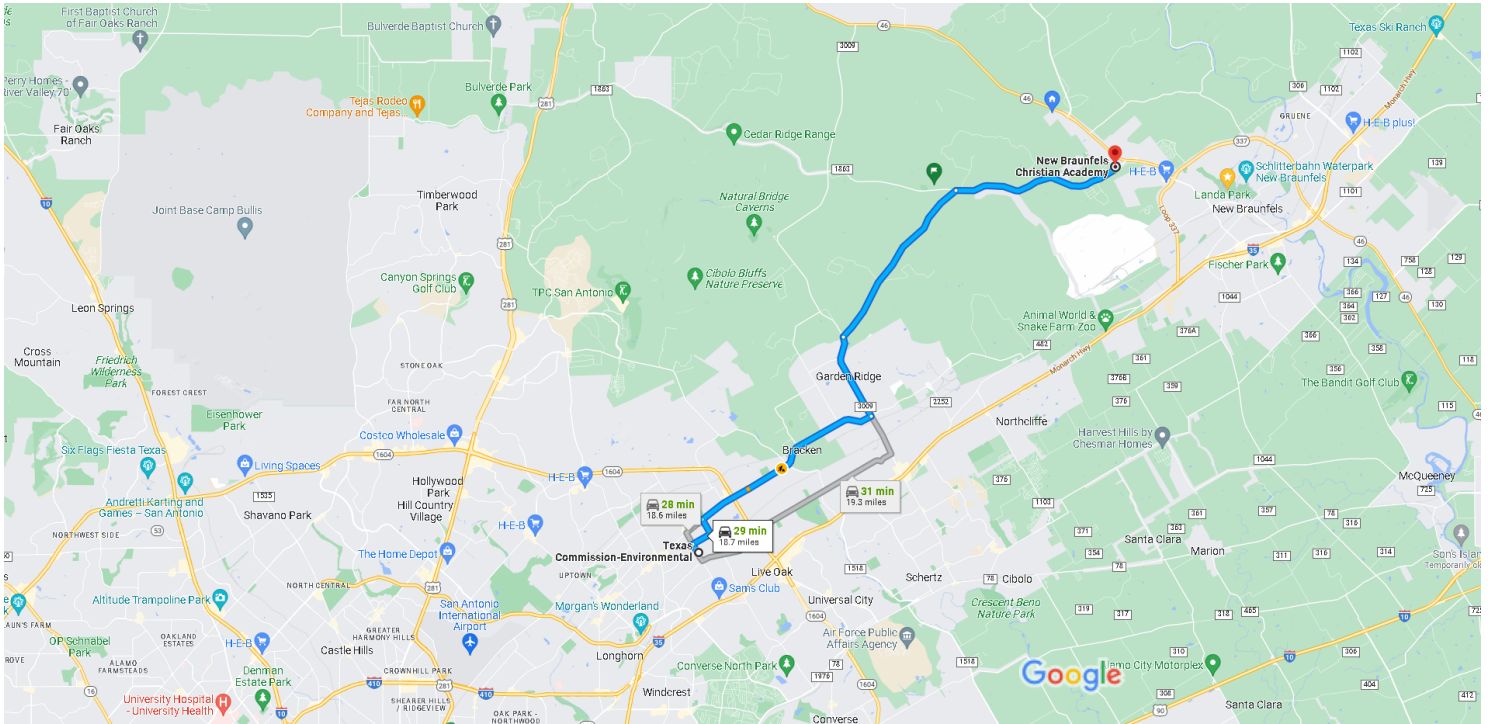
- (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
- (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
- (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
- (4) The use of sewage holding 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.

TCEQ WPAP Mod- New Braunfels Christian Academy
General Information Form (TCEQ-0587) Attachment A - Road Map



Map data ©2022 Google 2 mi

Texas Commission-Environmental
14250 Judson Rd, San Antonio, TX 78233


Continue to Judson Rd

- 16 s (200 ft)
- ↑ 1. Head southeast toward Judson Rd
115 ft
- ↷ 2. Turn right toward Judson Rd
85 ft

Drive from Nacogdoches Rd, Schoenthal Rd N and FM1863 E to New Braunfels

- 28 min (18.6 mi)
- ↷ 3. Turn right onto Judson Rd
0.3 mi
- ↷ 4. Turn right onto Wenzel Rd
0.6 mi
- ↶ 5. Turn left onto Toepperwein Rd
0.4 mi
- ↷ 6. Turn right onto Nacogdoches Rd
5.5 mi
- 📍 Pass by Wendy's (on the left in 0.9 mi)
- ↶ 7. Turn left onto FM3009 N
2.4 mi
- ↷ 8. Turn right onto Schoenthal Rd N
5.0 mi
- ↷ 9. Turn right onto FM1863 E
4.5 mi

Drive to your destination

- 1 min (0.1 mi)
- ↶ 10. Turn left
- 174 ft
- ↷ 11. Turn right
- 26 ft
- ↶ 12. Turn left
-  Destination will be on the left
- 305 ft

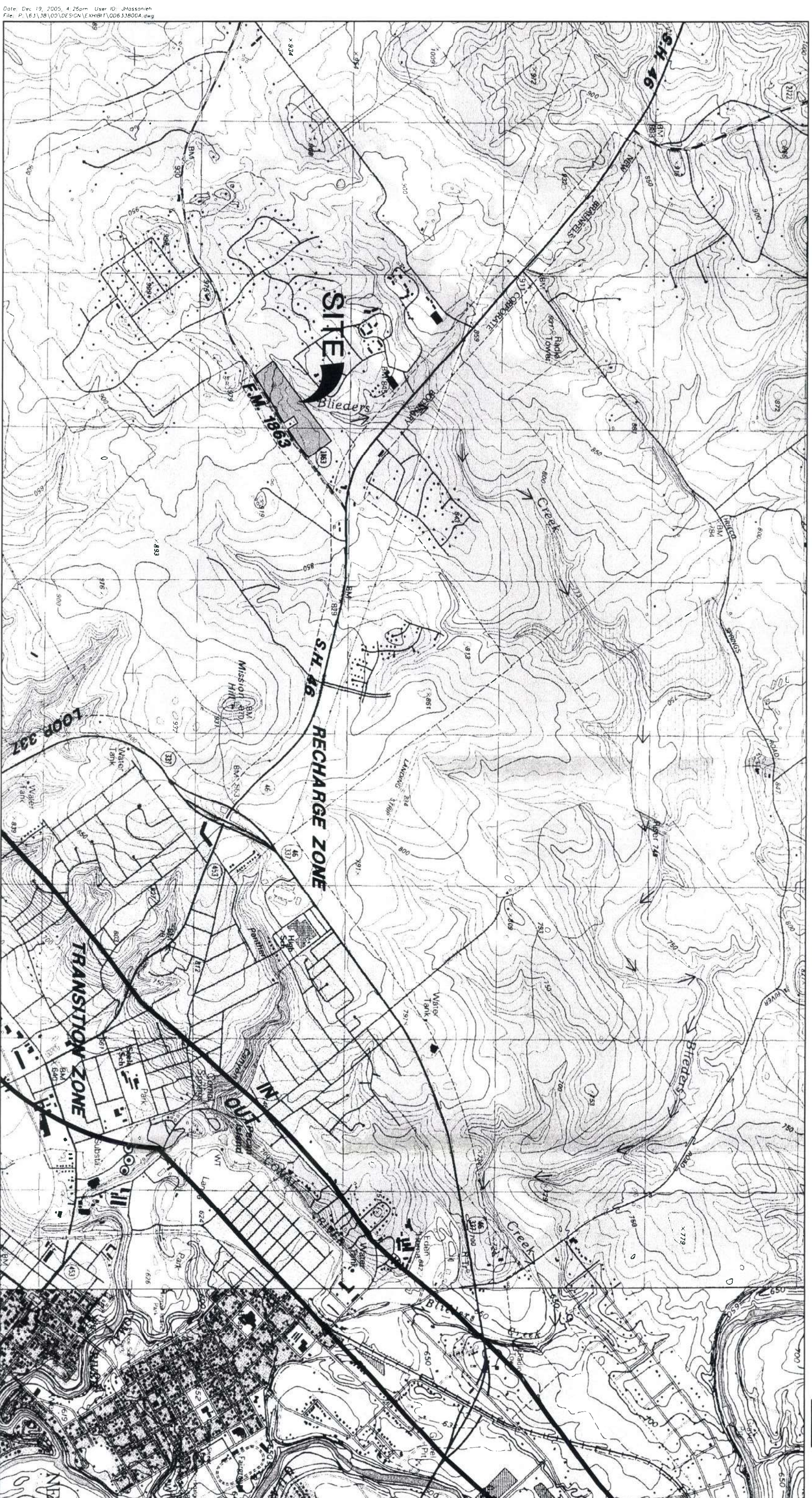
New Braunfels Christian Academy

220 FM1863, New Braunfels, TX 78132

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

**NEW BRAUNFELS CHRISTIAN ACADEMY
WATER POLLUTION ABATEMENT PLAN**

SCALE: 1" = 2000'



Date: Dec 19, 2005, 4:25am User ID: JHassonieh
File: P:\6138\00\DESIGN\EXHIBIT\00633800A.dwg

Pape-Dawson Engineers, Inc.
P:6338/00/DESIGN/EXHIBIT/00633800A.DWG
→ → DRAINAGE FLOW

USGS/EDWARDS RECHARGE ZONE MAP
NEW BRAUNFELS EAST, TX QUADRANGLE
NEW BRAUNFELS WEST, TX QUADRANGLE
ATTACHMENT B

GENERAL INFORMATION
ATTACHMENT C
Project Description

New Braunfels Christian Academy (NBCA) is an existing school on 27.17-acres located at 220 FM 1863, within the city limits of New Braunfels. The project site is located in Comal County, Texas and is situated entirely over the Edwards Aquifer Recharge Zone. Current impervious cover on the NBCA site is 3.84 acres. Approximately 7.49 acres of additional impervious cover are proposed with the full buildout of the campus and accounted for with this modification.

Previous Studies

The existing and approved sewage collection system consists of 2,320 linear feet of 2-inch diameter SDR 26 PVC pipe (ASTM D2241, Class 160) and appropriate appurtenances. The existing sewage collection system provides disposal service for the existing New Braunfels Christian Academy development. The existing lift station/Septic Tank Effluent Pumping (STEP) system consists of a 61”(H)x99”(L)x68”(W) pump tank and two Myers Model ME100-21, 1.0 HP effluent pumps. Each pump includes level pump controllers, pump supports and discharging piping with valves. The system is connected to existing City of New Braunfels wastewater line for conveyance to the Gruene Road Sewage Treatment Plant for treatment disposal.

Proposed Improvements

Construction activities proposed with this MOD include clearing, grading, excavation, drainage improvements, utility improvements, a sports field, gym building, and construction of two (2) batch detention basins. The proposed sanitary sewer improvements for the fieldhouse specifically include the construction of wet well with grinder pump, a 1.25” force main and appropriate appurtenances. The wet well and grinder pump will be installed at the outlet of the proposed field house. Effluent will be pumped from there through approximately 1,259 L.F. of 1.25-inch diameter SDR 26 PVC pipe (ASTM D2241, Class 160) pressurized wastewater line to connect to the existing lift station/Septic Tank Effluent Pumping System. Additionally, there will be 291 LF of 6” PVC gravity sewer extension from the existing gravity system onsite to serve the proposed new school buildings onsite.

All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

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: Matt Anding

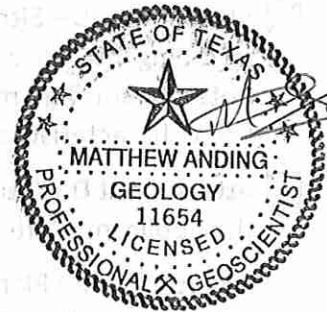
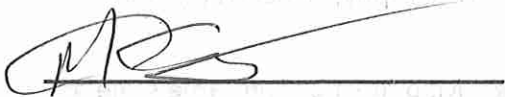
Telephone: 832-641-8143

Date: 12/30/2021

Fax: _____

Representing: Anding Environmental Consulting, LLC (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Anding Environmental Consulting, LLC

Project Information

1. Date(s) Geologic Assessment was performed: December 19, 2021

2. Type of Project:

- WPAP
 SCS

- AST
 UST

3. Location of Project:

- Recharge Zone
 Transition Zone
 Contributing Zone within the Transition Zone

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
RUD	D	5'
MEC	D	6'

** Soil Group Definitions (Abbreviated)*

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

6. **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. **Attachment C – Site Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'
 Applicant's Site Plan Scale: 1" = 100'
 Site Geologic Map Scale: 1" = 100'
 Site Soils Map Scale (if more than 1 soil type): 1" = 100'
9. Method of collecting positional data:
 - Global Positioning System (GPS) technology.
 - Other method(s). Please describe method of data collection: _____
10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. Surface geologic units are shown and labeled on the Site Geologic Map.

12. Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
- Geologic or manmade features were not discovered on the project site during the field investigation.
13. The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
- There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- The wells are not in use and have been properly abandoned.
- The wells are not in use and will be properly abandoned.
- The wells are in use and comply with 16 TAC Chapter 76.
- There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

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

**GEOLOGIC ASSESSMENT
ATTACHMENT A - GEOLOGIC ASSESSMENT TABLE**

GEOLOGIC ASSESSMENT TABLE PROJECT NAME: NBGA 220 FM 1863, New Braunfels, TX 78130

1A FEATURE ID	1B LATITUDE		1C LONGITUDE		2A FEATURE TYPE	2B POINTS	3 FORMATION	4 DIMENSIONS (FEET)			5 TREND (DEGREES)	5A $\frac{D}{L}$	6 DENSITY (NO/FT)	7 APERTURE (FEET)	8A INFILL	8B RELATIVE INFILTRATION RATE	9 TOTAL	10 SUSCEPTIBILITY	11 CATCHMENT AREA (ACRES)		12 TOPOGRAPHY
	X	Y	Z	<1.6				≥1.6													
CD-1	29°43'9.945"N	98°11'2.012"W	10	10	1.5		Kep				10			C	10 - Low	15	15		✓	Hilltop	
MB-1	29°43'1.101"N	98°11'1.453"W	100	100	6		Kep							N	5 - Low	35	35			Drainage	
SC-1	29°42'59.759"N	98°11'14.133"W	1	1.5	1.5		Kep							O	15 - Low	35	35			Hillside	
SC-2	29°43'1.350"N	98°11'15.465"W	2	1	1.5		Kep							O	15 - Low	35	35			Hillside	

* DATUM: NAD 1983 StatePlane, Texas South Central FIPS 4204

2A TYPE	2B POINTS
C	30
SC	20
SF	20
F	20
O	5
MB	30
SW	30
SH	20
CD	5
Z	30

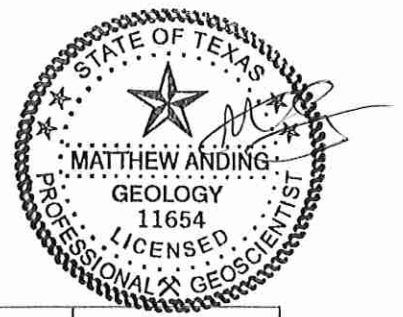
N	8A INFILLING
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave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

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



I have read, understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.
 My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.
 Date 12/30/21
 Matt Anding, P.G.

**GEOLOGIC ASSESSMENT
ATTACHMENT B - STRATIGRAPHIC COLUMN**



STRATIGRAPHIC COLUMN

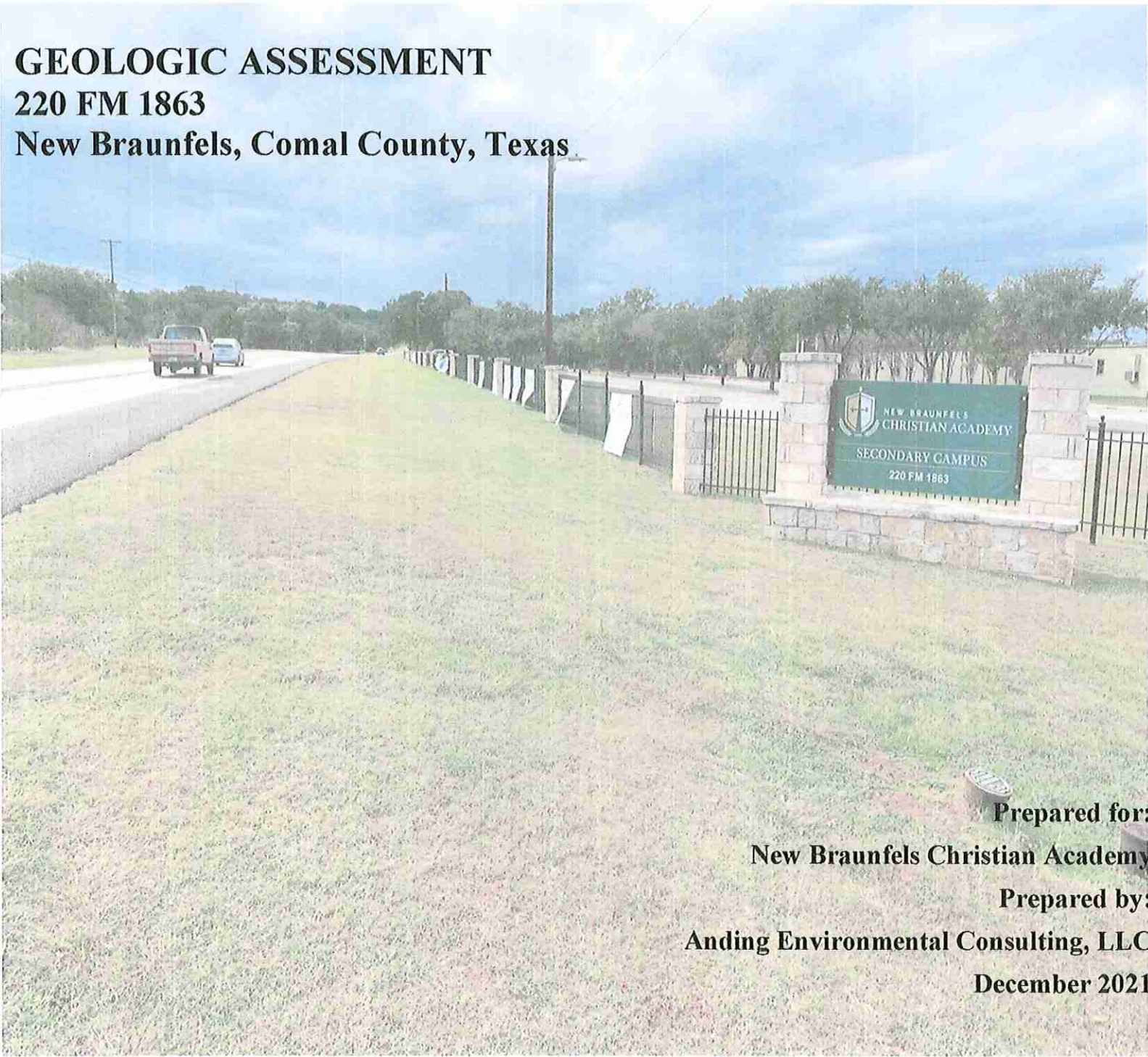
Hydrogeologic subdivision		Group, formation, or member	Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/permeability type				
Upper Cretaceous	Upper confining unit	Taylor Group	CU	600	Clay; chalky limestone	Gray-brown clay; marly limestone	None	Low porosity/ low permeability				
		Austin Group	CU; rarely AQ	130 – 150	White to light-tan to gray limestone	White, chalky limestone; <i>Pycnodonte oucella</i> <i>Inoceramus subquadratus</i>	None	Low porosity; rare water production from fractures/ low permeability				
		Eagle Ford Group	CU	30 – 50	Brown, flaggy sandy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/ low permeability				
		Buda Limestone	CU	40 – 50	Buff, light-gray, dense mudstone	Porcelaneous limestone	Minor surface karst	Low porosity/ low permeability				
		Del Rio Clay	CU	50 – 60	Blue-green to yellow-brown clay	Fossiliferous; <i>Hymatogyna arictina</i>	None	None/primary upper confining unit				
I		Georgetown Formation	CU	40 – 60	Gray to light-tan, marly limestone	Marker fossil: <i>Waconella wacoensis</i>	None	Low porosity/ low permeability				
Lower Cretaceous	Edwards aquifer	Edwards Group	Person Formation	Cyclic and marine members, undivided (4)	AQ	0 – 70	Mudstone to packstone; <i>milliolid</i> grainstone; chert	Boxwork vugs; light tan, massive; some <i>Toucasia</i> , <i>Caprinid</i> , and <i>Chondrodonta</i>	Many caves; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric water-yielding; one of the most porous and permeable; essentially absent in Travis County		
				Leached and collapsed members, undivided (4)	AQ	30 – 80	Crystalline limestone; mudstone to wackestone to <i>milliolid</i> grainstone; chert; collapsed breccia	Light-gray, bioturbated iron-stained beds separated by massive limestone beds; <i>Toucasia</i> , <i>Chondrodonta</i>	Extensive lateral development; large rooms	Majority not fabric/ one of the most porous and permeable		
				Regional dense member (3)	CU	20 – 30	Light-tan, dense, argillaceous mudstone	Wispy iron-oxide stains; <i>Pleuromya knowltoni</i> , <i>Ceratostreon texanum</i>	None; only vertical fracture enlargement	Not fabric/ low permeability; vertical barrier		
		Kainer Formation	Edwards Group	Person Formation	Grainstone member (2)	AQ	45 – 60	Light-gray, <i>milliolid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone; <i>Toucasia</i> , <i>Turritella</i> , and <i>Chondrodonta</i>	Few caves	Not fabric/ recrystallization reduces permeability	
					Kirschberg evaporite member (1)	AQ	65 – 75	Light-gray, crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame; <i>Cladophyllia</i> and <i>Turritella</i>	Probably extensive cave development	Majority fabric/ one of the most porous and permeable	
					Dolomitic member (1)	AQ	110 – 150	Mudstone to grainstone; crystalline limestone; chert	Massively bedded, light gray, <i>Toucasia</i> abundant; <i>Dictyoconus walnutensis</i> , <i>Caprinid</i>	Caves related to structure or bedding planes	Mostly not fabric; some bedding-plane fabric/ water-yielding; locally permeable	
					Basal nodular member	Karst AQ; not karst CU	45 – 60	Shaly, fossiliferous, nodular limestone; mudstone; <i>milliolid</i> grainstone	Massive, nodular and mottled; <i>Ceratostreon texanum</i> , <i>Dictyoconus walnutensis</i> , and <i>Texiglyphuca</i>	Few leaves	Fabric/low permeability	
					Lower confining unit	Upper member of the Glen Rose Limestone	CU; evaporite beds AQ	350 – 500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/ relatively impermeable

SITE STRATIGRAPHY (Person Formation Outcrop)

**GEOLOGIC ASSESSMENT
ATTACHMENT C - SITE GEOLOGY**



GEOLOGIC ASSESSMENT
220 FM 1863
New Braunfels, Comal County, Texas



Prepared for:
New Braunfels Christian Academy
Prepared by:
Anding Environmental Consulting, LLC
December 2021

Geologic Assessment

220 FM 1863

New Braunfels, Comal County, Texas

Prepared for:

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220 FM 1863

New Braunfels, TX 78130

Prepared by:

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Anding Environmental Consulting, LLC.

New Braunfels, TX 78130

December 2021

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Table 3-1 Site Soils

Attachments

Attachment A Geologic Assessment Table
Attachment B Stratigraphic Column
Attachment C Site Geology and Geologic Assessment
Attachment D Site Geologic Maps
Attachment E Photo Log
Attachment F Frost GeoSciences Geologic Site Assessment (2005, 2013)

Acronyms

BMP	Best Management Practices
EAPP	Edwards Aquifer Protection Plan
FEMA	Federal Emergency Management Administration
GPS	Global Positioning System
TCEQ	Texas Commission on Environmental Quality
USDA	United States Department of Agriculture
USGS	United States Geological Survey

1.0 INTRODUCTION AND PURPOSE

1.1 Introduction

This Geologic Assessment was prepared in general accordance with to 30 TAC §213.5(b)(3), effective September 01, 2003, Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments within the Edwards Aquifer Recharge Zone, and the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). Per TCEQ guidance, a proposed project on the Site for future development of additional school facilities requires a Geologic Assessment to identify all potential pathways for contaminant movement to the Edwards Aquifer and provide sufficient geologic information so that the appropriate Best Management Practices (BMPs) can be proposed in the Edwards Aquifer Protection Plan (EAPP). This Geologic Assessment has been prepared by a Texas Board of Professional Geoscientists licensed geologist, Mr. Matt Anding, P.G.

1.2 Project Description

The Site is located at 220 FM 1863, New Braunfels, Comal County, Texas, just west of the intersection of FM 1863 and Hwy 46. The center of the Site is located at 29°43'4.11"N Latitude and 98°11'5.91"W Longitude (WGS 84), and the Site is ~27 acres in size. The property location is depicted on **Figure D-1**. A project is in place to further develop the school property with additional facilities.

The northeastern portion of the Site property is currently developed and being utilized as a middle school and high school campus. This includes three (3) large buildings for classrooms, chapel, and a gymnasium building, sports fields in the rear, and a paved parking lot in front. The southwestern portion of the Site property is currently undeveloped and largely forested.

2.0 METHODOLOGY

2.1 Research Information

The Geologic Assessment was performed by Matt Anding, P.G. and Amanda Anding, Environmental Scientist, with Anding Environmental Consulting, LLC (Anding Environmental) on December 19, 2021. Anding Environmental first conducted a desktop analysis of the geology of the area surrounding the Site. The research included, but was not limited to, the Geologic Atlas of Texas, Federal Emergency Management Agency (FEMA) maps, Edwards Aquifer Recharge Zone Maps, USGS 7.5 Minute Quadrangle Maps, Bureau of Economic Geology online digital data, historic aeriels and topographic maps, and the United States Department of Agriculture (USDA) Soil Survey of Comal County, Texas.

Three (3) Geologic Assessments were previously conducted at and adjacent to the Site, all by Frost GeoSciences. The 2005 GA was conducted for the same project Site boundaries as this GA and 10 findings were documented. The 2006 GA was conducted for the proposed wastewater line adjacent to the north of the Site. The 2013 GA was conducted just for the northeastern developed portion of the Site, and two (2) additional findings were documented. Anding Environmental reviewed the previously conducted GA reports in preparation for this GA, and has addressed all previously documented findings.

2.2 Field Survey

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 25-50 feet, or less depending on vegetation thickness, was used to inspect the Site. A 2019 aerial photograph, in conjunction with a hand held sub-meter Trimble GeoXH Global Positioning System (GPS), was used to navigate on the property and search for previously mapped and other potential recharge features, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The Geologic Assessment Form, Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this Site and are included in this report. Special attention was given to the mapped faults, bedrock outcroppings, and other structural features observed from aerial photographs and the Site reconnaissance.

2.3 Data Gaps

An area in the southwestern portion of the Site, adjacent to the southern Site boundary, was observed to have historic soil fill and limestone rock debris spread out and in piles. Although the piles of fill soil and rock debris covering the natural ground surface represents a data gap to this Geologic Assessment, historic aerial imagery indicates the debris was not located on the Site during the 2005 Geologic Assessment. Any potential recharge features would have likely been observed during that field investigation.

2.4 Limitations of Assessment

No Geologic Assessment can wholly eliminate uncertainty regarding potential pathways for contaminant movement to the Edwards Aquifer in connection with a property. Performance of a Geologic Assessment in accordance with TCEQ-0585 instructions is intended to reduce, but

cannot eliminate, uncertainty regarding the potential for surficial points of infiltration in connection with a property, and the TCEQ recognizes reasonable limits of time and cost.

Anding Environmental assumes no responsibility for the discovery of any surficial or subsurface points of infiltration, caves, solution cavities or enlarged fractures/faults, sinkholes, or any other karst features not observed during this Geologic Assessment. Anding Environmental does not have any responsibility with regard to the Client's compliance with or fulfillment of its obligation under any law, ordinance, or regulation prevailing at any of the observed locations.

3.0 NARRATIVE DESCRIPTION OF SITE GEOLOGY

3.1 Site Characterization

The Site is located on a broad gently sloping topographical area that consists of a developed school campus and an undeveloped wooded area. The northeastern portion of the Site property is currently developed and being utilized as a middle school and high school campus. The southwestern portion of the Site property is currently undeveloped and largely forested.

Site topography tends to slope to the north towards a dry drainage feature which skirts the northern Site boundary. The drainage feature is an unnamed tributary of Blieders Creek, emerges just southwest of the Site, flows to the north then northwest and into Blieders Creek 2 miles northeast of the Site. The highest elevation is approximately 922 ft amsl at the southwestern corner of the Site. The lowest elevation is approximately 864 ft amsl at the northern Site boundary near the drainage feature. Several manmade berms are located on the Site. The athletic fields have a large downgradient manmade berm bordering the western, northern, and eastern sides of the fields. A historic livestock tank is located in the southwestern undeveloped portion of the Site where the tank was excavated and bermed around all sides. The livestock tank berm has since been cut to allow drainage to exit to the northeast. An area in the southwestern portion of the Site, adjacent to the southern Site boundary, was observed to have historic soil fill and limestone rock debris spread out and in piles. The area is vegetated and grown over, indicating the area has not been recently disturbed.

The Site vegetation for the developed northeastern portion of the Site consists of maintained and landscaped lawn, trees, and shrubbery. Site vegetation for the undeveloped southwestern portion of the Site consists of thick cedar trees (Ashe Juniper) stands with live oaks, along with multiple non-wooded grassy areas.

3.2 Site Geology

Per the TCEQ Edwards Aquifer Program GIS dataset, the entire Site is located within the Edwards Aquifer Recharge Zone. A map of the Site and Edwards Aquifer Zones is presented as **Figure D-4**.

The following resources were most utilized in mapping the Site geology:

- Digital Geologic Map Database for the State of Texas (USGS)
- 1982 Geologic Atlas of Texas, San Antonio Sheet (Bureau of Economic Geology)
- 1992 Geologic Map of Texas (Bureau of Economic Geology)
- 2007 Geology of the New Braunfels Area (Bureau of Economic Geology, Texas Water Development Board, and USGS)
- Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas (USGS)
- Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas (USGS)

High resolution geologic mapping in the Site area was best found in the 1982 Geologic Atlas of Texas, San Antonio Sheet (BEG) and the 2007 Geology of the New Braunfels Area (BEG, TWDB,

USGS). The 1982 San Antonio Sheet maps the Site as largely Edwards Limestone Undivided (Ked) with a small sliver of Del Rio Clay (Kdr) mapped in the southwest corner of the Site, which is likely just due to a GIS projection error. The 2007 Geology of the New Braunfels Area figure maps the entire Site as the Person Member (Kp) of the Edwards Group.

Person Member of Edwards Group (Lower Cretaceous) - The entirety of the Site consists of the Person Cyclic and Marine Member of the Edwards Group. This is characterized as a chert-bearing mudstone to packstone and miliolid grainstone. This unit weathers to massive, light-tan outcrops with scattered *toucasia* present. This member is one of the most productive hydrologically because of the large number of subsurface caverns associated with incipient karstification. It can be very permeable with laterally extensive, fabric and nonfabric-selective porosity (Small and Hanson, 1995; Stein and Ozuna, 1995). Thickness 10–180 ft.

Del Rio Clay (Upper Cretaceous) – The 1982 San Antonio Sheet maps a small sliver of Del Rio Clay (Kdr) in the southwest corner of the Site, though this may be a GIS error. Anding Environmental did not observe any Del Rio clay outcroppings on the Site, however, there are known outcroppings to the west and south of the Site. The Del Rio Clay is a primary upper confining unit of the Edward Aquifer. The Del Rio Clay has no recognized cavern development and no significant porosity or permeability. (Small and Hanson, 1995; Clark, 2003). Thickness 40–110 ft.

Other stratigraphic units mapped nearby the Site include:

Georgetown Formation (Lower Cretaceous) – The Georgetown Formation, deposited on the eroded Person Formation, outcrops just below the Del Rio Clay and Buda Limestone in the area. The Georgetown Formation is the uppermost unit of the Edwards Aquifer. This unit is characterized by reddish-brown and gray to light-tan, marly limestone with biomicritic texture (Young, 1967). The Georgetown is considered an upper confining unit, has very low porosity and permeability, and has little or no karstification or cavern development (Stein and Ozuna, 1995). Thickness 2–20 ft.

Buda Limestone (Upper Cretaceous) – The Buda Limestone outcrops on topographic highs in the area on top of Del Rio Clay and Georgetown formations. Limestone beds in the upper part of the Buda are generally hard and dense and may exhibit conchoidal fracturing and a porcelaneous texture when broken. Limestone beds in the lower part of the Buda tend to be chalky (Collins, 2000). Regionally considered a confining unit. This unit has minor surface karst with low porosity and permeability (Small and Hanson, 1995). Thickness 40–90 ft.

Edwards limestone outcroppings were observed throughout the undeveloped southwestern portion of the Site. Typical outcroppings include bedding outcrops on flat topography where soil has eroded, boulders and exposed bedding on slopes, and exposed bedding within drainages.

Based on literature research and field reconnaissance, the Site has multiple known inferred normal faults on the property and surrounding area. Anding Environmental observed no significant fault structures on the Site during the field reconnaissance. No evidence of fault structures were observed on historic aerial imagery. Micro-fracturing was, however, observed in bedrock and large rocks throughout the Site.

A geologic map of the Site is presented as **Figure D-5**. Attachment E, Photo Log, displays photographs of typical outcroppings of the mapped geologic unit on Site.

3.3 Site Soils

The majority of the Site (Person formation) is covered with Rumble-Comfort soils. The southwestern corner of the Site is mapped as having Medlin, warm-Eckrant association soils. **Table 3-1** displays soils mapped on the Site and **Figure D-6** illustrates the soils in relation to the Site.

Table 3-1 – Site Soils

RUD - Rumble-Comfort, rubbly association, 1% to 8% slopes
MEC - Medlin, Warm-Eckrant association, 1% to 8% slopes

Rumble-Comfort, Rubbly Association (RUD) - Rumble-Comfort, Rubbly Association soils are on broad ridgetops and side slopes with gently sloping topography and more sloping areas near rock outcrops and drainage-ways. Rumble-Comfort, Rubbly Association soils (RUD) may have the surface covered with as much as 20 percent by volume of rounded chert, limestone fragments, gravels, and/or cobble. The surface soil layer is a dark reddish brown, very cherty loam, or gravelly clay loams to extremely cobbly clay loams that is about 10 inches thick. The subsoil (10-28 inches deep) is a dark reddish brown very cherty clay to extremely cherty clay that may have up to 75 percent by volume of limestone fragments present in the lower part of the subsoil. The underlying material is coarsely fractured indurated limestone that has dark reddish brown soil in the crevices. The underlying material is 28-36 inches in depth. Bedrock can be below 28-29 inches. Rumble-Comfort, Rubbly Association soils are typically well drained with very high runoff class and moderately low to moderately high capacity to transmit water (USDA/NRCS, 2021).

Medlin, Warm-Eckrant Association, Undulating (MEC) -The topographic sequence finds the Eckrant soil on the upper side slopes and on the crest of the hills or ridges in the region, while the Medlin is on the concave hillside below the Eckrant with the Krum below on the toe slope and the Comfort at the crest of ridges and narrow limestone rock ledges of the upper side slopes (Carson, 2000). This soil series is typically clayey residuum weather from claystones.

The topsoil of the Medlin, Warm-Eckrant Association, Undulating soils is grayish brown stony to dark grayish brown clay about 9 to 11 inches thick. The underlying subsoil layers are light yellowish brown, light olive brown, olive brown, olive yellow or olive. The unique color and mottles also present are due to the very poor permeability and large amounts of shrink/swell clay present. The subsoil layers are 9 to 80 inches deep. The weathered parent material is 50 to 80 inches deep and a light gray to light brownish gray shaley clay. Mottles of olive yellow and yellow are common here due to the poor drainage and discontinuous oxygen content (Carson, 2000). These soils are typically well drained with very high runoff class and very low to moderately low capacity to transmit water (USDA/NRCS, 2021).

In general, Anding Environmental observed Site soils to be rather deep in places other than steep slopes, bedrock outcrops, and drainages.

3.4 Site Assessment

Anding Environmental observed and documented four (4) features during the Site reconnaissance, including a non-karst closed depression, a manmade feature in bedrock (stock tank), and two (2) solution cavities. Details regarding these features can be found below and in the Geologic Assessment Table found in **Attachment A** of this report, and the feature locations are displayed on **Figure D-7**.

Documented Features

CD-1 Non-Karst Closed Depressions: This feature consists an area approximately 10' x 10' where two (2) voids within manmade fill were observed. The fill material is fairly deep as it was brought in to develop a berm supporting a detention area around the athletic fields in the northeastern portion of the Site. Both voids appear to be located within the fill adjacent to larger rocks where compaction was not suitable. Due to the features being located on deep fill material, the topographic positioning on the bermed slope, and a lack of evidence suggesting surface water being directed towards the features, Anding Environmental determined the features to not have a high potential for surface water infiltration to the subsurface, and are not considered a sensitive feature.

This feature was documented as S-101 in the 2013 GA and was not considered to be a sensitive feature. It should be noted that the 2013 GA identified three (3) voids in this area and Anding Environmental was unable to locate a third void.

MB-1 Manmade Feature in Bedrock: This feature consists of a historic livestock tank excavated down to bedrock in the center. The excavated soil was used to create a berm around the livestock tank. A section of the down-gradient berm has been removed for quite some time, allowing water to freely flow out of the depression area. Historic aerials indicate a lack of standing water in the depression due to this dating back to at least 1995. The exposed bedrock in the center is minimal and no voids or evidence of surface water flow to the subsurface was observed. Due to the historic tank no longer allowing water to pond and a lack of voids or infiltration evidence, this feature is not being considered a sensitive feature.

This feature was documented as S-1 in the 2005 GA and was not considered a sensitive feature.

SC-1 Solution Cavity: This solution cavity, located on the southwestern portion of the Site, was observed on a gentle slope within fractured limestone boulders at the base of an oak tree. The cavity and surrounding area was investigated for potential for surface water infiltration to the subsurface. It appears the cavity is located between boulders, not within bedrock, as the limestone rock is sitting higher than surrounding surface. The cavity was likely formed as an animal burrow under the rocks. Digging by hand and shovel, the bottom of the cavity appeared to be limestone bedding without

additional fracturing or cavities. The slope which the boulders are located on, a slight topographic high, displayed no evidence of surface water drainage or infiltration. Due to a very low potential for surface water infiltration to the subsurface, and the animal burrow nature of the dug-out cavity, this finding is not being considered a sensitive feature.

This feature was documented as S-2 in the 2005 GA and was not considered a sensitive feature.

SC-2 Solution Cavity: This solution cavity, also located on the southwestern portion of the Site, was observed on a gentle slope in soil amongst limestone boulders. The cavity and surrounding area was investigated for potential for surface water infiltration to the subsurface. The cavity is situated along the side of a boulder, not within bedrock. Digging by hand and shovel, the bottom of the cavity appeared to be limestone bedding without additional fracturing or cavities. The slope which the cavity is located on displayed no evidence of surface water drainage or infiltration. Due to a very low potential for surface water infiltration to the subsurface, this finding is not being considered a sensitive feature.

This feature was documented as S-3 in the 2005 GA and was not considered a sensitive feature.

2005 and 2013 Geologic Assessment Features

Multiple features observed in the 2005 and 2013 GA reports were either not located during this Site investigation or were determined to not be potential features.

S-4 (2005) was identified as a non-sensitive man-made feature in bedrock “consisting of an excavated area” near the livestock tank. While Anding Environmental did observe berms and several undulating topographic lows at the S-4 area, no bedrock or topographic lows where surface water would pond was located.

The 2005 GA report identified three (3) recently drilled geotechnical borings as non-sensitive man-made features in bedrock (S5, S-9, and S-10). The borings were plugged and appropriately abandoned at the time. Anding Environmental was unable to locate the boring holes in the field during the Site visit.

S-6 (2005) is a dry drainage which was identified as sensitive zone feature due to some vuggy limestone and fractured rock outcrops within the drainage pathway. The 2005 GA did not identify any specific features which would allow for rapid infiltration into the subsurface, and no photographic documentation was provided. Anding Environmental observed the drainage to competent bedrock where exposed, or otherwise a swale with a vegetated soil horizon. One area was observed with particular vuggy limestone, however lacking permeability. Standing water was observed in the vuggy limestone area. Discontinuous fractured rock was observed at a bearing of N 33°, but also at other various bearings. Anding Environmental closely examined the entire length of the drainage, hand digging any potential solution cavities, and no individual features were

observed. Exposed bedrock provided for a clear observation of fracturing and porosity conditions. Depressions and fractures were observed to be filled with vegetation and Rumble-Comfort clays, characterized by high runoff potential, suggesting the drainage feature has potential for high runoff instead of infiltration. Anding Environmental determined the dry drainage feature to be formed in intact limestone with minimal leakage through hairline fractures, bedding planes, or matrix porosity, which would not be considered a point or zone feature.

S-7 (2005) was identified as a non-sensitive solution cavity located just northeast of the baseball field. Anding Environmental was unable to locate any solution cavities in the area surrounding the 2005 coordinates and observed no evidence of surface water preferential pathways.

S-8 (2005) was identified as a non-sensitive solution cavity located adjacent or below the parking lot in front of the school. Anding Environmental was unable to locate any solution cavities in the area surrounding the 2005 coordinates and observed no evidence of surface water preferential pathways. It is possible the solution cavity was covered by the parking lot or newer landscaping.

S-102 (2013) was identified as a non-sensitive man-made feature in bedrock set of septic treatment tanks located behind the school gymnasium. Based on the 2013 report, it is unclear if the septic tank holds were dug down to bedrock. Anding Environmental examined the area directly on top of and surrounding the installed septic tanks and observed no evidence of surface water preferential pathways or surficial voids. The surface appears to be compacted clays which would cause rapid runoff of surface water.

4.0 SUMMARY

Anding Environmental has conducted a Geologic Assessment for the referenced Site in accordance with 30 TAC §213.5(b)(3), TCEQ requirements for regulated developments within the Edwards Aquifer Recharge Zone, and the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). Four (4) features (CD-1, MB-1, SC-1, and SC-2) were observed and found to be non-sensitive features. No sensitive features were observed on the Site.

Please note that other karst features may exist on Site, either buried or obscured from view, which may have potential for openings to the subsurface. If any additional potentially karst features are discovered during future Site activities, please do not hesitate to contact Anding Environmental for support.

5.0 REFERENCES

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Carson, Dee, 2000. Freeman Ranch Publication Series No. 4-2000 July, 2000 SOILS OF THE FREEMAN RANCH, HAYS COUNTY, TEXAS. Department of Agriculture Southwest Texas State University

Collins, E.W., 2000, Geologic map of the New Braunfels, Texas, 30 x 60 minute quadrangle—Geologic framework of an urban-growth corridor along the Edwards aquifer, south-central Texas: University of Texas, Bureau of Economic Geology Miscellaneous Map 39, 28 p., 1 sheet, scale 1: 100,000.

Clark, A.K., 2003, Geologic framework and hydrogeologic characteristics of the Edwards aquifer, Uvalde County, Texas: U.S. Geological Survey Water-Resources Investigations Report 03-4010, 17 p., 1 sheet.

Comal County Appraisal District. Property Search. <http://www.comalad.org/>
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Frost GeoSciences, 2013, Geologic Site Assessment for Regulated Activities/ Development on the Edwards Aquifer Recharge / Transition Zone –New Braunfels Christian Academy 12.17 Acres, New Braunfels, Texas

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U.S. Geological Survey. Texas Geology. <http://mrdata.usgs.gov/sgmc/tx.html>

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**GEOLOGIC ASSESSMENT
ATTACHMENT D - SITE GEOLOGIC MAPS**



Legend



Site

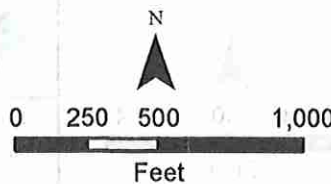
220 FM 1863
New Braunfels, Comal County, Texas

Site Location Map

Geologic Assessment
 220 FM 1863, New Braunfels, Texas



925 Lauren St.
 New Braunfels, TX 78130



TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/15/2021	ANDING	001	D-1



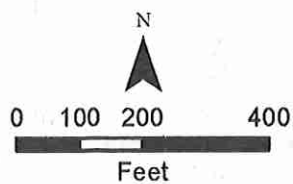
Legend

 Site

220 FM 1863
New Braunfels, Comal County, Texas

Site Aerial Map

Geologic Assessment
 220 FM 1863, New Braunfels, Texas



925 Lauren St.
 New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/15/2021	ANDING	002	D-2

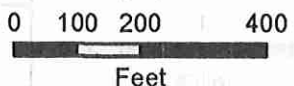


Legend

Elevation Contours 2' Intervals

 **NHD Mapped Drainage**

 **Site**



**220 FM 1863
New Braunfels, Comal County, Texas**

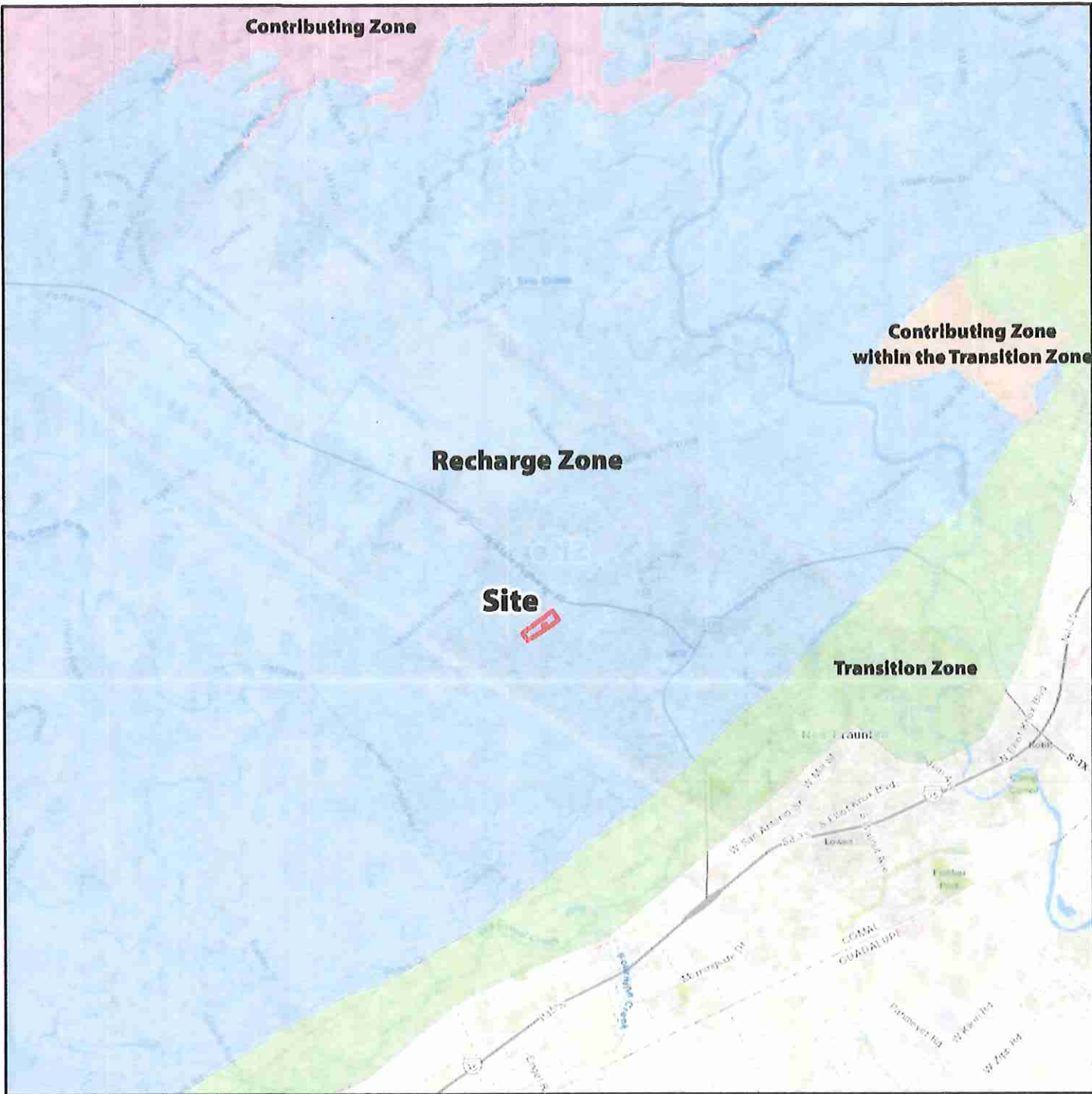
Site Topography

Geologic Assessment
220 FM 1863, New Braunfels, Texas

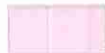



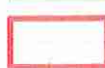


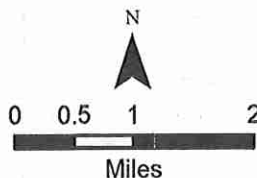
925 Lauren St.
New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/15/2021	ANDING	003	D-3



Legend

-  Edwards Aquifer Contributing Zone
-  Edwards Aquifer Contributing Zone within the Transition Zone
-  Edwards Aquifer Recharge Zone
-  Edwards Aquifer Transition Zone
-  Site



220 FM 1863
New Braunfels, Comal County, Texas

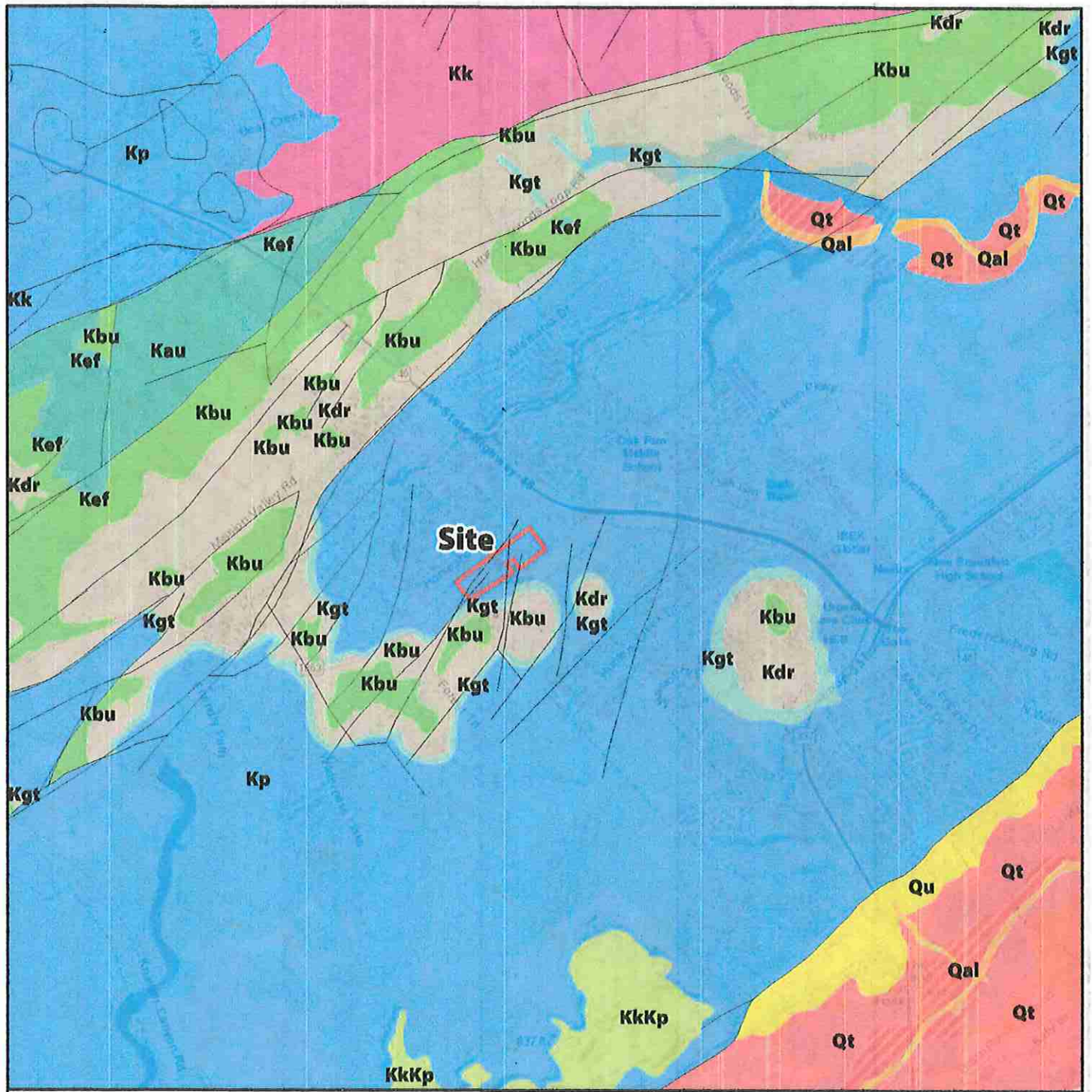
Edwards Aquifer Zone Map

Geologic Assessment
 220 FM 1863, New Braunfels, Texas



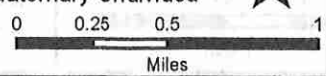
925 Lauren St.
 New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/15/2021	ANDING	004	D-4



Legend

- Site
- Kk (Kek) - Kainer
- KkKp - Kainer/Person
- Kau - Austin Chalk
- Kbu-Buda LS
- Kdr-Del Rio Clay
- Kef - Eagle Ford SH
- Kgt - Georgetown
- Kp (Kep) - Person
- Qal - Alluvium
- Qt - Terrace Deposits
- Qu - Quaternary Undivided



220 FM 1863
New Braunfels, Comal County, Texas

Regional Geology

Geologic Assessment
 220 FM 1863, New Braunfels, Texas



925 Lauren St.
 New Braunfels, TX 78130

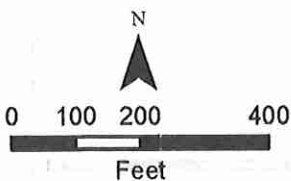
TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/15/2021	ANDING	005	D-5



Legend

- USDA Soil Type
- Site

- RUD Rumple-Comfort, rubbly association, 1% to 8% slopes
- MEC Medlin, warm-Eckrant association, 1% to 8% slopes
- DeB Denton silty clay, 1% to 3% slopes



220 FM 1863
New Braunfels, Comal County, Texas

Site Soils Map

Geologic Assessment
 220 FM 1863, New Braunfels, Texas



925 Lauren St.
 New Braunfels, TX 78130

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
20-011	12/28/2021	ANDING	003	D-6

**GEOLOGIC ASSESSMENT
ATTACHMENT E - PHOTO LOG**

Attachment E - Photo Log
Site Investigation Photos



**Site Campus Entrance
Southeastern Site Boundary**



Site Entrance



Site Eastern Corner



Northeastern Site Boundary



Site Northern Corner



**Site Northwestern Boundary
Developed Portion of Site**



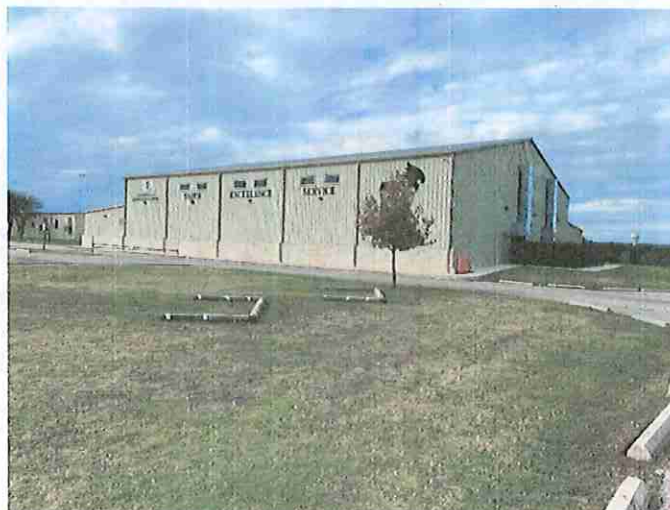
**Site Northwestern Boundary
Undeveloped Portion of Site**



Site Western Corner



Site Southern Corner



School Gymnasium



Front Parking Lot Area and Classroom Buildings



Rear of School Facilities



Athletic Fields



**Undeveloped Portion of Site
Southwest of Athletic Fields**



**Typical Cedar Thicket and Edwards Limestone
in Undeveloped Portion of Site**



**Typical Grassy Areas in Undeveloped Portion of
Site**



Dry Tributary Along Northwestern Site Boundary



Dry Tributary Exiting Northwestern Site Boundary



Southern Portion of Site with Soil Fill and Rock Debris



CD-1 – Non-Karst Closed Depressions within Manmade Berm



CD-1 – Non-Karst Closed Depression within Manmade Berm



CD-1 – Non-Karst Closed Depression within Manmade Berm



MB-1 – Manmade Feature in Bedrock Livestock Tank



MB-1 – Bedrock in Center of Livestock Tank



SC-1 – Solution Cavity



Topography and Typical Vegetation Surrounding SC-1 – Solution Cavity



SC-2 – Solution Cavity



Topography and Typical Vegetation Surrounding SC-2 – Solution Cavity



Area of S-4 Manmade Feature in Bedrock from 2005 Frost Geologic Assessment (Unable to Locate)



Area of S-5 Manmade Feature in Bedrock (Geotech Boring) from 2005 Frost Geologic Assessment (Unable to Locate)



Dry Drainage Feature S-6 Zone from 2005 Frost Geologic Assessment Facing Upstream



Ponding Water on Vuggy Limestone in Dry Drainage Feature



**Dry Drainage Feature S-6 Zone from 2005 Frost
Geologic Assessment
Facing Downstream**



**Dry Drainage Feature S-6 Zone from 2005 Frost
Geologic Assessment
Facing Downstream**



**Dry Drainage Feature S-6 Zone from 2005 Frost
Geologic Assessment
Exiting Northwestern Site Boundary**



**Area of S-7 Solution Cavity from 2005 Frost
Geologic Assessment (Unable to Locate)**



Area of S-8 Solution Cavity from 2005 Frost Geologic Assessment (Unable to Locate)



Area of S-9 Manmade Feature in Bedrock (Geotech Boring) from 2005 Frost Geologic Assessment (Unable to Locate)



Area of S-10 Manmade Feature in Bedrock (Geotech Boring) from 2005 Frost Geologic Assessment (Unable to Locate)



Area of S-102 Manmade Feature in Bedrock (Septic System) from 2013 Frost Geologic Assessment (Unable to Locate)



**RUD - Rumple-Comfort, rubbly association,
1% to 8% slopes**



**RUD - Rumple-Comfort, rubbly association,
1% to 8% slopes**

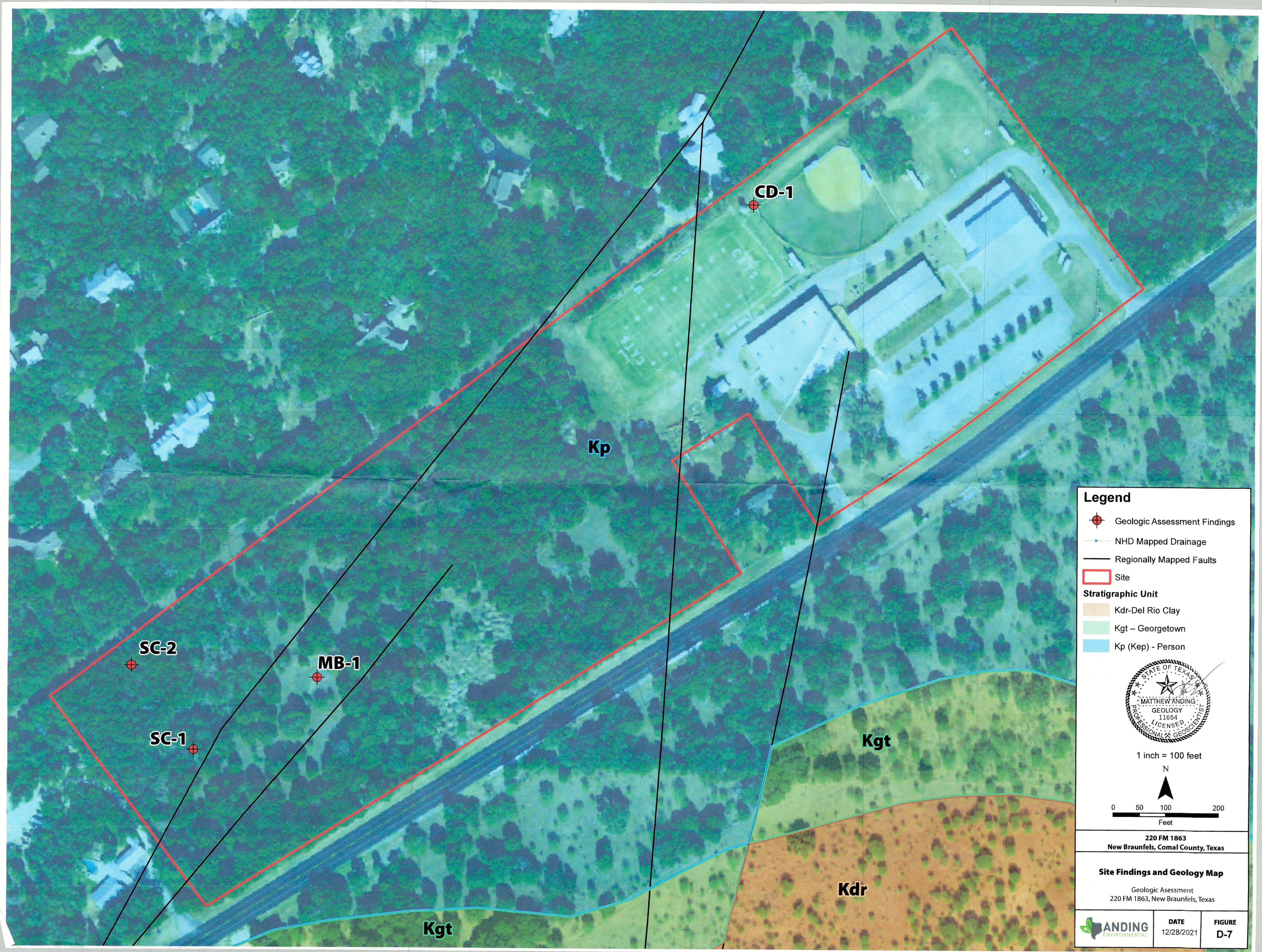


**MEC - Medlin, warm-Eckrant association,
1% to 8% slopes**










**MEC - Medlin, warm-Eckrant association,
1% to 8% slopes**

**GEOLOGIC ASSESSMENT ATTACHMENT F -
PREVIOUSLY CONDUCTED GEOLOGIC ASSESSMENTS**



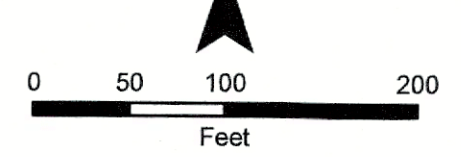
Legend

-  Geologic Assessment Findings
 -  NHD Mapped Drainage
 -  Regionally Mapped Faults
 -  Site
- Stratigraphic Unit**
-  Kdr-Del Rio Clay
 -  Kgt - Georgetown
 -  Kp (Kp) - Person



1 inch = 100 feet

N



220 FM 1863
New Braunfels, Comal County, Texas

Site Findings and Geology Map

Geologic Assessment
220 FM 1863, New Braunfels, Texas



DATE
12/28/2021

FIGURE
D-7

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

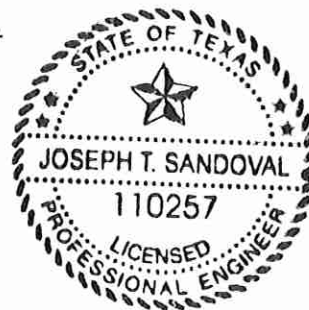
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive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

Print Name of Customer/Agent: Joseph Sandoval, P.E.

Date: 3/9/2023

Signature of Customer/Agent:

Joseph Sandoval, P.E.



Project Information

1. Current Regulated Entity Name: New Braunfels Christian Academy
Original Regulated Entity Name: New Braunfels Christian Academy
Regulated Entity Number(s) (RN): 104634530
Edwards Aquifer Protection Program ID Number(s): _____
 The applicant has not changed and the Customer Number (CN) is: 602851750
 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.

<i>WPAP Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Acres	_____	_____
Type of Development	_____	_____
Number of Residential Lots	_____	_____
Impervious Cover (acres)	_____	_____
Impervious Cover (%)	_____	_____
Permanent BMPs	_____	_____
Other	_____	_____

<i>SCS Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Linear Feet	<u>2,320</u>	<u>1,273</u>
Pipe Diameter	<u>2"</u>	<u>1.25"</u>
Other	_____	<u>347 LF 6"</u>

AST Modification	Approved Project	Proposed Modification
Summary		
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

UST Modification	Approved Project	Proposed Modification
Summary		
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.

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 12, 2006

Mr. David Pryor III
New Braunfels Christian Academy
995 Mission Hills Drive
New Braunfels, TX 78130-6677

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: New Braunfels Christian Academy; Located on the north side of FM 1863 0.5 miles west of HWY 46; New Braunfels, Texas
TYPE OF PLAN: Application for Approval of an Organized Sewage Collection System (SCS) Plan; 30 Texas Administrative Code (TAC) Chapter 213 and Chapter 317
Edwards Aquifer Protection Program File No. 2347.03; Regulated Entity No. RN104634530; Investigation No. 458308

Dear Mr. Pryor:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the organized sewage collection system plans and specifications for the referenced project submitted to this office on behalf of the New Braunfels Christian Academy by South Texas Wastewater Treatment on February 21, 2006. Final review of the SCS submittal was completed after additional material was received on May 11, 2006. As presented to the TCEQ, the construction documents were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 317. Therefore, based on the Texas Licensed Professional Engineer's concurrence of compliance, the planning materials for construction of the proposed sewage collection system 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 (2) two years from the date of this letter unless, prior to the expiration date, more than 10 percent of construction has commenced, or an extension of time has been requested.*

A site inspection was not conducted by a representative of the San Antonio Region Regional Office. The geologic assessment indicates that six features were identified on the site that are within 50 feet of the SCS. Two of the features were assessed as sensitive.

PROJECT DESCRIPTION

The proposed sewage collection system consists of 2,320 linear feet of 2-inch diameter SDR 26 PVC pipe (ASTM D2241, Class 160) and appropriate appurtenances. The proposed sewage collection system will provide disposal service for an educational development.

The proposed lift station / Septic Tank Effluent Pumping (STEP) system will consist of a 61"(H) x 99"(L) x 68"(W) pump tank and two Myers Model ME100-21, 1.0 HP effluent pumps. Each pump will have a pumping capacity of 70 g.p.m. at a TDH of 50 feet with one pump out of service. Additional equipment will include level pump controllers, pump supports and discharge piping with valves.

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

printed on recycled paper using soy-based ink

The system will be connected to existing City of New Braunfels wastewater line for conveyance to the Gruene Road Sewage Treatment Plant for treatment and disposal. The project is located within the ETJ of the City of New Braunfels and will conform with all applicable codes, ordinances, and requirements of the City of New Braunfels.

SPECIAL CONDITIONS

- I. Intentional discharges of sediment laden stormwater during construction are not allowed. If dewatering of excavated areas becomes necessary, the discharge will be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.
- II. The geologic assessment indicates that a fault exists on this project; therefore, trenching operations in the vicinity of the fault may possibly encounter sensitive features. It is emphasized that where wastewater lines must bridge faults, caverns, sinkholes, or solution features the lines shall be constructed in a manner that will maintain the structural integrity of the pipe. Also, 30 TAC §213.5(f)(2) requires that when such sensitive features are encountered, all regulated activities near the feature must be immediately suspended and the owner/developer shall immediately notify the San Antonio Regional Office. Construction may not resume in the area of the feature until the executive director has reviewed and approved the methods proposed to protect the aquifer from any potential adverse impacts.
- III. The geologic assessment revealed the existence of potentially sensitive features (e.g., voids, solution cavities, openings, fractured rock, and depressions) on the site; therefore, geologic/sensitive features may be encountered during trenching operations for the system. If features are encountered, the applicant/contractor must comply with the requirements of 30 TAC §213.5(f)(2) and Standard Condition 8 below.
- IV. The lift station must be designed and constructed to ensure that bypassing of any sewage does not occur. All lift stations must be designed to meet the requirements of 30 TAC §317.2(d) and §317.3.
- V. Upon completion of any lift station excavation, a geologist must certify that the excavation has been inspected for the presence of sensitive features. Certification that the excavation has been inspected must be submitted to the San Antonio Regional Office.

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 Construction:

2. All contractors conducting regulated activities at the project location shall be provided a copy of this notice of approval. At least one complete copy of the approved SCS plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
3. Any modification to the activities described in the referenced SCS and/or lift station application(s) 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.

Mr. David Pryor III

Page 3

May 12, 2006

4. The applicant must provide written notification of intent to commence construction. 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 and file number of the approved organized sewage collection system plan, 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 applicant is eligible for an extension.
5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved application, 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. 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.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213 and Chapter 317. The applicant shall remain responsible for the provisions and 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 conditions of this approval.
7. 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.
8. If any geologic feature (caves, solution cavities, etc.) is discovered during construction, excavation, or installation of a sewer line, 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 a plan proposed to protect the structural integrity of the pipe, 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.
9. The following records shall be maintained by the applicant and made available to the executive director upon request: the dates trenching 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 and completed.
10. Stabilization measures shall be initiated within 14 days 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. Where construction is initiated and abandoned, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

Mr. David Pryor III
Page 4
May 12, 2006

11. No part of the system shall be used as a holding tank for a pump-and-haul operation.

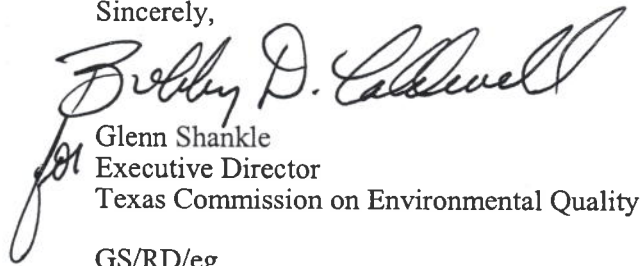
After Completion of Construction:

12. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 317 shall be submitted to the San Antonio Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the file number, and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.

13. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 317 shall be submitted to the San Antonio Regional Office. The certification should include the project name as it appeared on the approved application, the file number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.
14. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), 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.
15. This 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.

If you have any questions or require additional information, please contact Mr. Richard Deinhammer, P.E. of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4057.

Sincerely,


Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/RD/eg

fc/cc: Mr. Oscar D. Graham, P.E., South Texas Wastewater Treatment
Mr. Michael Short, P.E., City of New Braunfels
Mr. Tom Hornseth, Comal County
Mr. Robert J. Potts, Edwards Aquifer Authority
TCEQ Central Records MC 212

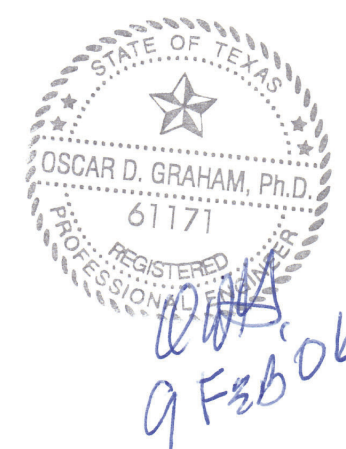
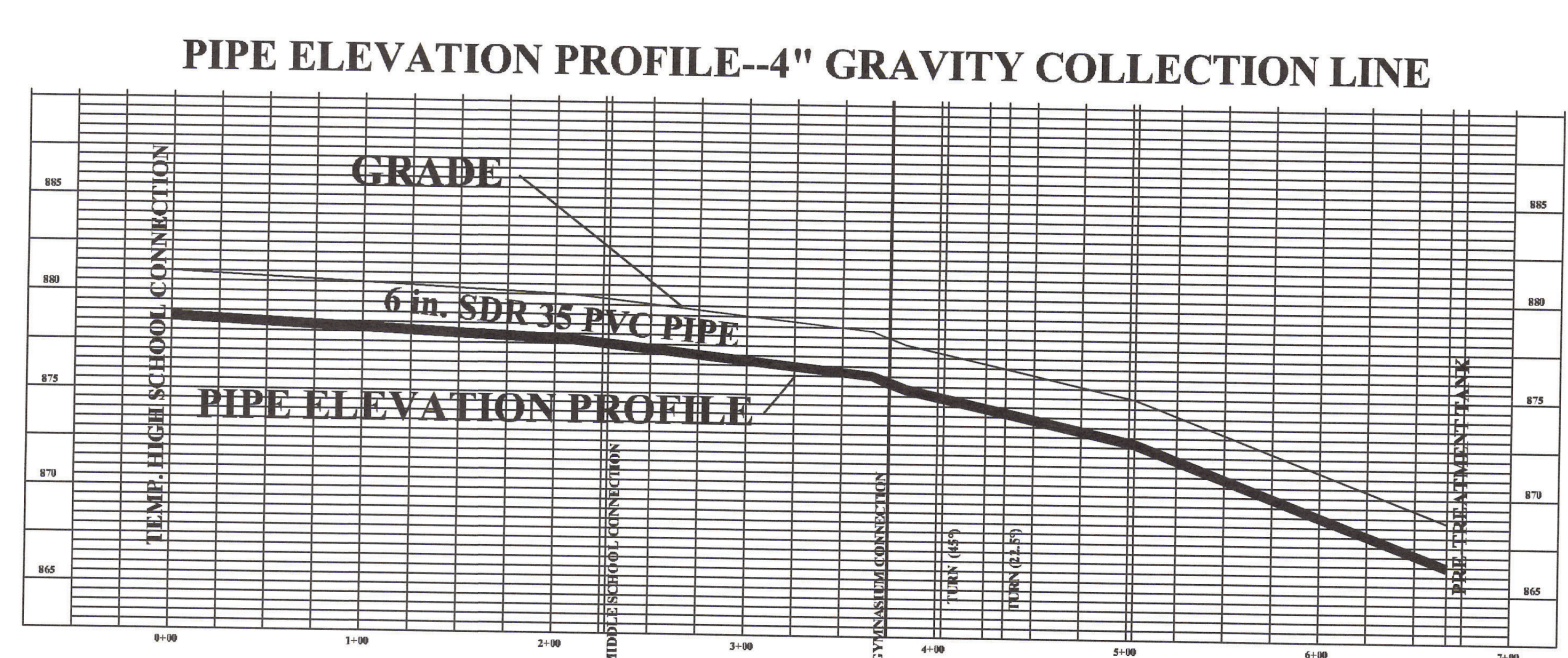
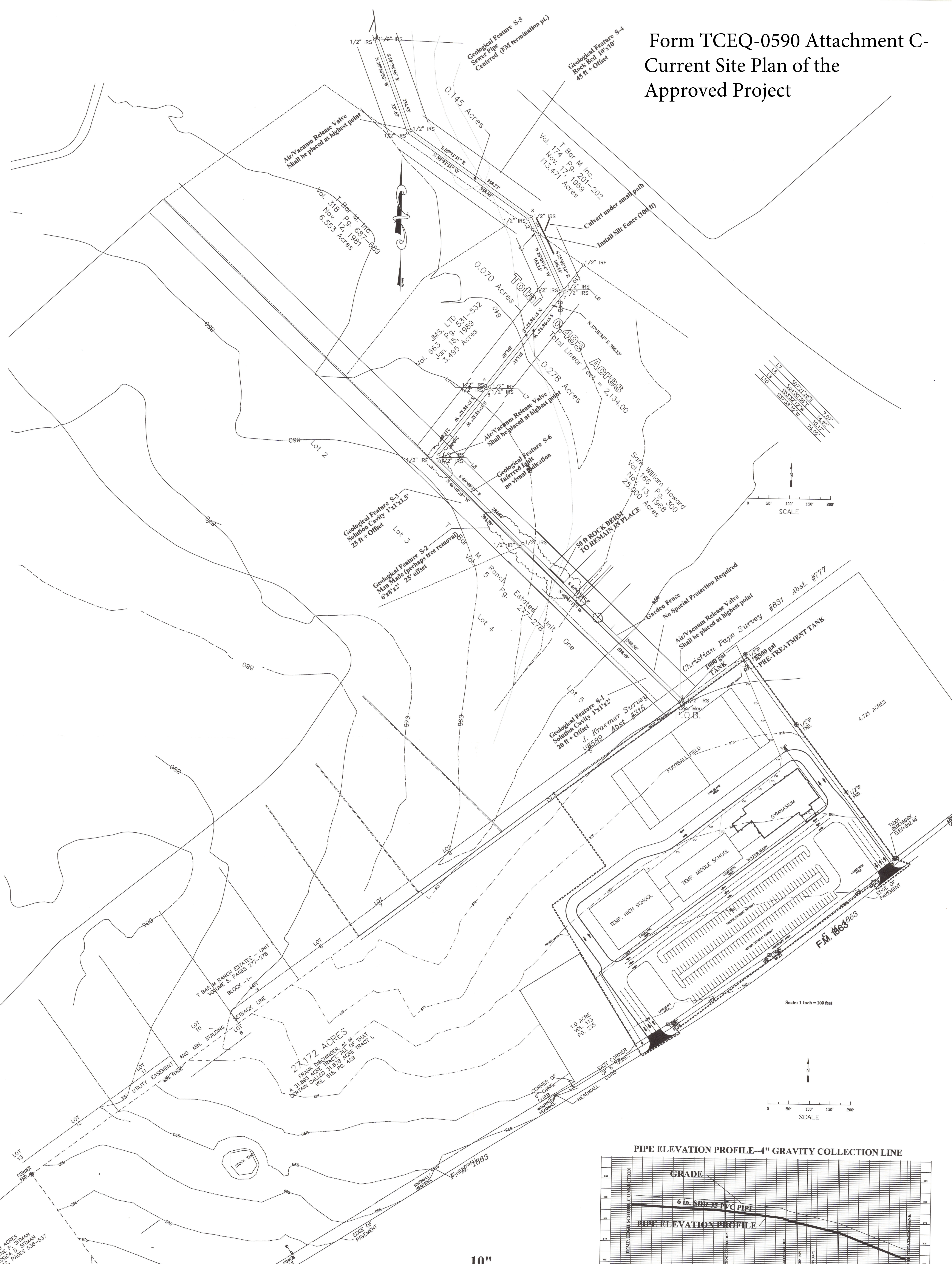
F-0590 Modification of a Previously Approved Plan

Attachment B: Narrative of Proposed Modification

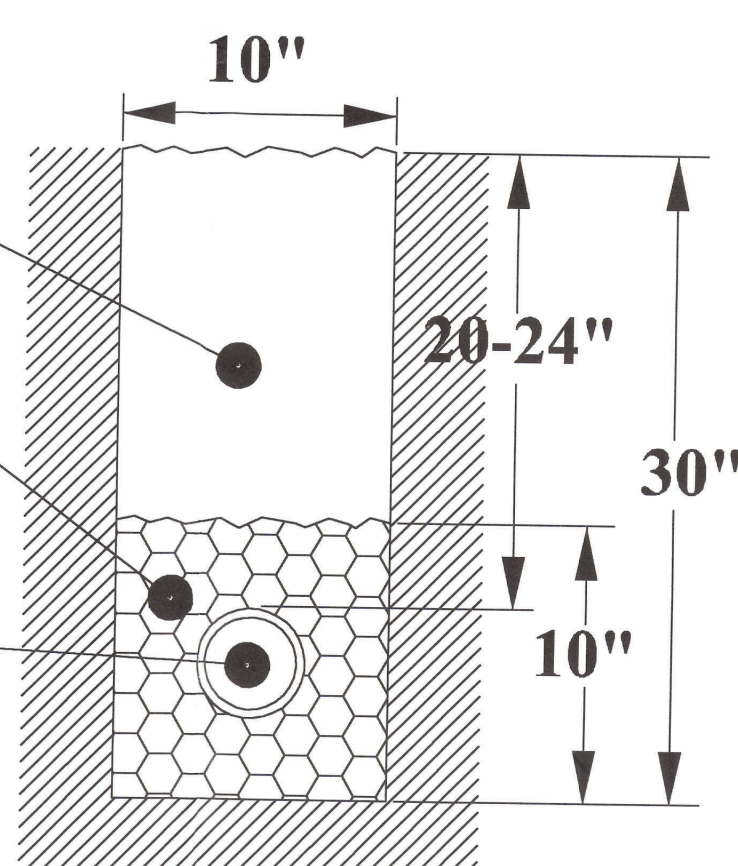
This submittal is for a proposed modification to the previously approved organized sewerage collection system for the New Braunfels Christian Academy. The original approved SCS was submitted by others in May of 2005 and approved the TCEQ on May 12, 2006. The approved sewerage design consisted of 2,320 linear feet of 2" diameter SDR 26 PVC pipe and a lift station/Septic Tank Effluent Pumping (STEP) system with a 614" (H) x 99" (L) x 68" (W) pump tank and two Myers Model ME100-21, 1.0 HP effluent pumps each. The system will maintain a pumping capacity of 70 gpm at a TDH of 50 feet with one pump out of service. The system connects to a City of New Braunfels wastewater line at a manhole for conveyance to the Gruen Road Sewage Treatment Plant for treatment and disposal.

The modification to the previously approved study includes 2 new sewer lines connecting to the existing lift station conveying effluent from the proposed fieldhouse and from new school buildings onsite. Organized sewage collection Improvements from the field house include 1,273 linear feet of 1.25" SDR 21 PVC Force Main and a grinder station with a wet well 48" diameter x 72" deep with a duplex control panel for 2 – 240v single phase 1hp positive displacement grinder pumps. The new system will maintain a pumping capacity of 8 gpm and a TDH of 182 feet with one pump out of service. Organized sewage collection Improvements from the new school buildings include 347 LF of 6" gravity PVC that will connect to an existing gravity system. Both of the proposed lines will connect to the existing lift station.

Form TCEQ-0590 Attachment C-
Current Site Plan of the
Approved Project



COMPACTED
NATIVE SOIL
SAWS GRADE
5 BEDDING
SAND
6" SDR 35 PVC



TCEQ-R13
FEB 21 2005
SAN ANTONIO

SYSTEM DESIGN
FOR
NEW BRAUNFELS CHRISTIAN ACADEMY
HIGHWAY 1863
27.172 acre TRACT OF LAND OUT OF THE
LUIS SALINAS SURVEY NO. 458, ABS 531
COMAL COUNTY, TEXAS
BY
OSCAR D GRAHAM, PE 61171
SOUTH TEXAS WASTEWATER TREATMENT
P.O. BOX 1284 BOERNE, TX 78006
830-249-8098
DRAWING NO.: 2415R1
REVISED: 7 FEB 2006
DATE: 25 OCT 2005

**Note: This Is a Regulated Construction Project
General Construction Notes**

This Sewage Collection System must be constructed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules 30 Texas Administrative Code(TAC) Ch 213.5(c), the Design Criteria for Sewage Systems 30 TAC Ch 317.1, 30 TAC ch 317.13.

All Contractors conducting regulated activities associated with this project are required to keep copies of these plans and the approval letter from TCEQ on-site.

Any modifications to any part of this design must be approved by the design engineer who will secure approval from TCEQ before proceeding with the modification. Requests for modification must be in writing.

The temporary erosion and sedimentation controls must be installed prior to initiating any other construction activity and maintained in accordance with the requirements of the construction plans. All temporary erosion and sedimentation controls must be removed when the construction area is stabilized.

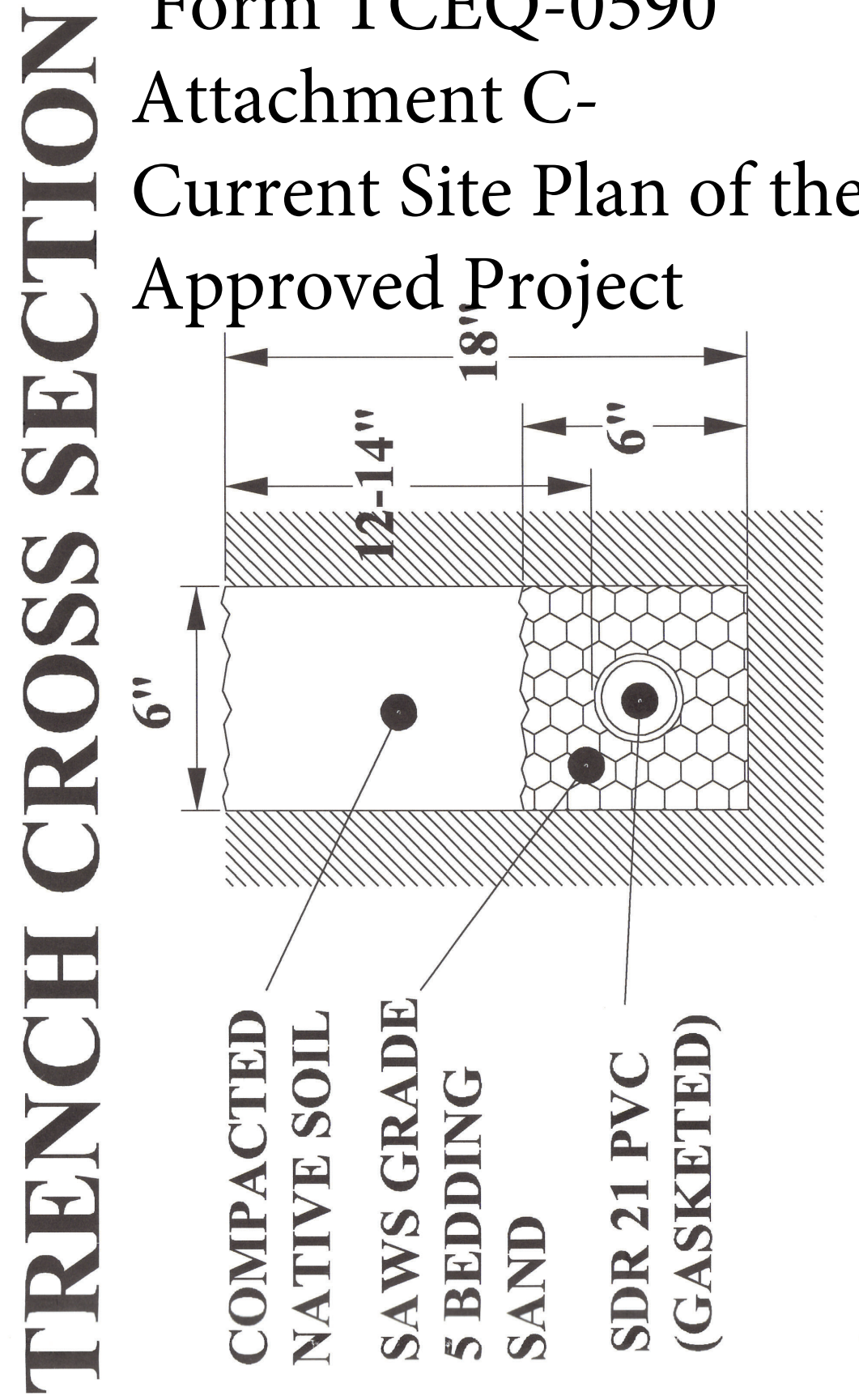
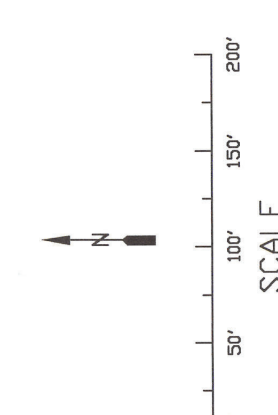
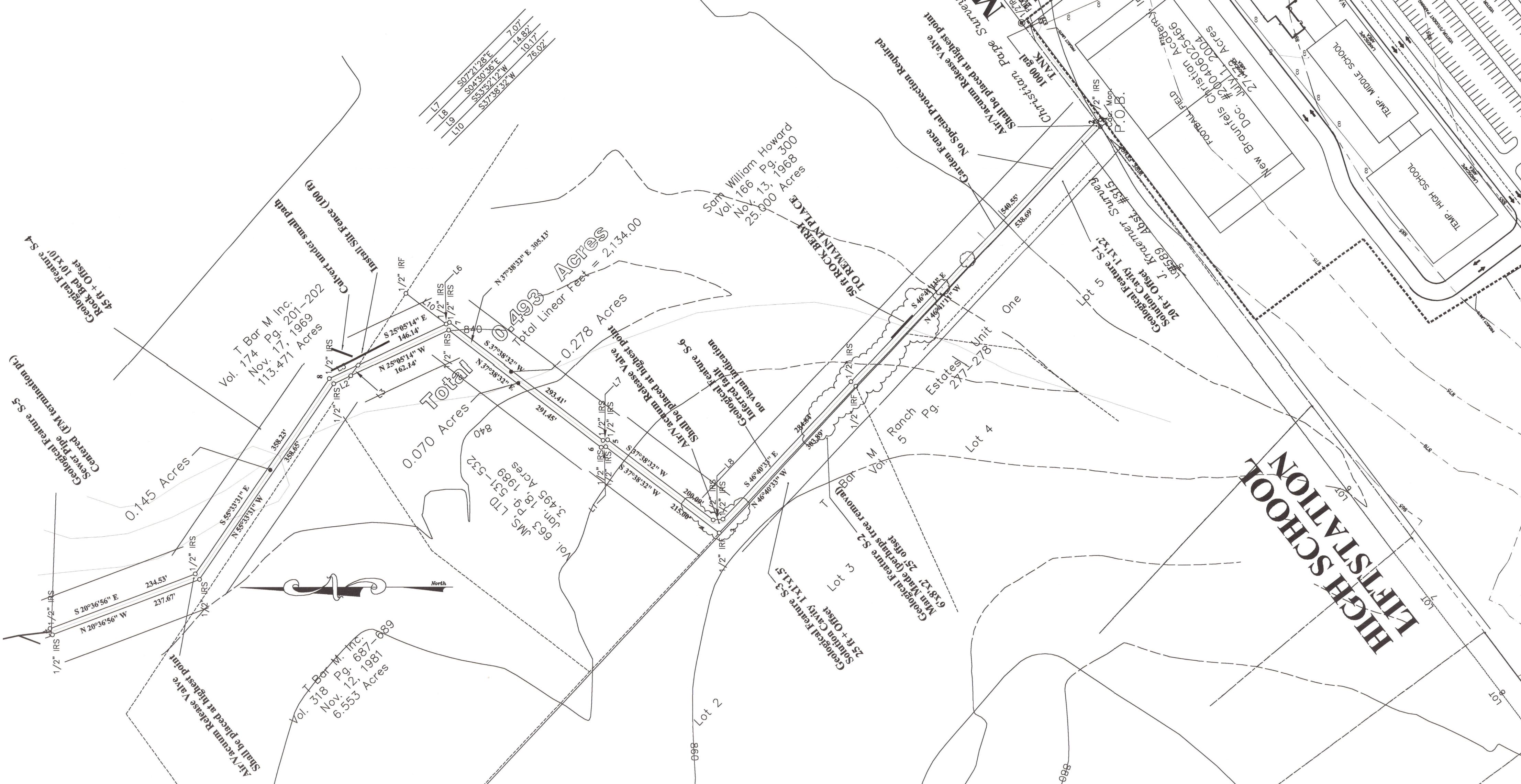
The forced main trench details showing cross section with the dimensions, pipe placement, and backfill instructions are included on these plans. All pipes joints must meet the requirements in 30 TAC ch 317.2(a)(3).

If and sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately and notification made to Oscar D. Graham, PE (210-317-1293).

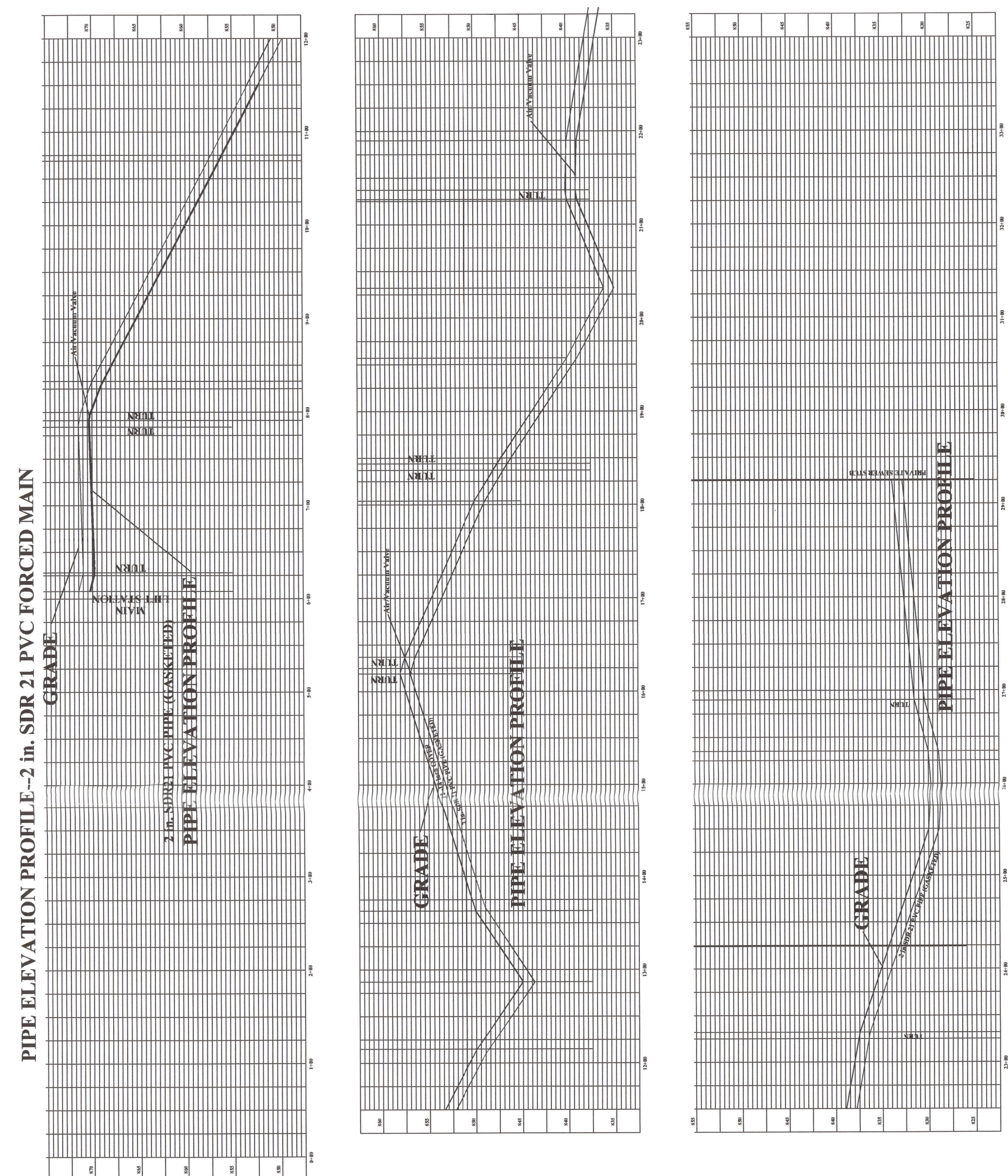
Pipe alignment deviations are authorized to comply with deviation in grade and to navigate within the easement to avoid oak trees within the easement; however, and deviation shall not exceed manufacturers specifications.

Trenching, bedding and backfill must conform with 30 TAC ch 317.2(a)(5). The bedding and backfill flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II, or III.

The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system.



- COMPACTED NATIVE SOIL
- SAWS BEDDING
- SAND
- SDR 21 PVC (GASKETED)



SYSTEM DESIGN
FOR

NEW BRAUNFELS CHRISTIAN ACADEMY
HIGHWAY 1863
27.172 acre TRACT OF LAND OUT OF THE
LUIS SALINAS SURVEY NO. 458, ABS 531
COMAL COUNTY, TEXAS

BY
OSCAR D GRAHAM, PE 61171
SOUTH TEXAS WASTEWATER TREATMENT
P.O. BOX 1284
ROBERTS, TX 78066
830-249-8098

REVISID: 7 FEB 2006
DATE: 25 OCT 2005

DRAWING NO.: 2415R1

TCEQ-R13
FEB 2 1 2006
SAN ANTONIO



Organized Sewage Collection System Application

Texas Commission on Environmental Quality

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

Regulated Entity Name: New Braunfels Christian Academy

1. **Attachment A – SCS Engineering Design Report.** This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

2. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

Contact Person: Nicholas J. Reeves

Entity: New Braunfels Christian Academy

Mailing Address: 220 FM 1863

City, State: New Braunfels, Texas

Zip: 78132

Telephone: 830-629-1821

Fax: _____

Email Address: nreeves@nbcats.org

The appropriate regional office must be informed of any changes in this information within 30 days of the change.

3. The engineer responsible for the design of this sewage collection system is:

Contact Person: Joseph Sandoval, P.E.

Texas Licensed Professional Engineer's Number: 110257

Entity: HMT Engineering & Surveying

Mailing Address: 290 S. Castell

City, State: New Braunfels, Texas

Zip: 78130

Telephone: 830-625-8555

Fax: _____

Email Address: Josephs@hmtnb.com

Project Information

4. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

- Residential: Number of single-family lots: _____
 Multi-family: Number of residential units: _____
 Commercial
 Industrial
 Off-site system (not associated with any development)
 Other: private school

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

100% Domestic 10,000 gallons/day
 _____% Industrial _____ gallons/day
 _____% Commingled _____ gallons/day
 Total gallons/day: _____

6. Existing and anticipated infiltration/inflow is 0 gallons/day. This will be addressed by: _____.

7. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

- The WPAP application for this development was approved by letter dated October 25, 2013. A copy of the approval letter is attached.
 The WPAP application for this development was submitted to the TCEQ on _____, but has not been approved.
 A WPAP application is required for an associated project, but it has not been submitted.
 There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

<i>Pipe Diameter(Inches)</i>	<i>Linear Feet (1)</i>	<i>Pipe Material (2)</i>	<i>Specifications (3)</i>
1.25	1,273	PVC SDR 21	ASTM D 2241
6	347	PVC SDR 26	ASTM D 3034

Total Linear Feet: 1,620 LF total

- (1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
 (2) Pipe Material - If PVC, state SDR value.
 (3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

9. The sewage collection system will convey the wastewater to the Gruene Road Sewage (name) Treatment Plant. The treatment facility is:

- Existing
 Proposed

10. All components of this sewage collection system will comply with:

- The City of New Braunfels standard specifications.
 Other. Specifications are attached.

11. No force main(s) and/or lift station(s) are associated with this sewage collection system.

- A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

13. There are no deviations from straight alignment in this sewage collection system without manholes.

- Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes.** A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.

For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

14. Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 - Manholes and Cleanouts

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
WWTR Line B	C9.02 Of	2+00.00	cleanout
WWTR Line B	C9.02 Of	3+44.70	cleanout
WWTR Line B	C9.02 Of	4+14.20	cleanout
WWTR Line B2	C9.02 Of	1+22.13	cleanout
WWTR Line B3	C9.02 Of	1+04.70	cleanout
	Of		
	Of		

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
	Of		
	Of		
	Of		

15. Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.
16. The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	Max. Manhole Spacing (feet)
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

- Attachment C – Justification for Variance from Maximum Manhole Spacing.** The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.
17. All manholes will be monolithic, cast-in-place concrete.
- The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

18. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 50'.
19. The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
20. Lateral stub-outs:
- The location of all lateral stub-outs are shown and labeled.
- No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

- The entire water distribution system for this project is shown and labeled.
- If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
- There will be no water lines associated with this project.

22. 100-year floodplain:

- After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
- After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

- After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
- After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

- 24. Legal boundaries of the site are shown.
- 25. The ***final plans and technical specifications*** are submitted for the TCEQ’s review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

26. All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.
- There will be no water line crossings.
- There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

<i>Line</i>	<i>Station or Closest Point</i>	<i>Crossing or Parallel</i>	<i>Horizontal Separation Distance</i>	<i>Vertical Separation Distance</i>
WWTR LN B	1+17.48	Crossing		One (1') foot
WWTR LN B	4+01.99	Crossing		One (1') foot

27. Vented Manholes:

- No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
- A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
- A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
- A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 - Vented Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

28. Drop manholes:

- There are no drop manholes associated with this project.
- Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

29. Sewer line stub-outs (For proposed extensions):

- The placement and markings of all sewer line stub-outs are shown and labeled.
- No sewer line stub-outs are to be installed during the construction of this sewage collection system.

30. Lateral stub-outs (For proposed private service connections):

- The placement and markings of all lateral stub-outs are shown and labeled.
- No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

- Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

32. Maximum flow velocity/slopes (From Appendix A)

- Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
- Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

<i>Line</i>	<i>Profile Sheet</i>	<i>Station to Station</i>	<i>FPS</i>	<i>% Slope</i>	<i>Erosion/Shock Protection</i>

33. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

- Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.
- Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.
- N/A

Administrative Information

34. The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.
35. Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

<i>Standard Details</i>	<i>Shown on Sheet</i>
Lateral stub-out marking [Required]	C9.02 of
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) [Required]	C9.02 of
Alternate method of joining lateral to existing SCS line for potential future connections [Required]	N/A of
Typical trench cross-sections [Required]	C9.02 of
Bolted manholes [Required]	N/A of
Sewer Service lateral standard details [Required]	C9.02 of
Clean-out at end of line [Required, if used]	C9.02 of
Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe >10 fps]	N/A of
Detail showing Wastewater Line/Water Line Crossing [Required, if crossings are proposed]	N/A of
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [Required, if Flexible Pipe is used]	C9.02 of

<i>Standard Details</i>	<i>Shown on Sheet</i>
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	N/A of

36. All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.
37. All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
- Survey staking was completed on this date: _____
38. 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.
39. Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

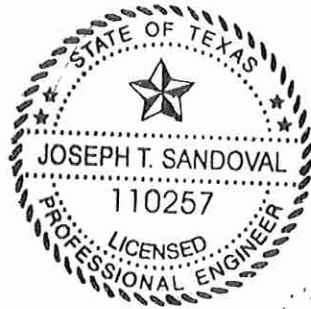
Signature

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 **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Joseph Sandoval, P.E

Date: 03/13/2023

Place engineer's seal here:



Signature of Licensed Professional Engineer:

Joseph Sandoval, P.E.
3/13/2023

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 - Slope Velocity

Pipe Diameter(Inches)	% Slope required for minimum flow velocity of 2.0 fps	% Slope which produces flow velocity of 10.0 fps
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

*For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)

n = Manning's roughness coefficient (0.013)

Rh = hydraulic radius (ft)

S = slope (ft/ft)

NBCA Expansion and Sports Complex

A distinguished project by:

NBCA

Job No. 318.003

SCS Force Main Engineering Design Report Attachment A



New Braunfels, Texas
March 2023

Joseph Sandoval, P.E.
March 13, 2023



Prepared by:

290 S. Castell Avenue, Ste. 100
New Braunfels, TX 78130
(830) 625-8555
TBPE-FIRM F-10961
TBPLS FIRM 10153600

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This Engineering Design Report has been prepared to comply with the Texas Commission on Environmental Quality's Design Criteria for Domestic Wastewater Systems (30 TAC 217), and regulations over the Edwards Aquifer Recharge Zone (30 TAC 213). Please note that throughout this application, the more stringent of New Braunfels Utilities or TCEQ regulations shall apply.

1.0 Project Information

HMT Engineering & Surveying has been retained by New Braunfels Christian Academy(NBCA) to provide professional engineering services for the planned building expansion and new sports fields at their existing campus. NBCA covers 27.135 acre and includes the construction of a gravity wastewater line, drainage improvements, water line, and grading. The project is located off FM 1863, in the City of New Braunfels, Texas. The site is located entirely over the Edwards Aquifer Recharge Zone. The New Braunfels Christian Academy Water Pollution Abatement Plan (WPAP) will be submitted to Texas Commission on Environmental Quality (TCEQ) with this Sewage Collection System (SCS) submittal. This development is within the limits of the City of New Braunfels. The property is not within the 100-year floodplain, according to FEMA Flood Insurance Rate Map (FIRM) Number 48091C0435F date September 2, 2009.

The sewer collection system that is currently in place was reviewed and approved by TCEQ in 2008 to serve 500 students onsite and considered a max flow of 10,000 gpd. A private sewer service will be extended from the existing onsite sewer holding tank and pump station to the proposed field house. Additionally, a 6"pvc gravity system will be connected to an existing 6" gravity system that currently serves the existing school buildings to serve proposed new buildings on the NBCA expansion. A Sewage Collection System (SCS) modification approval will be obtained for this proposed private sewer service extension. Wastewater service is provided by New Braunfels Utilities (NBU) with conveyance to the existing Gruene Wastewater Treatment Plant.

The New Braunfels Christian Academy SCS application proposes the construction of approximately 1,273 linear feet (LF) of 1.25-inch PVC, SDR 21, ASTM D 2241, forced sewer main and approximately 347 LF of 6" PVC, SDR 26, ASTM D-2241 gravity sewer line. Regulated activities proposed include excavation, construction of sewer mains with appurtenances, manholes, backfill, and compaction. A non-karst closed depression was identified in the area near to the proposed sewer alignment. Due to the narrow and shallow trench associated with the construction of this small forced main, the area of the closed depression will not be disturbed.

Wastewater will be disposed of by conveyance to the existing Gruene Wastewater Treatment Plant owned by New Braunfels Utilities. Potable water service will also be provided by New Braunfels Utilities. This report addresses the wastewater design of the project's proposed conditions and shows compliance with Texas Commission on Environmental Quality Technical Guidance Manual.

Please refer to sheets C9.00, C9.01 and C9.02 for details of the proposed additions to the school sewage collection system. This sewer system is designed to have a minimum structural life of 50 years.

Safety considerations are the responsibility of the contractor. Safety protection shall be accomplished in accordance with the most recent requirements of the Occupational Safety and Health Administration (OSHA) Standards and Interpretations.

2.0 Flood Considerations

The property is not within the 100-year floodplain, according to FEMA Flood Insurance Rate Map (FIRM) Number 48091C0435F date September 2, 2009

3.0 Wastewater Flow Calculations

Wastewater calculations were carried out for each of the two sections of the sewage collection system.

For the fieldhouse, max building occupancy for the sports complex was assumed to be 127 occupants. The max occupancy is based on 52 occupants in the home locker room, 40 occupants in the visitor/weight room, 6 occupants in the concession stand, 27 occupants in restrooms, and 2 occupants in the officials' dressing room. Using a generous effluent flowrate of 20 gpd per person gives a total design flow of 2,540 gpd. An 8-hour peak flow was assumed based on 2 hours before school, 2 hours after and then 4 hours use during games etc. The total design flow of 2,540 gpd divided by 8-hour peak gives about 318 gallons per hour equivalent to 5.5 gpm.

$$\begin{aligned} \text{Peak Dry Flow} = Q_{pd} &= 127 \text{ occupants} * 20 \text{ gpd/occupant} = 2,540 \text{ gpd} \\ &= 2,540 \text{ gpd}/8\text{hr}/60\text{minutes per hour} = 5.5 \text{ gpm} \end{aligned}$$

Capacity Calculation for Proposed Gravity System

For the new school buildings, the capacity of the proposed 6" gravity system was calculated and determined to be more than sufficient.

Please note that capacities are determined using Manning's equation for pipes flowing full with an "n" value of 0.013. A reference for Manning's Equation can be found in "The Uni-Bell Handbook of PVC Pipe: Design and Construction".

Characteristics of 6" ASTM D2241, SDR 26, PVC Sewer Pipe:

Nominal Size 6"

Outer Diameter (D_o) = 6.625"

Minimum Wall Thickness (t) = 0.255"

Inner Diameter (D_i) 6.12"

Manning's Equation:

$$Q = (k/n) (A)(R^{2/3}) (S^{1/2})$$

$$V = Q/A$$

Where:

Q = Discharge (cfs)

k = Constant [(1.49 ft^{1/3})/sec.]

n = Manning's roughness coefficient (unitless)

A = Flow area (ft²)

R = Hydraulic Radius (ft) = A/P = Cross sectional area of flow (ft²)/Wetted perimeter (ft.)

S = Slope (ft/ft)

V = Velocity of flow (ft/s)

$n = 0.013$ [as required by 30 TAC 213.53 A(i)]

Calculations for 6" ASTM D2241, SDR 26, PVC Sewer Pipe:

$$A = \pi(D_i^2)/4 = \pi(6.12\text{in})^2/4 = 29.42 \text{ in}^2 = 0.20 \text{ ft}^2$$

$$P = \pi (D_i) = \pi(6.12\text{in}) = 19.23 \text{ in} = 1.60 \text{ ft}$$

$$R = A/P = 0.20\text{ft}^2 / 1.60 \text{ ft.} = 0.125\text{ft}$$

$$S = 0.005$$

$$Q = [(1.49\text{ft}^{1/3}/\text{sec.})/0.013](0.20\text{ft}^2)(0.125\text{ft})^{2/3}(0.005)^{1/2}$$

$$Q = 0.41 \text{ cfs} = 153.23 \text{ gpm} = 220,651.2 \text{ gpd} = Q_{\text{full}}$$

$$V = 0.41 \text{ cfs}/0.20\text{ft}^2 = \mathbf{2.05 \text{ ft/s}}$$

Nominal Main Size (in)	Outer Diameter (in)	Minimum Slope	Area (ft²)	Hydraulic Radius (A/P)	S	Q-Full (cfs)	Velocity (ft/s)
6	6.625	0.5	0.20	0.125	0.005	0.41	2.05

Conclusion

A proposed 6" pipe with a minimum slope of 0.5% has sufficient capacity to convey the Peak Flows for the entire development. We therefore believe that the proposed sewer design is more than adequate to convey the projected average and peak flows.

4.0 Pump Characteristics and Calculations

The project proposes to transport effluent from the NBCA Sports Complex from the 48" x 72" wet well, through a duplex system of grinder pumps and through a 1.25" PVC force main. The proposed system has a capacity of 5,000 gpd which will be more than sufficient. A single pump will pump 8-14 gpm up to 185 tdh (see the e|one SPD Pump Performance Curve provided as Figure 1.) The pumps run approximately 20 times a day for 1 minute each cycle. The pumps will alternate every 24 hours. In the case that the alarm level is triggered due to extra flow entering the tank, the second pump will automatically start until the effluent is pumped down to a normal level.

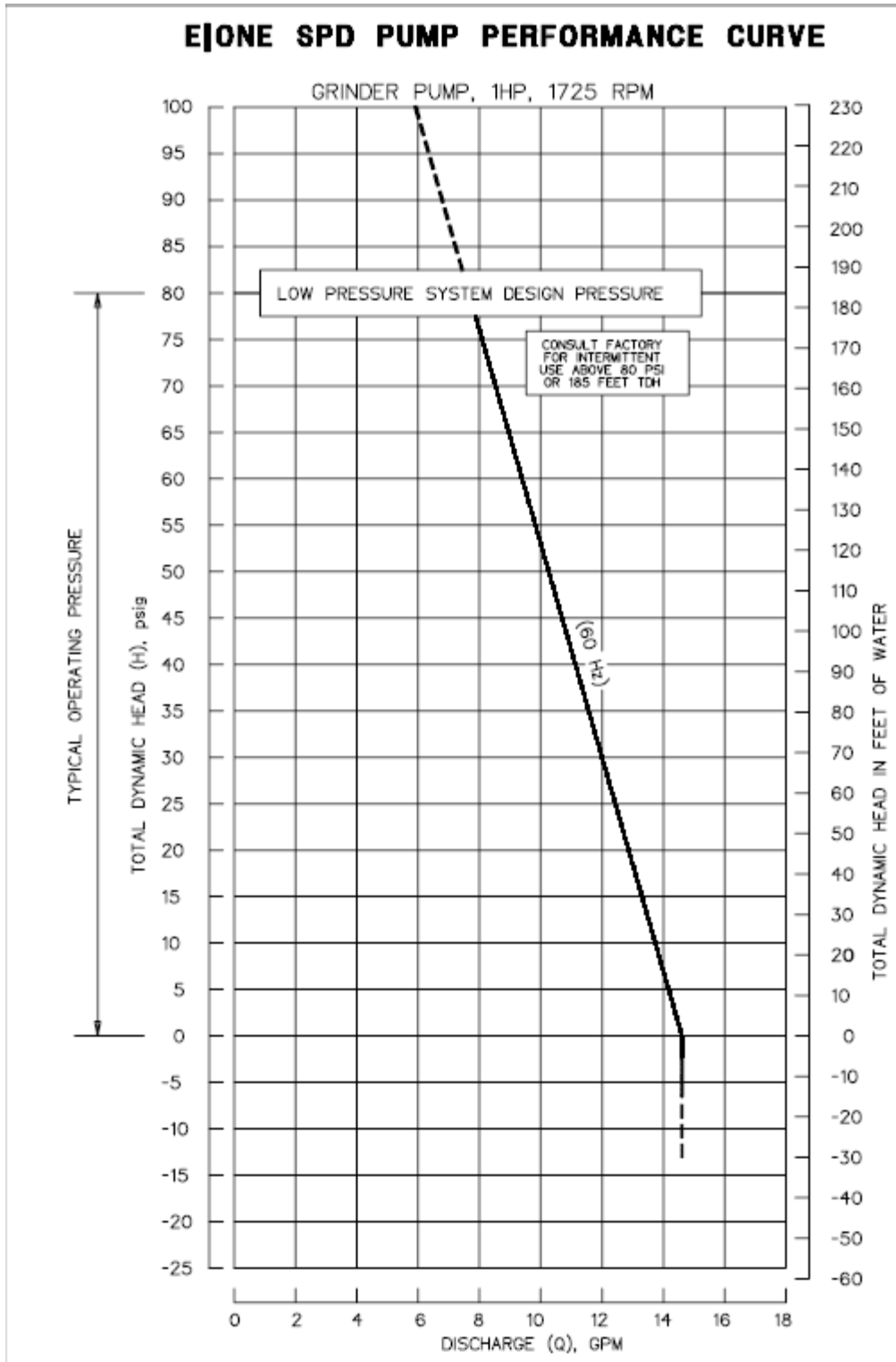
Head Loss through the system due to the length of pipe and bends is calculated using the Hazen-Williams formula for head loss in psi per foot of pipe. The roughness value "C" used for calculations is 150. The internal diameter for the 1.25" force main is 1.502 inches.

$$P = \frac{4.52Q^{1.85}}{C^{1.85}d^{4.87}}$$

P = friction loss per foot of pipe (psi)
 Q = flow rate (gpm)
 d = internal pipe diameter (inches)
 C = Hazen-Williams coefficient

<p>Headloss in Pipe per foot with pump running at 8 gpm</p> <p>P = <u>4.52(8 gpm)</u>^{1.852} =150^{1.852}(1.502")^{4.87} = 0.002754 (psi)</p>	<p>Headloss in Pipe per foot with pump running at 14 gpm</p> <p>P = <u>4.52(14 gpm)</u>^{1.852} =150^{1.852}(1.502")^{4.87} = 0.007763 (psi)</p>
--	--

Figure 1: Pump Capacity Curve



5.0 Wet Well

The wet well specified to be installed with this project is proposed to be 48” in diameter and 72” deep. The well will provide 94 gallons of storage at 1-foot of depth, 133 gallons or 17” will trigger the pump system to start. At 196 gallons in the well, the alarm will sound and the second pump will start to pump until the level is reduced enough for normal operations.

The bottom of the wet well shall be installed with a minimum slope to the intake of 2:1. The pumps in this station are 1 Hp pumps with a cycle time of 1 mi

Wet Well Detention Time

$$T_d = t_f + t_e$$

Where: $t_f = (v) \div (i) =$ time to fill the wet well in minutes = 252 gallons/ 5.5 gpm = 46 min.

$$t_e = (v) \div (q - i) = \text{time to empty the wet well in minutes} = 252 \text{ gallons} / (14 - 5.5) \text{ gpm} = 30 \text{ min.}$$

$V =$ volume of wet well between pump “on” and “off” elevations in gallons = 252 gal.

$q =$ Pump capacity in gpm = 14 gpm

$i =$ flow into the station corresponding to the max dry weather flow in gpm.= 5.5 gpm

$$T_d = t_f + t_e = 46 \text{ min.} - 30 \text{ min.} = 16 \text{ minutes}$$

Odor control shall be provided at the wet well.

6.0 Force Main

The range in the velocity in the 1.25" diameter SDR 21 PVC force main is calculated using the Hazen-Williams flow formula and assuming the pipe flows full. The discharge range of the pump, 8-14 gpm. The effective inside diameter of the pipe is 1.502 inches or 0.125 feet. The proposed slopes in the system range from 0.35 % to 8%.

Hazen-Williams flow formula
$$V = 1.318 C (R_h)^{0.63}(S)^{0.54}$$

Where: V = flow velocity , ft/s

C = flow coefficient

R_h = hydraulic radius, ft (for pipe flowing full = 0.25 D_i)

S =hydraulic slope, ft/ft

D_i = pipe inside diameter

Minimum Slope = 1.2% or 0.012 ft/ft

Maximum Slope = 17.9% Or 0.1791 ft/ft

$$V = 1.318 (150) (0.031)^{0.63}(S)^{0.54}$$

$$V = 1.318 (150) (0.031)^{0.63}(S)^{0.54}$$

$$V = 1.318 (150) (0.031)^{0.63}(0.012)^{0.54}$$

$$V = 1.318 (150) (0.031)^{0.63}(0.1791)^{0.54}$$

$$\underline{V = 2.05 \text{ fps}}$$

$$\underline{V = 8.76 \text{ fps}}$$

The maximum time required to flush the force main is calculated using an average dry weather flow rate of 1.61 gpm (based on the peak of 5.5 gpm provided by occupants)

$$T_{\text{flush}} = (t_f + t_c) \times (\text{Force Main Length}) / [(t_c/2)(V_m)(60 \text{ sec/min})]$$

$$T_{\text{flush}} = (46 \text{ min.} + 30 \text{ min}) \times (1,217') / [(38 \text{ min.} / 2)(2.05 \text{ fps})(60 \text{ sec/min})] = \mathbf{39.6 \text{ minutes}}$$

7.0 Security and Emergency Provisions

Full specifications for the Grinder Pump Station are included with this report. The specifications completely address security and emergency provisions.

8.0 General Structural Components

Project Materials (Pipe and Joints):

Nominal Pipe Diameter (in)	Linear Feet	Pipe Material	National Standard Specification for Pipe Material	National Standard for Pipe Joints
1.25	1,273	PVC SDR 21	ASTM D2241	ASTM 2466

Project Materials (Bedding):

The specified bedding will comply with ASTM D3034-II Class I, II or III for materials and densification. A minimum of 6 inches of bedding is required for all pipe.

The following are the minimum and maximum slopes designed for this project for each pipe diameter:

Pipe Diameter: 1.25" Min. Slope: 1.2% Max. Slope: 17.9%

Pipe Joints

Bends in the horizontal or vertical alignment of the pipe will be accomplished using manufactured bend fittings as specified on the plan. All pipe joints shall be fully restrained.

Backfill

Note: The backfill will be free of stones greater than 6 inches in diameter and free of organic or any other unstable material.

Trenching

Note: The trench width will be minimized while still allowing adequate width for proper compaction of backfill, and while still ensuring that at least 6 inches of backfill exists below and on each side of the pipe. The trench walls will be vertical to at least one foot above the pipe.

Trenching will occur over the Recharge Zone and will comply with 30 TAC 213.5. Trench detail is included with the construction set.

Minimum and Maximum Trench Width

Based on 30 TAC 217.54:

Pipe Diameter: **1.125" (200psi)** Min. Trench Width: **20"** Max. Trench Width: **36"**

Corrosion Prevention

Proposed collection system components (pipes, manholes, etc.) will not be susceptible to deterioration through the corrosive effects of an anaerobic sewage environment. The interior of the air release manholes, however, are to be coated with a New Braunfels Utilities approved sewer structural coating per New Braunfels Water & Wastewater Design Criteria. The epoxy coating on the interior walls of the manhole provide interior corrosion protection.

Reduction of Inflow

Connection of storm water or roof drains to the sewage collection system is prohibited in accordance with 30 TAC 217.55(j)(6).

TCEQ FORM 0582

Attachment B – Justification and Calculations for deviation in straight alignment without manholes

The proposed small forced main is constructed with more flexible pipe and fittings. This design reduces construction costs and trench depth can be adjusted to the finished ground grade.

Attachment C – Justification for variance from maximum manhole spacing

The small pipes proposed in this pressure system do not require manholes

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

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY COUNTY ENGINEER

Protecting Texas by Reducing and Preventing Pollution

October 25, 2013

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

Re: Edwards Aquifer, Comal County

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

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

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

Dear Mr. Pipken:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of New Braunfels Christian Academy on August 14, 2013. Final review of the WPAP was completed after additional material was received on September 25 and 30, 2013. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

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

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 12.17 acres. It will include the reconfiguration of the previously approved gymnasium building and construction of an all natural grass sports field. The impervious cover will be 4.39 acres (36.07 percent). Project wastewater will be disposed of by conveyance to the existing Gruene Wastewater Treatment Plant owned by New Braunfels Utilities.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one irrigation/retention basin and existing vegetative filter strips, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 3,582.24 pounds of TSS generated from the 4.39 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project. The table provided below provides the characteristics of the drainage areas with impervious cover and the Permanent Best Management Practices (PBMP).

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

GEOLOGY

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

Mr. Eric Pipken
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October 25, 2013

SPECIAL CONDITIONS

COUNTY ENGINEER

- I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated June 9, 2006.
- II. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.
- III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

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

9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

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

After Completion of Construction:

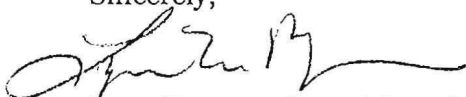
18. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

Mr. Eric Pipken
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October 25, 2013

19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

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

Sincerely,



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

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COUNTY ENGINEER

LMB/MI/eg

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

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

Lift Station/Force Main System Application

Texas Commission on Environmental Quality

for Regulated Activities On the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c)(3)(B)and(c), 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.

Regulated Entity Name: New Braunfels Christian Academy

Customer Information

(If different than customer information provided on core data form)

1. The person(s) responsible for providing the engineering certification to the TCEQ pursuant to 30 TAC §213.5(f)(2)(C) during construction and 30 TAC §213.5 (c)(3)(D) upon completion of construction is:

Contact Person: Nicholas J. Reeves

Entity: New Braunfels Christian Academy

Mailing Address: 220 FM 1863

City, State: New Braunfels, Texas

Zip: 78132

Telephone: 830-629-1821

Fax: _____

Email Address: nreeves@nbcctx.org

2. The engineer responsible for the design of this lift station and force main:

Contact Person: Joseph Sandoval, P.E.

Entity: HMT Engineering and Surveying

Mailing Address: 290 S. Castell

City, State: New Braunfels, Texas

Zip: 78130

Telephone: 830-625-8555

Fax: _____

Email Address: Josephs@hmtnb.com

Texas Licensed Professional Engineer's Serial Number: 110257

Project Information

3. This project is for the construction or replacement of:

Lift Station only.

- Lift Station and Force Main system.
 - Lift Station, Force Main, and Gravity system.
4. The sewage collection system will convey the wastewater to the Gruene Road Sewage (name) Treatment Plant. The treatment facility is:
- Existing
 - Proposed
5. All components of this lift station/force main system will comply with:
- The City of New Braunfels standard specifications.
 - Other. Specifications are attached.

Site Plan Requirements

Items 6-14 must be included on the Site Plan.

6. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 50'.
7. Lift station/force main system layout meets all requirements of 30 TAC Chapter 217.
8. Geologic or Manmade Features:
- No geologic or manmade features were identified in the Geologic Assessment.
 - All geologic or manmade features identified in the Geologic Assessment (caves, solution openings, sinkholes, fractures, joints, porous zones, etc.) which exist at the site of the proposed lift station and along the path(s) or within **50 feet of each side** of a proposed force main line are shown on the Site Plan and are listed in the table below. Designs used to protect the integrity of the sewer line crossing each feature are described and labeled on the attached page. A detailed design drawing for each feature is shown on Plan Sheet _____ of _____.
 - No Geologic Assessment is required for this project.

Table 1 - Geologic or Manmade Features

<i>Line</i>	<i>Station to Station</i>	<i>Type of Feature</i>
1.25" Force Main	6+00 to 7+00	Non-Karst Closed Depression
	to	
	to	
	to	
	to	
	to	
	to	
	to	

9. Existing topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).
10. Finished topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).
- Finished topographic contours will not differ from the existing topographic configuration and are not shown.

11. 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) source(s): FEMA FIRM panel Number 48091C0430F effective 09/02/2009

12. 5-year floodplain:

- After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above sewer lines.)
- After construction is complete, all sections of the force main located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 2 - 5-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station to Station</i>
	of	to
	of	to
	of	to
	of	to

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

If applicable, this must agree with Item No. 15 on the Geologic Assessment Form.

- 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 plugged.
- The wells are not in use and will be properly plugged.
- The wells are in use and comply with 16 TAC Chapter 76.

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

14. Legal boundaries of the site are shown.

Plan and Profile Sheets

The construction drawings and technical specifications will not be considered for review unless they are the **final plans and technical specifications** which will be used by the contractor for bidding and construction.

Items 15 – 18 must be included on the Plan and Profile sheets.

15. The equipment installation construction plans must have a minimum scale of 1" = 10'.
Plan sheet scale: 1" = _____ '.
16. Locations, descriptions and elevations of all required equipment and piping for the lift station and force main are shown and labeled.
17. Air Release/Vacuum Valves will be provided at all peaks in elevation of the proposed force main. These locations are listed in the table below and labeled on the appropriate plan and profile sheets.

Table 3 - Air Release/Vacuum Valves

<i>Line</i>	<i>Station</i>	<i>Sheet</i>
		of
		of
		of
		of
		of
		of

18. The **final plans and technical specifications** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.
19. **Attachment A - Engineering Design Report.** An engineering design report with the following required items is attached:
- The report is dated, signed, and sealed by a Texas Licensed Professional Engineer.
 - Calculations for sizing system.
 - Pump head calculations, including, but not limited to, system head and pump capacity curves, head loss calculations, and minimum and maximum static head C values for normal and peak operational conditions.
 - 100-year and 25-year flood considerations.
 - Total lift station pumping capacity with the largest pump out of service.
 - Type of pumps, including standby units.
 - Type of pump controllers, including standby air supply for bubbler controllers, as applicable.

- Pump cycle time.
- Type of wet well ventilation; include number of air changes for mechanical ventilation.
- Minimum and maximum flow velocities for the force main.
- Lift station security.
- Lift station emergency provisions and reliability.

Administrative Information

- 20. Upon completion of the wet well excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features and submit the signed, sealed, and dated certification to the appropriate regional office.
- 21. The TCEQ Lift Stations and Force Mains General Construction Notes (TCEQ-0591) are included on the General Notes Sheet of the Final Construction Plans for this lift station and/or force main system.
- 22. 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.
- 23. Any modification of this lift station/force main system application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

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 **Lift Station/Force Main System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c)(3)(C) and 30 TAC Chapter 217, and prepared by:

Print Name of Licensed Professional Engineer: Joseph Sandoval, P.E.

Place engineer's seal here:

Date: March 13, 2023

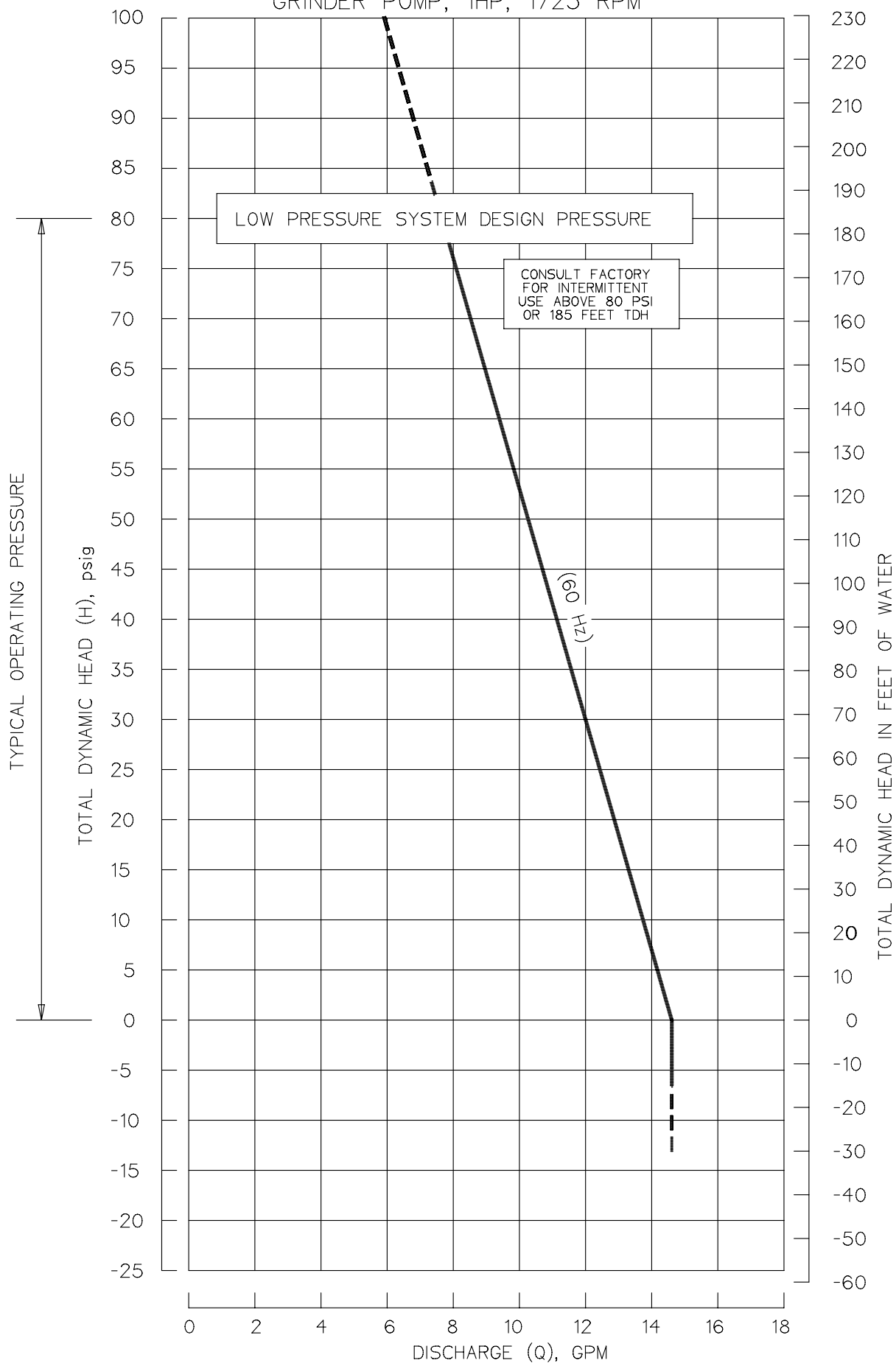
Signature of Licensed Professional Engineer:



Joseph Sandoval, P.E.

E|ONE SPD PUMP PERFORMANCE CURVE

GRINDER PUMP, 1HP, 1725 RPM



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: Joseph Sandoval, P.E.

Date: March 9, 2023

Signature of Customer/Agent:

Joseph Sandoval, P.E.

Regulated Entity Name: New Bruanfels Christian Academy



Project Information

Potential Sources of Contamination

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

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

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

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

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

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

Sequence of Construction

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

Temporary Best Management Practices (TBMPs)

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

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

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

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

Soil Stabilization Practices

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

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

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

Administrative Information

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

TEMPORARY STORMWATER SECTION
ATTACHMENT A
Spill Response Actions

In the event of an accidental leak or spill:

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

In the event of a significant or hazardous spill in reportable quantities:

- Notify the TCEQ by telephone as soon as possible and within 24 hours by phone at (210) 490-3096 (San Antonio) between the hours of 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224
- For spills of federal reportable quantities, the contractor should notify the National Response Center at (800) 424-8800the Edwards Aquifer Authority at (210) 222-2204
- Notifications 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.

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

TEMPORARY STORMWATER SECTION
ATTACHMENT B
Potential Sources of Contamination

Potential sources of contamination during construction include:

- Asphalt products used on this project.
- Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dropping
- Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site
- Miscellaneous trash and litter from construction workers and material wrappings.
- Construction debris
- Spills/overflow of waste from portable toilets

Preventative measure shall include:

- After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.
- Vehicle maintenance, when possible, will be performed within the construction staging area
- Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.
- Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
- Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
- Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
- A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
- Trash containers will be placed throughout the site to encourage proper trash disposal.
- Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case-by-case basis.
- Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets
- Portable toilets will be placed on a level ground surface.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

TEMPORARY STORMWATER SECTION

ATTACHMENT C

Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will be performed in one phase.

1. Call New Braunfels Utilities and TCEQ 48-hours prior to beginning any work. Call the Dig Tess for utilities locations.
2. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized entrances, or other controls must be installed prior to construction and maintained during construction.
3. Begin site clearing. (27.17 acres disturbed)
4. Inspect erosion controls at weekly intervals, before and after significant rainfall events to insure they are functioning properly.
5. Road cuts to subgrade elevation. (27.17 acres already disturbed)
6. Install onsite sewer mains and laterals. (27.17 acres already disturbed)
7. Install water lines. (27.17 acres already disturbed)
8. Construct drainage improvements. (27.17 acres already disturbed)
9. Complete fill and compaction on site to match subgrade elevations. (27.17 acres already disturbed)
10. Construct curb inlet protection at the time of curb and inlet installation. (27.17 acres already disturbed)
11. Complete all construction per approved plans and stabilize all disturbed areas.
12. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities cease and will not resume within 21 days.
13. Install streetscape and/or landscaping improvements.
14. Contact project engineer to inspect site. Final city inspection to be scheduled.
15. Complete any necessary final dress up in areas disturbed.
16. Removed and dispose of temporary erosion controls after site revegetation has occurred.

TEMPORARY STORMWATER SECTION
ATTACHMENT D
Temporary Best Management Practices and Measures

Temporary erosion controls are proposed for this project to include silt fence, rock berms, concrete wash out area, filter curb inlet protection, temporary spoils & staging area and stabilized construction entrances and exits. Please see sheet C3.00 and C3.01 for layout of all BMPs.

Temporary sediment basins are not required because there are no drainage areas greater than 10 acres disturbed on site.

A stabilized construction entrance at the beginning of the project will be required.

Rock berms will be established at the existing low points at the beginning of the project will be required.

From the TECQ RG 348 dated July, 2005, silt fences provide protection. In addition, the contractor has been directed to minimize disturbance.

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

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include:

1. Placement of silt fence along the downgradient boundary of construction activities for temporary erosion and sedimentation controls,
2. Installation of rock berms downgradient from areas of concentrated stormwater flow for temporary erosion control, and
3. Installation of construction staging area(s)

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

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

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

No naturally-occurring sensitive features were identified in the Geologic Assessment. There are no surface streams on or immediately adjacent to the site. BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams or features that may exist downstream of the site. Features discovered during construction will be reported and assessed in accordance with applicable regulations.

TEMPORARY STORMWATER SECTION
ATTACHMENT F
Structural Practices

Prior to the initiation of site preparation activities, silt fence will be installed along the down gradient boundary of the site and a construction staging area will be installed. Silt fences will be used until construction is complete and vegetation and paving have been established.

Rough cutting of the proposed parking lot will divert flows from entering the trench areas. Additionally, the contractor will pile the spoils from trench excavation on the uphill side of the trench, with a minimum of one foot between the trench and the pile, in order to prevent storm water from entering the trench.

In addition, the contractor will be directed to minimize site disturbance and avoid having equipment in areas that are not necessary for the construction. Natural vegetation shall be left undisturbed and will help remove sediment if any bypass at silt fences or other structural measures occurs.

TEMPORARY STORMWATER SECTION
ATTACHMENT G
Drainage Area Map

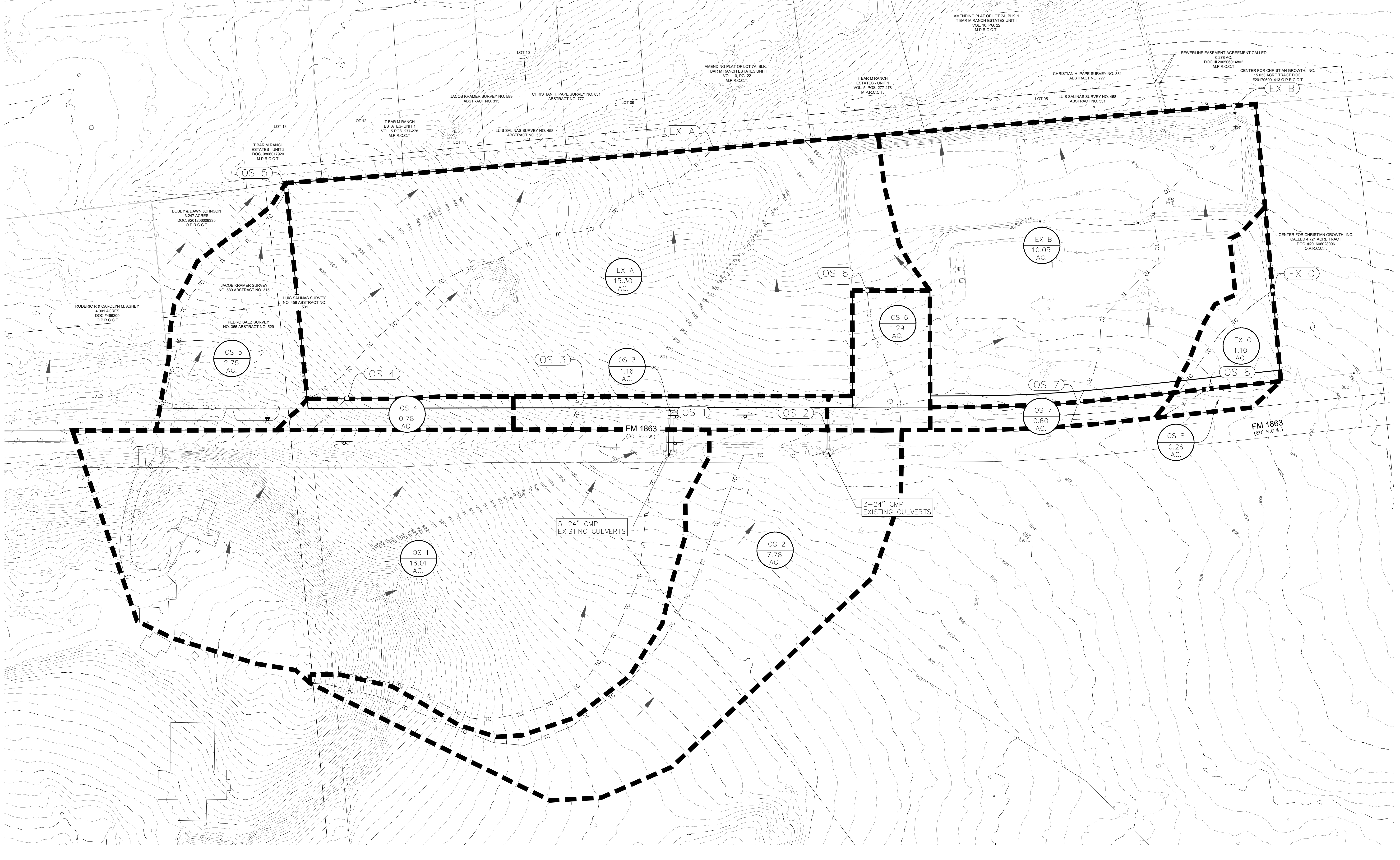
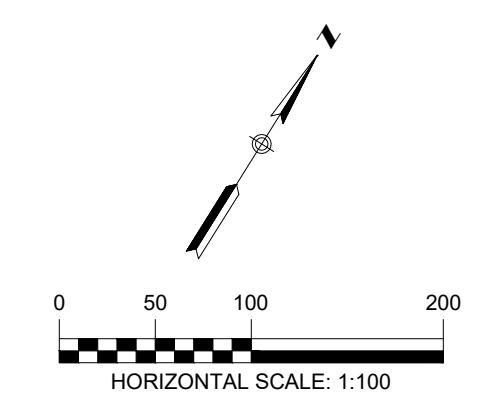
The Existing Drainage Area Map, Proposed Drainage Area Map and Ultimate Drainage Area Map can be found on sheet C2.00, C2.01, and C2.02 respectively, of the NBCA Expansion WPAP Civil Site Construction Plans.

Point of Concentration	Description	Drainage Area	Area	T _c	C Value	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
OS 1	Existing Culvert Analysis	OS 1	16.01	11.29	78.00	30.27	67.82	97.53	124.23	154.88
OS 2	Existing Culvert Analysis	OS 2	7.78	12.52	78.00	14.71	32.96	47.39	60.37	75.26
OS 3	Offsite Drainage Contributing to Drainage Features	OS 3	1.16	10.00	78.00	2.19	4.91	7.07	9.00	11.22
OS 4	TxDOT Culvert Sizing	OS 4	0.78	10.61	78.00	1.48	3.30	4.75	6.05	7.55
OS 5	Offsite Drainage Contributing to Drainage Features	OS 5	2.75	10.68	78.00	5.20	11.65	16.75	21.34	26.60
OS 6	Offsite Drainage Contributing to Drainage Features	OS 6	1.29	10.68	78.00	2.44	5.47	7.86	1.01	12.48
OS 7	Offsite Drainage Contributing to Drainage Features	OS 7	0.60	10.00	78.00	1.13	2.54	3.66	4.66	5.80
OS 8	Offsite Drainage Contributing to Drainage Features & Free Released	OS 8	0.26	14.77	78.00	0.44	0.98	1.41	1.80	2.24

Point of Concentration	Description	Drainage Area	Area	T _c	C Value	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
EX A	Ensure Longest Time of Concentration	EX A	15.30	12.66	78.00	28.93	64.82	93.20	118.72	148.01
OS 1 - 6 + EX A	Drainage Area B Comparison					85.21	190.93	274.55	349.71	436.00
EX B	Ensure Longest Time of Concentration	EX B	10.05	16.89	78.00	16.05	35.79	51.52	65.68	81.93
OS 7 + EX B	Drainage Area B Comparison					17.05	38.15	54.90	69.96	87.25
EX C	Ensure Longest Time of Concentration	EX C	1.10	13.37	78.00	1.85	4.15	5.97	7.60	9.48
OS 8 + EX C	Drainage Area C Comparison					2.29	5.13	7.38	9.40	11.72

LEGEND

- 700 --- EXISTING CONTOURS
- 700 --- PROPOSED CONTOURS
- DRAINAGE AREA
- TC --- TIME OF CONCENTRATION
- A-1 --- POINT OF CONCENTRATION
- DRAINAGE FLOW DIRECTION
- DA ACRES --- DRAINAGE AREA LABEL



290 S. CASTELL AVE., STE. 100
 NEW BRAUNFELS, TX 78130
 TBPE FIRM F-10961
 TBPLS FIRM 1053600



03/09/2023

EXISTING DRAINAGE AREA MAP
 NBCA EXPANSION WPAP/SCS
 NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
 DRAWN BY: CHD
 DESIGNED BY: CAT
 REVIEWED BY: JTS
 HMT PROJECT NO.: 318.003

SHEET
C2.00

Drawing Name: N:\Projects\318 - New Braunfels Christian Academy\003 - Expansion and Sports Fields\GIS\318.003_DRG_WPAP.dwg User: corbin Mar 09, 2023 - 3:07pm

Drawing Name: N:_Projects\318 - New Braunfels Christian Academy\003 - Expansion and Sports Fields\318.003_DRWG_WPAP.dwg User: cshc Date: Mar 09, 2023 3:02pm

Table 1 - Offsite Conditions Hydrology Calculations - City of New Braunfels SCS Method

Point of Concentration	Description	Drainage Area	Area	T _c	C Value	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
OS 1	Existing Culvert Analysis	OS 1	16.01	11.29	78.00	30.27	67.82	97.53	124.23	154.88
OS 2	Existing Culvert Analysis	OS 2	7.78	12.52	78.00	14.71	32.96	47.39	60.37	75.26
OS 3	Offsite Drainage Contributing to Drainage Features	OS 3	1.16	10.00	78.00	2.19	4.91	7.07	9.00	11.22
OS 4	TxDOT Culvert Sizing	OS 4	0.78	10.61	78.00	1.48	3.30	4.75	6.05	7.55
OS 5	Offsite Drainage Contributing to Drainage Features	OS 5	2.75	10.68	78.00	5.20	11.65	16.75	21.34	26.60
OS 6	Offsite Drainage Contributing to Drainage Features	OS 6	1.29	10.68	78.00	2.44	5.47	7.86	1.01	12.48
OS 7	Offsite Drainage Contributing to Drainage Features	OS 7	0.60	10.00	78.00	1.13	2.54	3.66	4.66	5.80
OS 8	Offsite Drainage Contributing to Drainage Features & Free Released	OS 8	0.26	14.77	78.00	0.44	0.98	1.41	1.80	2.24

Table 3 - Ultimate Conditions Hydrology Calculations - City of New Braunfels SCS Method

Point of Concentration	Description	Drainage Area	Area	T _c	C Value	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
A	Drainage Area EX A Comparison	A	14.30	23.26	93.00	76.40	165.90	235.61	298.64	370.88
B	Drainage Area EX B Comparison	B	11.83	13.35	93.00	16.49	38.12	53.07	66.58	84.83
C	Drainage Area EX C Comparison	C	0.33	10.00	93.00	1.44	2.75	3.76	4.66	5.70

Table 4 - Batch Detention Basin A

	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
Discharge (cfs)	33.16	63.01	86.23	106.70	130.34
Volume	162919	332099	463974	582978	720554
Water Surface Elevation	868.00	868.53	868.89	869.17	869.48
Freeboard (ft)	3.00	2.47	2.11	1.83	1.52

Table 5 - Batch Detention Basin B

	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
Discharge (cfs)	16.49	38.12	53.07	66.58	84.83
Volume	110713	230606	323495	407113	503642
Water Surface Elevation	873.32	874.11	874.57	874.95	875.33
Freeboard (ft)	3.18	2.39	1.93	1.55	1.17

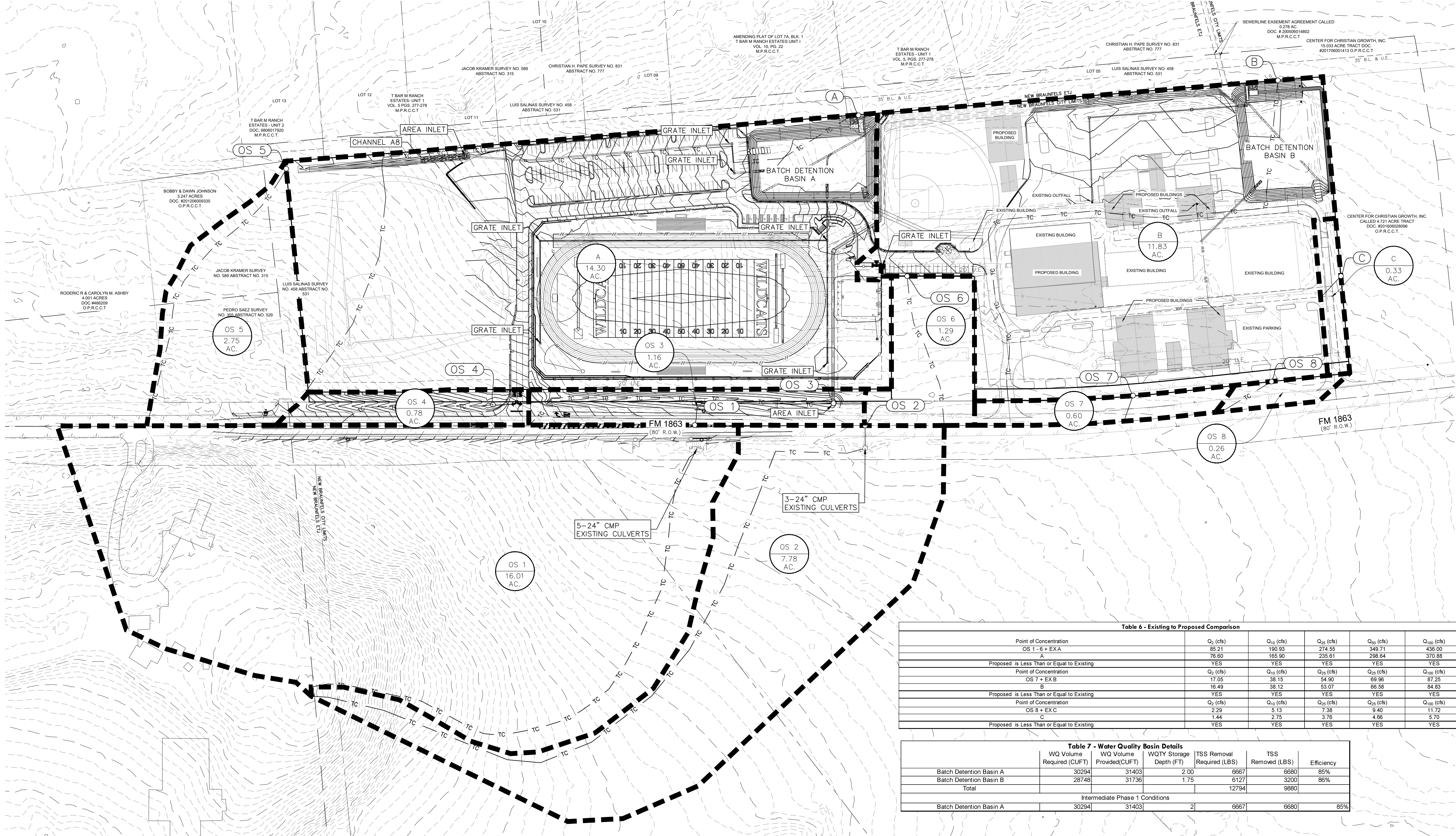
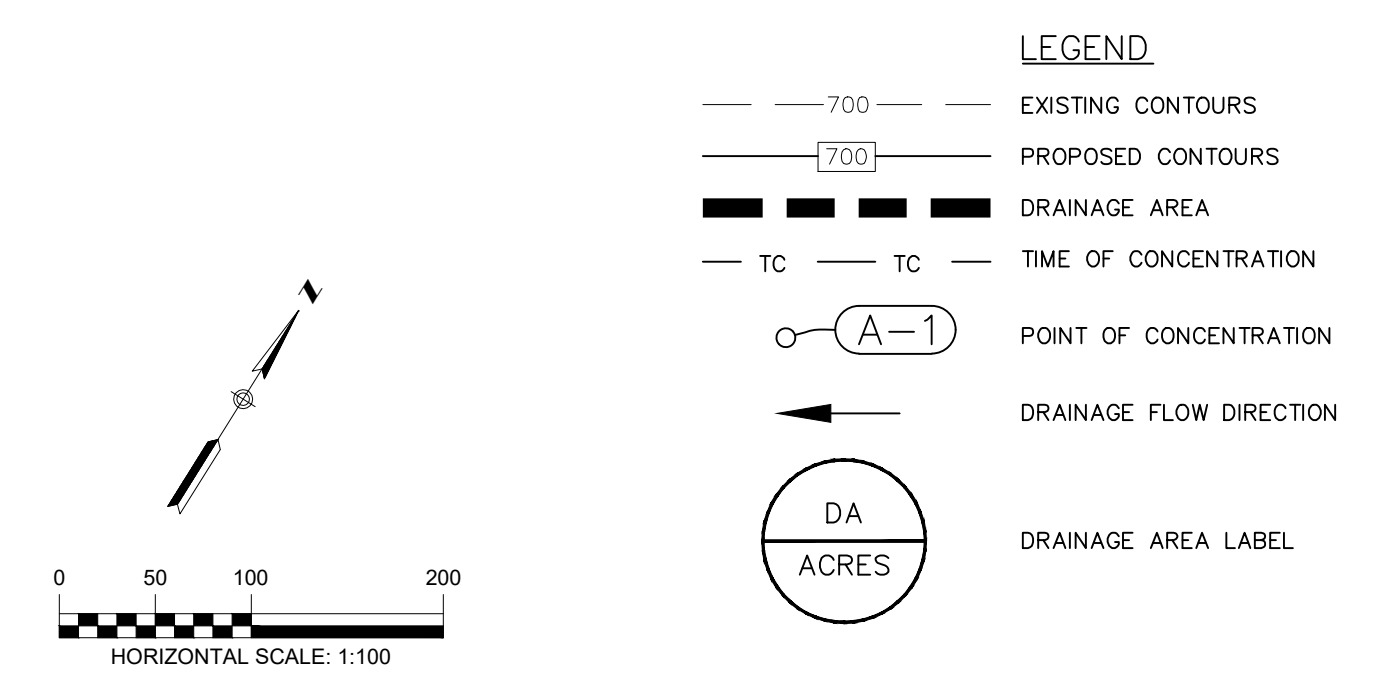


Table 6 - Existing to Proposed Comparison

Point of Concentration	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
OS 1 - 6 + EXA	85.21	190.93	274.55	349.71	436.00
A	76.60	165.90	235.61	298.64	370.88
Proposed is Less Than or Equal to Existing	YES	YES	YES	YES	YES
Point of Concentration	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
OS 7 + EXB	17.05	38.15	54.90	69.96	87.25
B	16.49	38.12	53.07	66.58	84.83
Proposed is Less Than or Equal to Existing	YES	YES	YES	YES	YES
Point of Concentration	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₅₀ (cfs)	Q ₁₀₀ (cfs)
OS 8 + EXC	2.29	5.13	7.38	9.40	11.72
C	1.44	2.75	3.76	4.66	5.70
Proposed is Less Than or Equal to Existing	YES	YES	YES	YES	YES

Table 7 - Water Quality Basin Details

Basin	WQ Volume Required (CUFT)	WQ Volume Provided (CUFT)	WQTY Storage Depth (FT)	TSS Removal Required (LBS)	TSS Removed (LBS)	Efficiency
Batch Detention Basin A	30294	31403	2.00	6667	6680	85%
Batch Detention Basin B	28748	31736	1.75	6127	3200	86%
Total				12794	9880	
Intermediate Phase 1 Conditions						
Batch Detention Basin A	30294	31403	2	6667	6680	85%

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

STATE OF TEXAS
JOSEPH T. SANDOVAL
110257
LICENSED PROFESSIONAL ENGINEER

03/09/2023

PROPOSED DRAINAGE AREA MAP
NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
DRAWN BY: CHD
DESIGNED BY: CAT
REVIEWED BY: JTS
HMT PROJECT NO.: 318.003

SHEET
C2.01

TEMPORARY STORMWATER SECTION
ATTACHMENT I
Inspection and Maintenance of BMPs

The Contractor will be directed to inspect and maintain all temporary BMPs. The design engineer will also make regular visits to the project and will provide visual inspections as well. Any deficiency noted must be corrected immediately by the contractor.

Maintenance:

1. Inspect all silt fence, rock berms, concrete wash out areas, sediment basins, and stabilized concrete entrances and exits weekly and after any rainfalls. Inspect the filter curb inlet protection daily.
2. Remove sediment when buildup reaches 6 inches on silt fence, rock berms, or sediment basins or install a second line of silt fence parallel. Remove sediment when buildup reaches 2 inches in filter curb inlet protection.
3. Replace any torn fabric in the silt fence or filter curb inlet protection.
4. Replace or repair any sections crushed or collapsed in the course of construction.
5. See stormwater pollution plan details as shown in the construction plans for proper size and installation.
6. Contractor to maintain a daily log and note any deficiencies to temporary BMPs and corrective action taken. Rainfall events shall also be noted.

TEMPORARY STORMWATER SECTION
ATTACHMENT J
Schedule of Interim and Permanent Soil Stabilization Practices

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

Stabilization measures will be initiated as soon as practicable in portions of site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of the site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

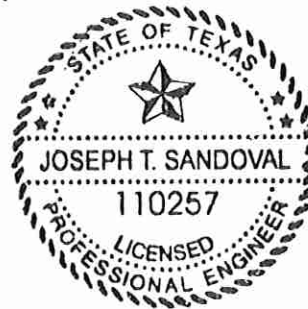
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The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

Print Name of Customer/Agent: Joseph Sandoval, P.E.

Date: March 9, 2023

Signature of Customer/Agent

Joseph Sandoval, P.E.



Regulated Entity Name: New Braunfels Christian Academy

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

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

PERMANENT STORMWATER SECTION
ATTACHMENT B
BMPs for Upgradient Stormwater

There are no permanent BMPs for upgradient stormwater for the New Braunfels Christian Academy site because the site is located adjacent to a watershed boundary and near the local high elevation.

PERMANENT STORMWATER SECTION
ATTACHMENT C
BMPs for On-Site Stormwater

Two (2) batch detention basins are proposed as the Permanent Best Management Practices (PBMPs) for this site. All required TSS removal from the proposed impervious cover has been treated through the two proposed batch detention basins. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

PERMANENT STORMWATER SECTION
ATTACHMENT D
BMPs for Surface Streams

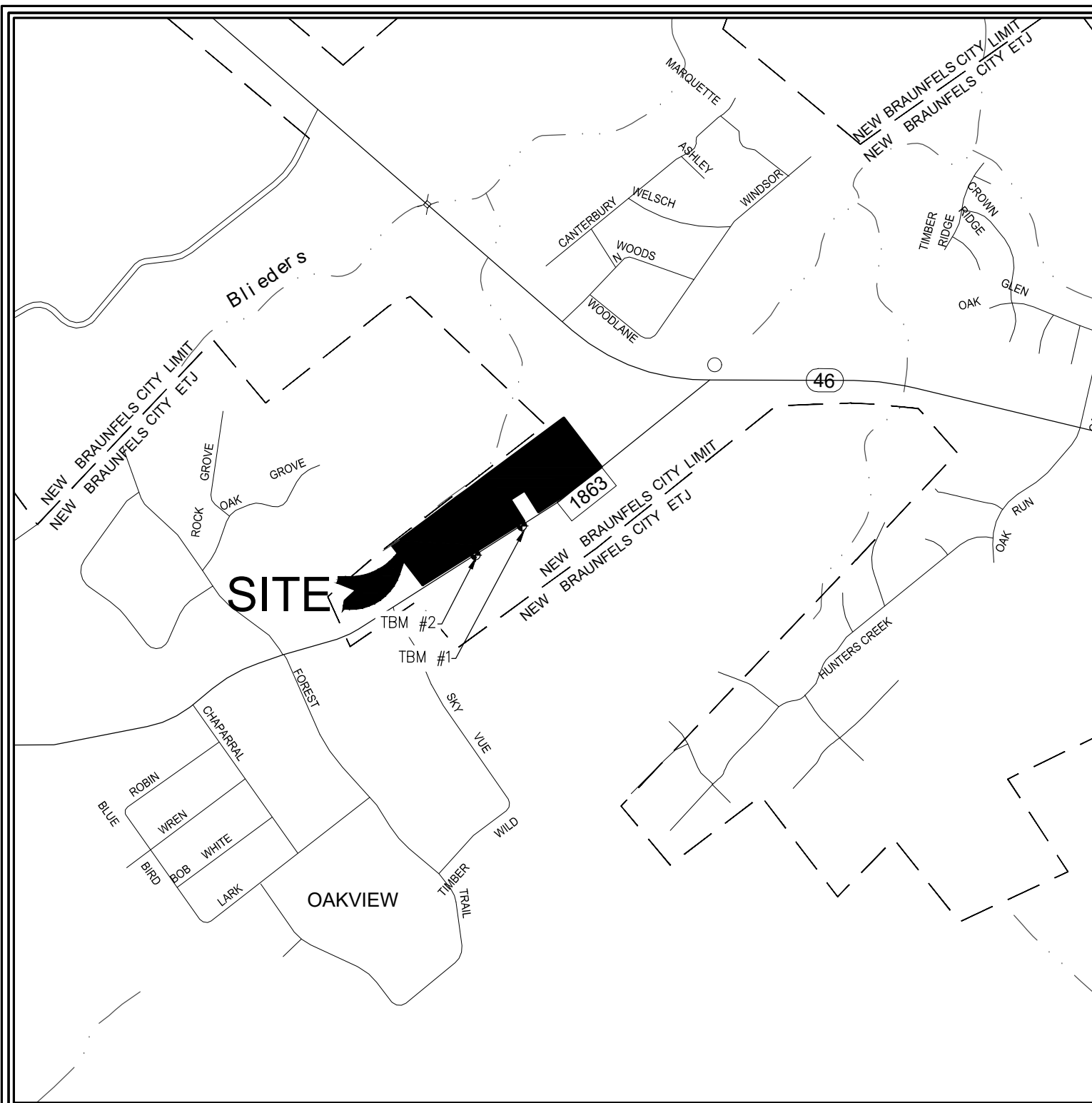
There are no surface streams on or immediately adjacent to the site. Two batch detention basins are proposed as the Permanent Best Management Practices (PBMPs) for this site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The irrigation system will be constructed and installed in accordance with the requirements of the TCEQ's TGM Section 3.4.3.

PERMANENT STORMWATER SECTION
ATTACHMENT F
Construction Plans

There is one type of proposed Permanent BMPs for the on-site stormwater for New Braunfels Christian Academy. The BMPs include two batch detention basins. The permanent BMPs will be constructed to TCEQ standards and the design plans and details can be found on sheets C7.00 through C7.15 of the New Braunfels Christian Academy Office Construction Plans.

NBCA EXPANSION WPAP/SCS NEW BRAUNFELS, TEXAS CIVIL SITE CONSTRUCTION PLANS

NEW BRAUNFELS CHRISTIAN ACADEMY 220 FM 1863 NEW BRAUNFELS, TEXAS 78132



PROJECT LOCATION MAP

SCALE: N.T.S.

PROJECT BENCHMARK

SITE TBM #1
SET #51
N: 13809285.50
E: 2227495.88
ELEV: 893.95'

SITE TBM #2
SET #52
N: 13808993.24
E: 2227031.23
ELEV: 901.80'

SEE GRADING SHEETS C5.00

LEGAL DESCRIPTION

BEING A 27.135 ACRE TRACT OF LAND SITUATED IN THE LUIS SALINAS SURVEY NO. 458, ABSTRACT NO. 531, COMAL COUNTY, TEXAS, RECORDED IN DOCUMENTS NO. 201706030260 AND 200406025465 OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS.

PLEASE NOTE: NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRIC, WATER AND WASTEWATER ATTRIBUTES, SOME OF WHICH MUST BE TAKEN PRIOR TO BACKFILL DURING CONSTRUCTION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER'S CONTRACTOR OR ENGINEER. A MINIMUM OF THREE (3) COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE AND ELECTRIC GPS POINTS SHALL BE TO MAP GRADE. PLEASE REFERENCE NBU'S WATER CONNECTION POLICY FOR ADDITIONAL CAD DELIVERABLE REQUIREMENTS.

REQUIRED MEASUREMENTS FOR THE WATER SYSTEM INCLUDE:

1. VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL.
2. HORIZONTAL BENDS PRIOR TO BACKFILL.
3. TEES PRIOR TO BACKFILL.
4. FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL.
5. FIRE HYDRANTS (TOP OF FLANGE).
6. VALVES.
7. METERS (TOP CENTER OF BOX).
8. BLOW OFF ASSEMBLIES.
9. CORNER SLAB OF WATER TANKS AND THE ISOLATION GATE VALVE ON THE WATER TANK.

REQUIRED MEASUREMENTS FOR THE WASTEWATER SYSTEM:

1. MANHOLES.
2. CLEANOUTS.
3. CORNER SLAB OF ALL LIFT STATIONS.

REQUIRED MEASUREMENTS FOR THE ELECTRIC SYSTEM INCLUDE:

1. POLES.
2. TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK).
3. PULL BOXES.
4. STREET LIGHTS.

COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

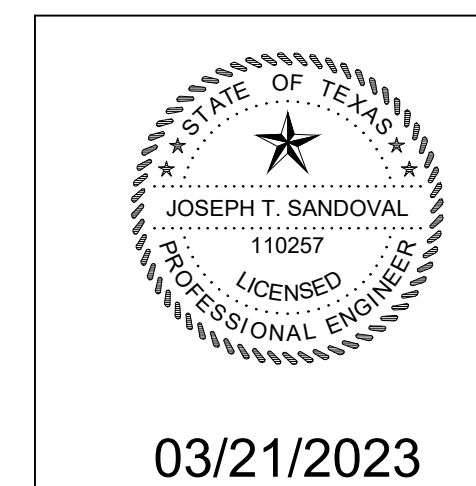
GENERAL NOTES:

1. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
2. THE MOST CURRENT EDITIONS OF THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS AND THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES SHALL BE FOLLOWED FOR ALL CONSTRUCTION EXCEPT AS AMENDED BY THE CITY OF NEW BRAUNFELS STANDARD DETAILS.
3. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
4. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS TO SET A PRE-CONSTRUCTION MEETING. A 48-HOUR ADVANCED NOTIFICATION IS REQUIRED FOR ALL INSPECTION AND MEETING REQUESTS.

4.1 ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
4.2 FAXED IN AT 830-608-2117 OR,
4.3 E-MAILED AT INSPECTIONS@NBUTEXAS.ORG.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
7. THIS DEVELOPMENT IS A TYPE 3 DEVELOPMENT.
8. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE COMAL COUNTY, TEXAS, FIRM PANEL NUMBER 48091C0435F EFFECTIVE DATE SEPTEMBER, 02, 2009, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
9. THIS PROJECT IS LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE, TRANSITION OR CONTRIBUTING ZONE.
10. GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN PUBLIC RIGHT-OF-WAY, IF APPLICABLE.
11. THE ENGINEER OF RECORD ACKNOWLEDGES THAT ALL PROPOSED WATER AND WASTEWATER IMPROVEMENTS MUST COMPLY WITH TCEQ, CITY OF NEW BRAUNFELS, NBU WATER CONNECTION POLICY, SOUND ENGINEERING JUDGEMENT AND ANY OTHER GOVERNING ENTITY ORDINANCES OR CODES.

REQUIRED PERMITS	NUMBER
1. TCEQ	#

MARCH 2023



ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

Joseph T. Sandoval, P.E.
Joseph T. Sandoval P.E.
License No. 110257

PREPARED BY:



290 S. CASTELL AVE., STE. 100
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HMTNB.COM
P(830)625-8555*F(830)625-8556
TBPE FIRM F-10961
TBPLS FIRM 1053600

SHEET LIST TABLE

SHEET NO.	SHEET TITLE
C0.00	COVER
C0.01	CONSTRUCTION NOTES
C1.00	PLAT (1 OF 2)
C1.01	PLAT (2 OF 2)
C2.00	EXISTING DRAINAGE AREA MAP
C2.01	PROPOSED DRAINAGE AREA MAP
C2.02	PROPOSED DRAINAGE SUB-AREA MAP
C3.00	TREE PLAN
C3.01	TREE PROTECTION DETAILS
C4.00	TEMPORARY WATER POLLUTION ABATEMENT PLAN (1 OF 2)
C4.01	TEMPORARY WATER POLLUTION ABATEMENT PLAN (2 OF 2)
C4.02	TEMPORARY WATER POLLUTION ABATEMENT PLAN DETAILS
C4.03	PERMANENT WPAP IMPERVIOUS COVER EXHIBIT
C5.00	OVERALL SITE
C5.01	SITE PLAN (1 OF 3)
C5.02	SITE PLAN (2 OF 3)
C5.03	SITE PLAN (3 OF 3)
C5.04	SITE PLAN DETAILS (1 OF 2)
C5.05	SITE PLAN DETAILS (2 OF 2)
C6.00	OVERALL GRADING
C6.01	DETAILED GRADING (1 OF 3)
C6.02	DETAILED GRADING (2 OF 3)
C6.03	DETAILED GRADING (3 OF 3)
C7.00	OVERALL STORM
C7.01	STORM DRAIN LINE 1
C7.02	STORM DRAIN LINE 2
C7.03	STORM DRAIN LINE A1
C7.04	STORM DRAIN LINE A2
C7.05	STORM DRAIN LINE A3 & A4 PLAN AND PROFILE
C7.06	STORM DRAIN LINE A5 & CHANNEL PLAN AND PROFILE
C7.07	BASIN A (1 OF 2)
C7.08	BASIN A (2 OF 2)
C7.09	BASIN B (1 OF 2)
C7.10	BASIN B (2 OF 2)
C7.11	BASIN DETAILS (1 OF 2)
C7.12	BASIN DETAILS (2 OF 2)
C7.13	STORM DETAILS (1 OF 3)
C7.14	STORM DETAILS (2 OF 3)
C7.15	STORM DETAILS (3 OF 3)
C8.00	WATER PLAN AND PROFILE (1 OF 2)
C8.01	WATER PLAN AND PROFILE (2 OF 2)
C8.02	4 in DOMESTIC WATER PLAN
C8.03	WATER DETAILS
C9.00	OVERALL WASTEWATER
C9.01	1.25" WASTEWATER LINE PLAN AND PROFILE
C9.02	WASTEWATER LINE B PLAN AND PROFILE
C9.03	WASTEWATER DETAILS

NOTE TO CONTRACTOR:

BY THE ACT OF SUBMITTING A BID FOR THIS PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS, SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HIS SUBCONTRACTORS' AND MATERIAL SUPPLIERS' KNOWLEDGE, ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES.

THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAS BEEN BASED UPON RECORD INFORMATION ONLY AND MAY NOT MATCH LOCATIONS AND/OR DEPTHS AS CONSTRUCTED. THE CONTRACTOR SHALL CONTACT EACH OF THE INDIVIDUAL UTILITIES FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS AND DEPTHS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL UTILITY CROSSINGS PRIOR TO BEGINNING ANY CONSTRUCTION.

NBCA EXPANSION WPAP/SCS
CIVIL SITE CONSTRUCTION PLANS

HMT # 318.003

Drawing Name: N:\Projects\318 - New Braunfels Christian Academy\003 - Expansion and Sports Fields\318.003_ER05.dwg User: corbinc Mar 21, 2023 - 3:57pm

SEQUENCE OF CONSTRUCTION

1. INSTALL EROSION CONTROLS PER APPROVED PLAN.
2. TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED. CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
3. CONDUCT DEMOLITION ACTIVITIES, IF APPLICABLE.
4. CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
5. CONSTRUCT CURB INLET PROTECTION AT THE TIME OF CURB INLET INSTALLATION.
6. CONSTRUCT DEVELOPMENT PER APPROVED PLANS.
7. INSTALL STREETScape AND/OR LANDSCAPING IMPROVEMENTS.
8. CONTRACTOR TO VEGETATE ANY DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 70% VEGETATION PRIOR TO COMPLETION. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.
9. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

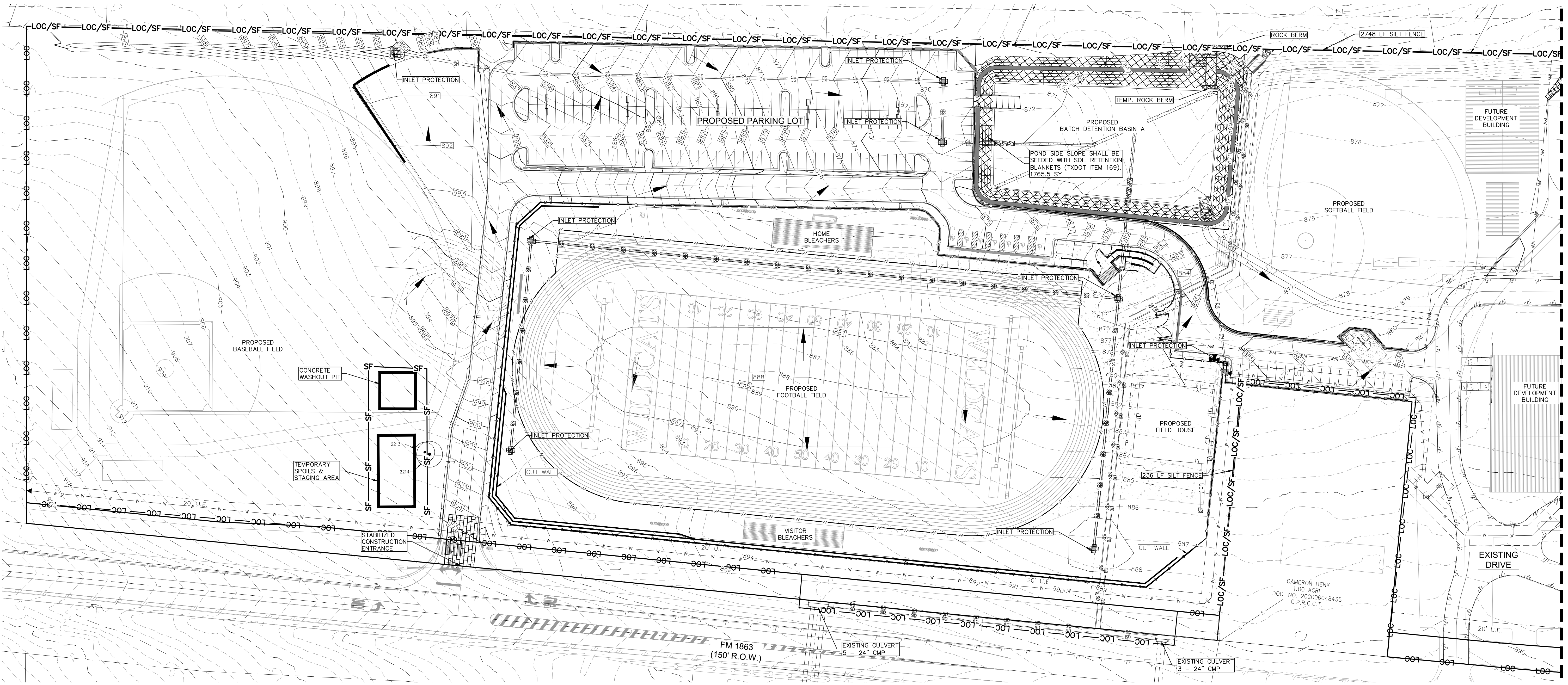
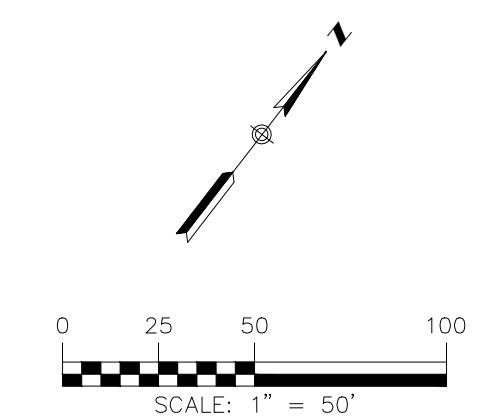
NOTE:

PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENT) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

SILT FENCE AT PROPERTY LINE MAY BE SHOWN GRAPHICALLY OFFSET FROM PROPERTY LINE TO AVOID OVERLAP OF LINEWORK. CONTRACTOR SHALL NOT INSTALL EROSION CONTROL MEASURES BEYOND LIMITS OF CONSTRUCTION REGARDLESS OF GRAPHIC REPRESENTATION.

LEGEND

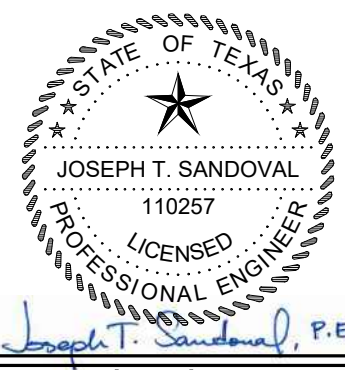
- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE FLOW DIRECTION
- SF — SF — SILT FENCE
- LOC — LOC — LIMIT OF CONSTRUCTION
- [Hatched Box] STABILIZED CONSTRUCTION ENTRANCE
- [Hatched Box] FILTER DIKE CURB INLET PROTECTION
- [Dashed Box] ROCK BERM
- [Solid Line] CUT WALL
- [Dashed Line] FILL WALL



**MATCHLINE
SEE SHEET C4.01**

**TEMPORARY WATER POLLUTION
ABATEMENT PLAN (1 OF 2)**

NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS



03/21/2023

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
 DRAWN BY: CHD
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HMT PROJECT NO.:
318.003

**SHEET
C4.00**

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

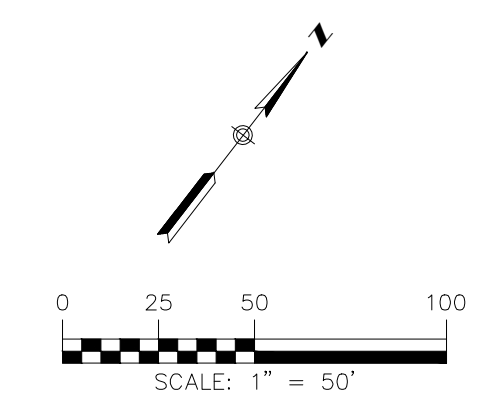
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600



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SEQUENCE OF CONSTRUCTION

1. INSTALL EROSION CONTROLS PER APPROVED PLAN.
2. TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED, CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
3. CONDUCT DEMOLITION ACTIVITIES, IF APPLICABLE.
4. CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
5. CONSTRUCT CURB INLET PROTECTION AT THE TIME OF CURB INLET INSTALLATION.
6. CONSTRUCT DEVELOPMENT PER APPROVED PLANS.
7. INSTALL STREETScape AND/OR LANDSCAPING IMPROVEMENTS.
8. CONTRACTOR TO VEGETATE ANY DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 70% VEGETATION PRIOR TO COMPLETION. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.
9. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.



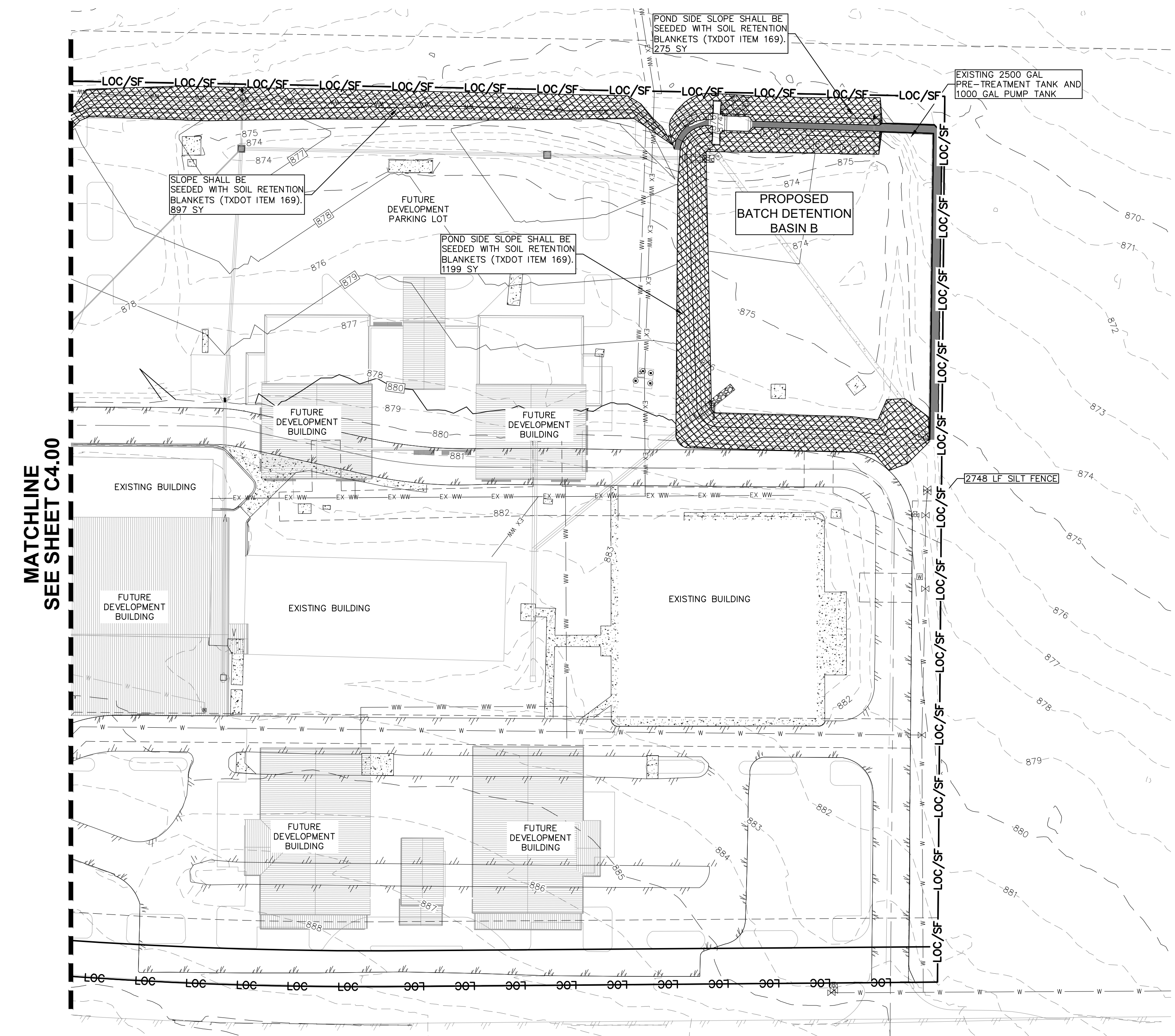
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE FLOW DIRECTION
- SF — SF — SILT FENCE
- LOC — LOC — LIMIT OF CONSTRUCTION
- [Hatched Box] STABILIZED CONSTRUCTION ENTRANCE
- [Hatched Box] FILTER DIKE CURB INLET PROTECTION
- [Stippled Box] ROCK BERM
- [Solid Line] CUT WALL
- [Dashed Line] FILL WALL

NOTE:

PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENT) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

SILT FENCE AT PROPERTY LINE MAY BE SHOWN GRAPHICALLY OFFSET FROM PROPERTY LINE TO AVOID OVERLAP OF LINWORK. CONTRACTOR SHALL NOT INSTALL EROSION CONTROL MEASURES BEYOND LIMITS OF CONSTRUCTION REGARDLESS OF GRAPHIC REPRESENTATION.



290 S. CASTELL AVE., STE. 100
 NEW BRAUNFELS, TX 78130
 TBPE FIRM F-10961
 TBPLS FIRM 1053600

03/21/2023

TEMPORARY WATER POLLUTION ABATEMENT PLAN (2 OF 2)

NBCA EXPANSION WPAP/SCS
 NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
 DRAWN BY: CHD
 DESIGNED BY: CAT
 REVIEWED BY: JTS
 HMT PROJECT NO.: 318.003

SHEET
C4.01

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

CONCRETE WASHOUT AREAS

THE PURPOSE OF CONCRETE WASHOUT AREAS IS TO PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORMWATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE, PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA, AND TRAINING EMPLOYEES AND SUBCONTRACTORS.

THE FOLLOWING STEPS WILL HELP REDUCE STORMWATER POLLUTION FROM CONCRETE WASTES:

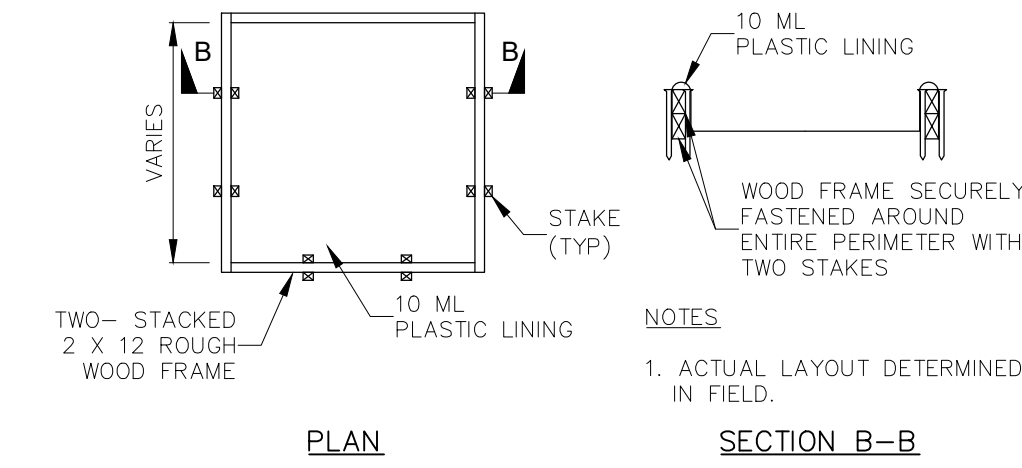
- INCORPORATE REQUIREMENTS FOR CONCRETE WASTE MANAGEMENT INTO MATERIAL SUPPLIER AND SUBCONTRACTOR AGREEMENTS.
• AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
• PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
• DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
• DO NOT ALLOW EXCESS CONCRETE TO BE DUMPED ONSITE, EXCEPT IN DESIGNATED AREAS.

FOR ONSITE WASHOUT:

- LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, OR WATER BODIES. DO NOT ALLOW RUNOFF FROM THIS AREA BY CONSTRUCTING A TEMPORARY PIT OR BERMED AREA LARGE ENOUGH FOR LIQUID AND SOLID WASTE.
• WASH OUT WASTES INTO THE TEMPORARY PIT WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED PROPERLY.

BELOW GRADE CONCRETE WASHOUT FACILITIES ARE TYPICAL. THESE CONSIST OF A LINED EXCAVATION SUFFICIENTLY LARGE TO HOLD EXPECTED VOLUME OF WASHOUT MATERIAL. ABOVE GRADE FACILITIES ARE USED IF EXCAVATION IS NOT PRACTICAL. TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAILS AT THE END OF THIS SECTION, WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.



CONCRETE WASHOUT PIT DETAIL TYPE "ABOVE GRADE" NOT TO SCALE

SILT FENCE

MATERIALS:

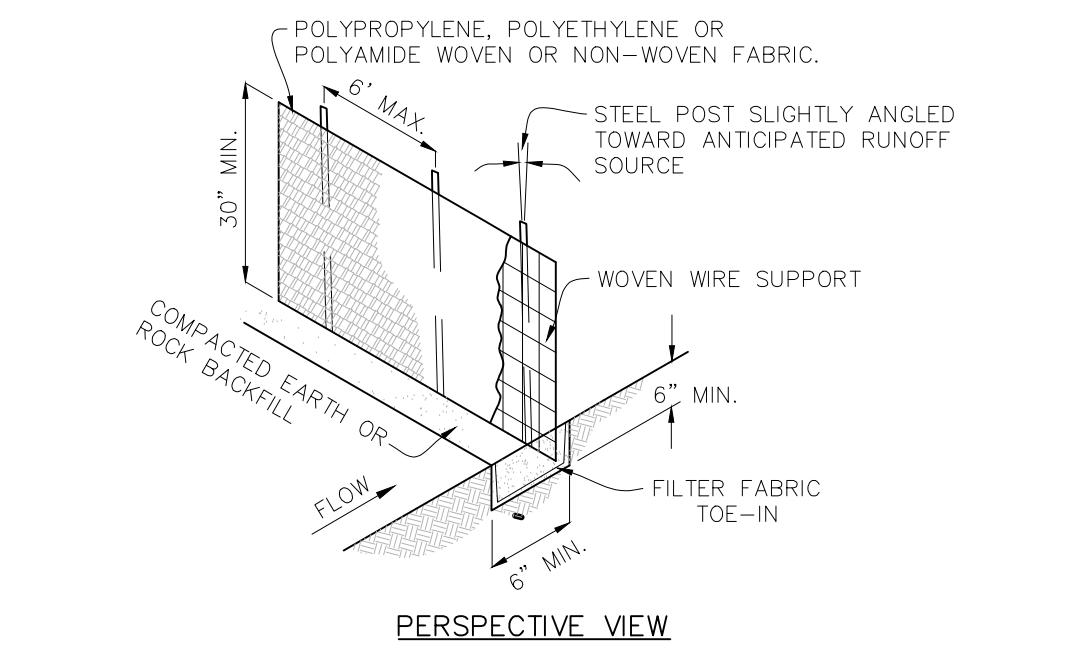
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT2, AND BRINDELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BAKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION:

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1'- FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AND CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.
3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTFROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES:

1. INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
3. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
4. REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.



SILT FENCE DETAIL NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE / EXIT

MATERIALS:

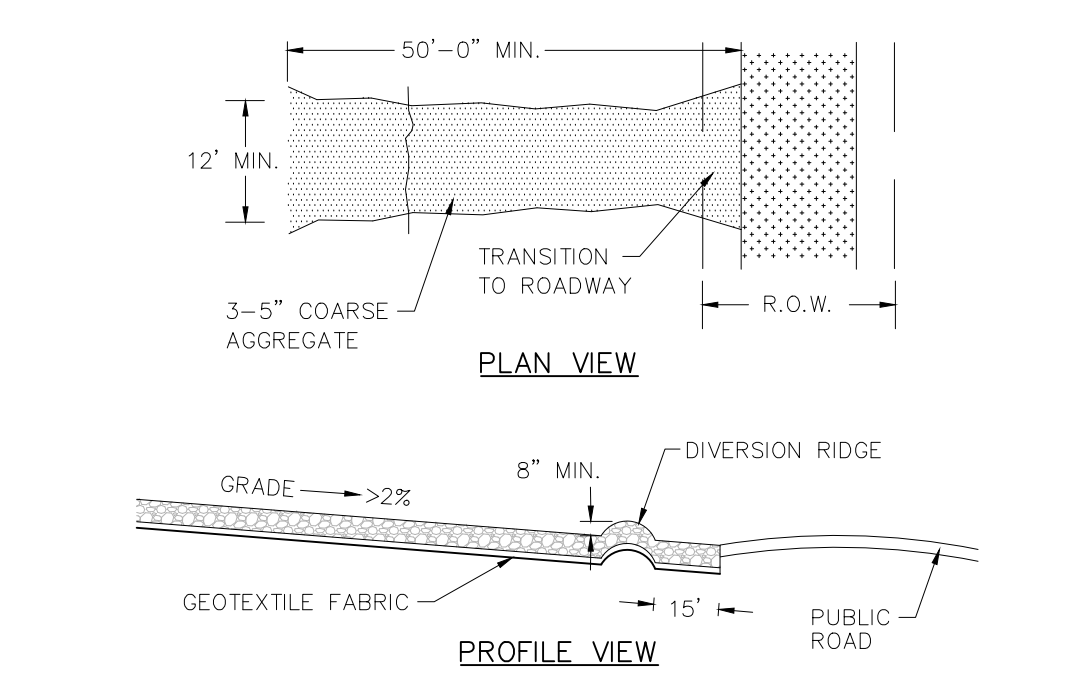
1. THE AGGREGATE SHOULD CONSIST OF 3 TO 5 INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8 INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD2, A MULLEN BURST RATING OF 140 LB/IN2, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4 INCH DIAMETER WASHED STONE OR COMMERCIAL RACK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION:

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

INSPECTION AND MAINTENANCE GUIDELINES:

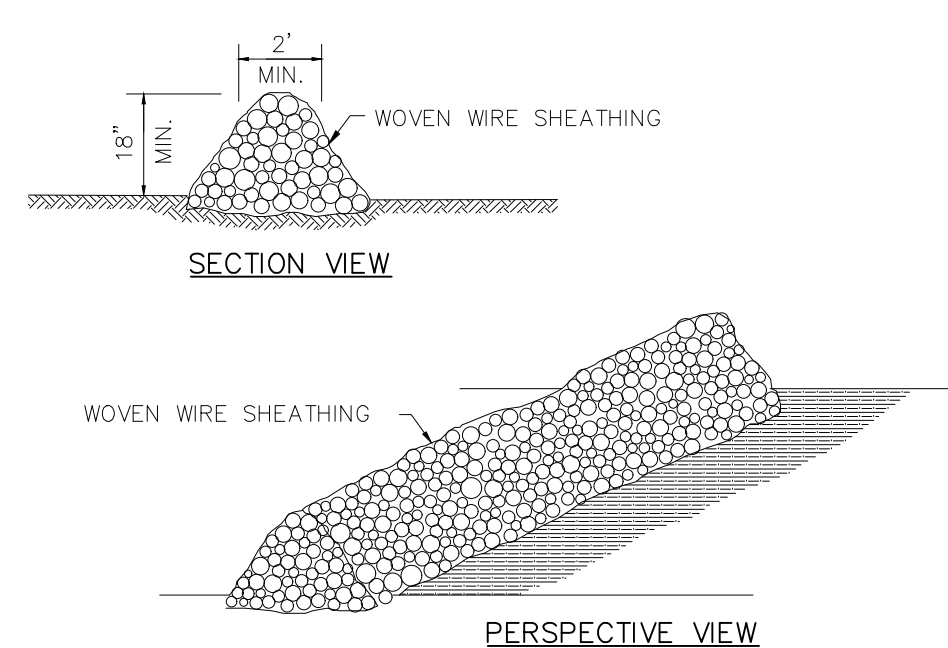
1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR LOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.



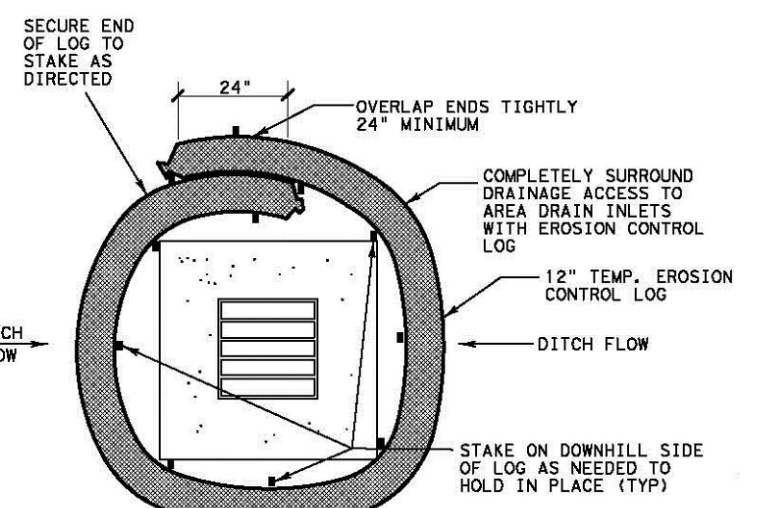
CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE

ROCK BERM

1. USE ONLY OPEN GRADED ROCK 3-5" DIAMETER.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO 6", THE SILT WILL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.



ROCK BERM DETAIL NOT TO SCALE



NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENT) AND SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES IN 21 DAYS, PER TPDES REQUIREMENTS.

SEE SHEET C0.01 (CITY OF NEW BRAUNFELS CONSTRUCTION NOTES) FOR SEEDING REQUIREMENTS AND SPECIFICATIONS

HMT ENGINEERING & SURVEYING logo and address: 290 S. CASTELL AVE., STE. 100 NEW BRAUNFELS, TX 78130

Professional Engineer Seal for Joseph T. Sandoval, License No. 110257

03/21/2023

TEMPORARY WATER POLLUTION ABATEMENT PLAN DETAILS NBCA EXPANSION WPAP/SCS NEW BRAUNFELS, TEXAS

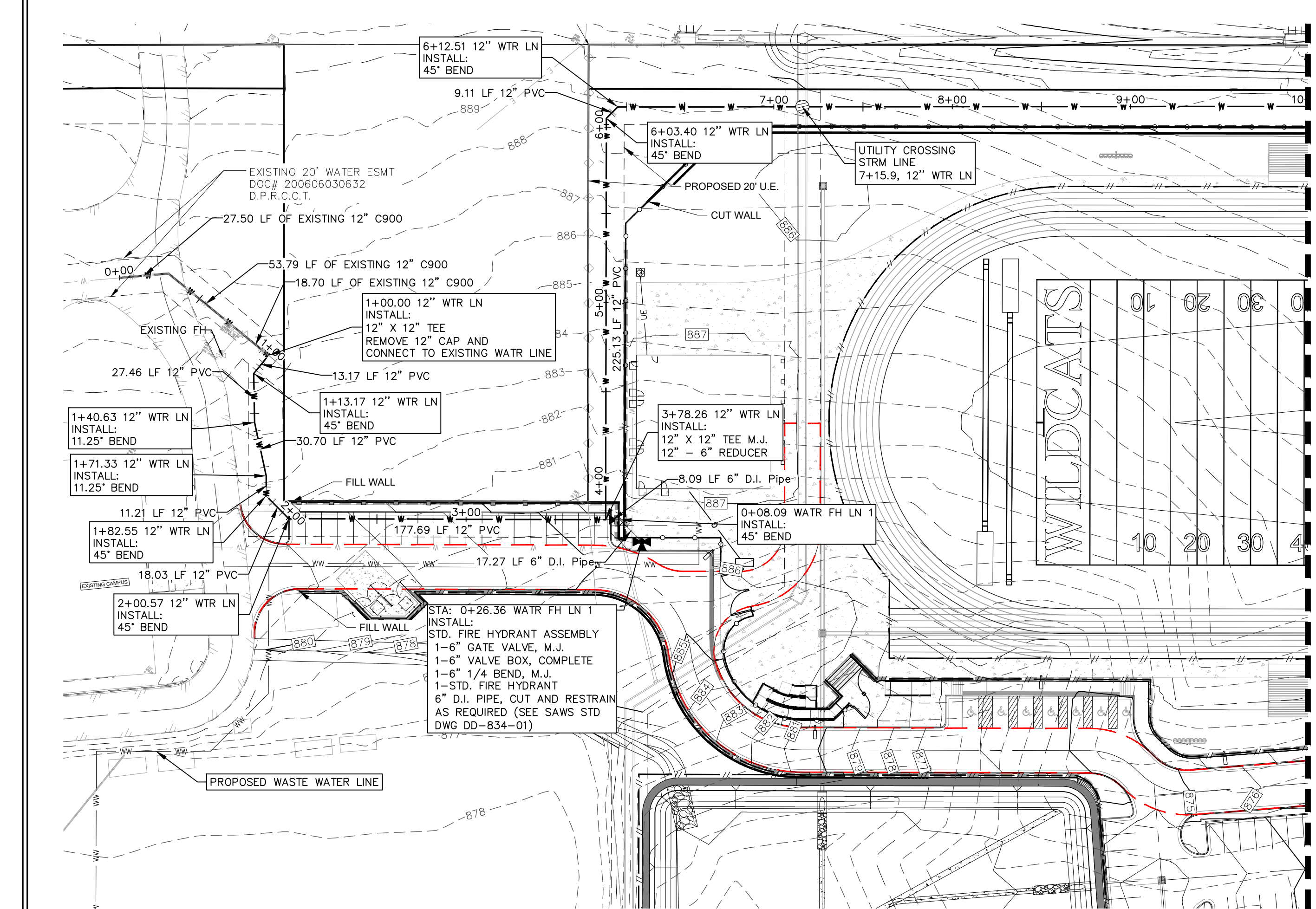
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DATE: MARCH 2023 DRAWN BY: CHD DESIGNED BY: CAT REVIEWED BY: JTS

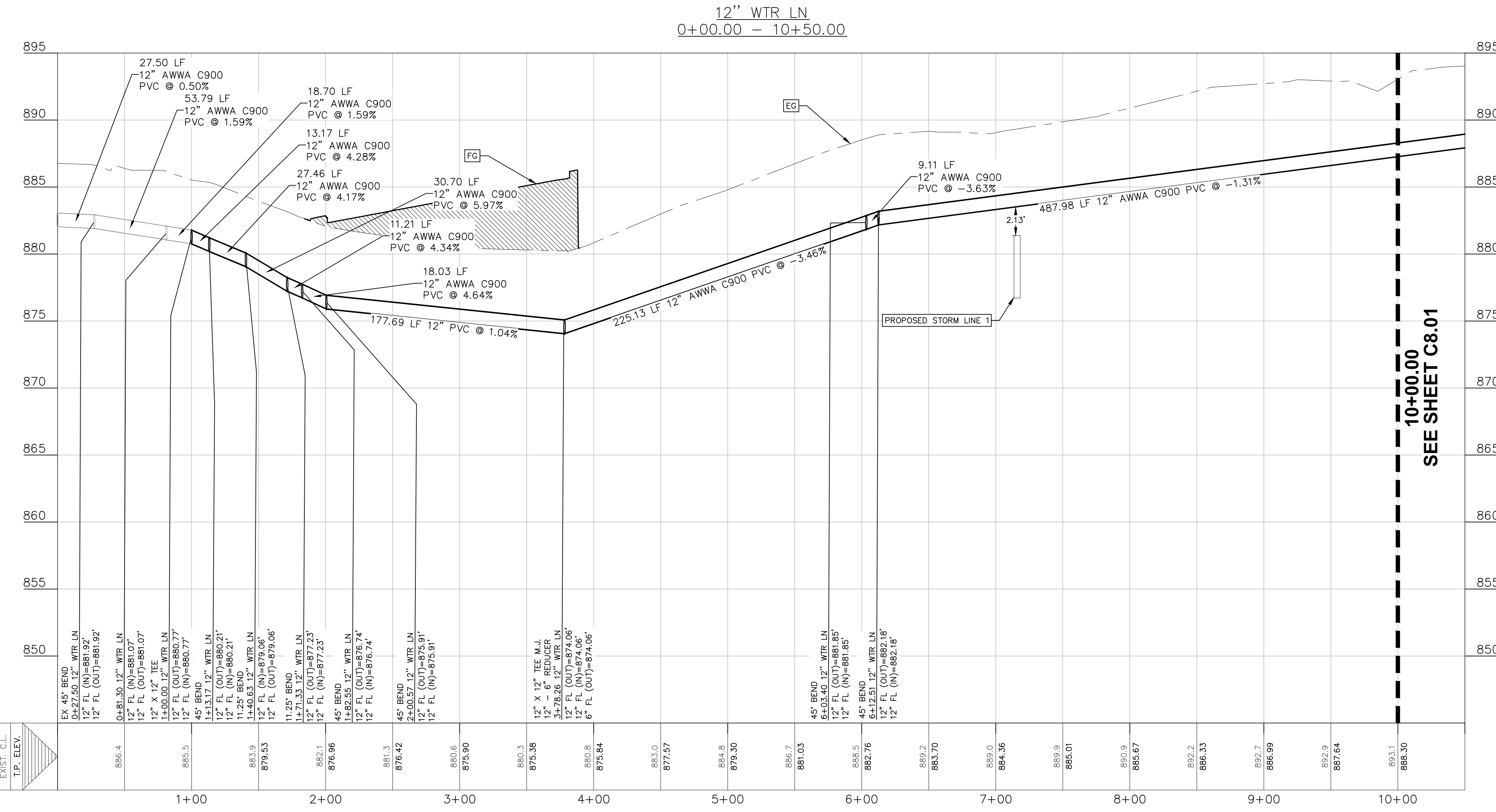
HMT PROJECT NO.: 318.003

SHEET C4.02

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.



10+00.00
SEE SHEET C8.01



NBU WATER CONSTRUCTION NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
2. WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
3. WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
4. WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
5. EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER CAN BE CONSIDERED FOR SEPARATE BUILDINGS. HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
6. CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
7. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
8. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIAL REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH OR STONES HAVING ANY DIMENSION LARGER THAN 6" INCHES AT THE LARGEST DIMENSION.
9. HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE. NO METER BOXES TO BE SET IN DRIVEWAYS OR SIDEWALKS. ANY METER BOXES SET IN DRIVEWAYS OR SIDEWALKS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
10. METER BOXES MUST BE SET AT THE PROPOSED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
11. ACCEPTABLE METER BOXES ARE D13-BAMR AND D15-BAMR. NEW RESIDENTIAL LOTS ARE REQUIRED TO USE THE D15-BAMR METER BOXES (DOUBLE AMR). COMMERCIAL LOTS SHOULD CHOOSE WHICH BOX APPLIES TO THE DOMESTIC AND/OR IRRIGATION METER LAYOUT.
12. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
13. CONTRACTOR SHALL PLACE TRACER WIRE ON TOP OF THE WATER MAINS. TRACER WIRE SHOULD RUN FROM VALVE TO VALVE AND EXIT AT THE VALVE BOX. THE TRACER WIRE SHOULD BE ATTACHED TO THE TOP OF THE PIPE USING TAPE. EXCESS WIRE SHOULD BE LEFT WITHIN VALVE BOXES TO BE PLACED WITHIN LID OF COVER.
14. WATER QUALITY SHALL BE PROTECTED WITH APPROPRIATE BACKFLOW PREVENTION ASSEMBLIES INSTALLED ON ALL IRRIGATION SYSTEMS, FIRE SUPPRESSION SYSTEMS AND MULTI-UNIT COMPLEXES ALONG WITH MULTI-LEVEL PROPERTIES ON THE DOMESTIC METER CONTAINMENT. NBU CAN ASSIST WITH THE DECISION ON APPROPRIATE BACKFLOW ASSEMBLIES ON A CASE BY CASE BASIS. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
15. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED UPON INSTALLATION AND REPORT SENT TO NBU VIA THE ONLINE TRACKING SYSTEM. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
16. ALL RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL HAVE A CUSTOMER SERVICE INSPECTION CERTIFICATE (CSI INSPECTION) COMPLETED UPON COMPLETION OF THE BUILDING OR HOME STRUCTURE. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
17. THE POINT OF DELIVERY FOR AN NBU SYSTEM IS THE MAIN SIDE OF THE SERVICE/LATERAL/LEAD FROM THE CUSTOMER'S METER/BACKFLOW/EASEMENT EDGE. THE CUSTOMER IS RESPONSIBLE FOR DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER THE CUSTOMER'S INSTALLATION INCLUDING REVIEW, PERMITTING, AND COMPLIANCE WITH ALL CITY PLUMBING CODES OR OTHER APPLICABLE CODES.

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
3. THIS SITE IS IN THE KOHLBERG PRESSURE ZONE ACCORDING TO NEW BRAUNFELS UTILITIES PRESSURE RECORDER LOCATIONS.
4. CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
5. POINT OF DELIVERY SHALL BE IN ACCORDANCE WITH NBU WATER AND WASTEWATER DESIGN CRITERIA MANUAL, SECTION 2.3.0.
6. FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.

CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES 48 HOURS PRIOR TO EXCAVATION:

UTILITY COMPANY	PHONE NUMBER
NEW BRAUNFELS UTILITIES	830-629-8400
SPECTRUM	888-406-7063
CENTROPOINT GAS	800-427-7142
AT&T TELEPHONE	830-303-1333
TEXAS ONE CALL	811

C.P.E. LOCATOR

CALL CENTER POINT ENERGY LOCATOR AT 1-800-545-6005, 48HRS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CENTER POINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

TELEPHONE LOCATOR

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY DURING CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

RESTRAINED LENGTH NOTES:

1. CONTRACTOR TO COORDINATE WITH NEW BRAUNFELS UTILITIES (N.B.U.) FOR WATER, SEWER, AND ELECTRIC SERVICE TO THE SITE.
2. ALL IN-LINE VALVES, BENDS & PLUGS SHALL BE RESTRAINED, RESTRAINT TO BE PROVIDED ON EACH SIDE OF THE VALVE, FITTING OR ANY REQUIRED JOINT.
3. RL=RESTRAINT LENGTH
4. CONTRACTOR SHALL DETERMINE RESTRAINT LENGTH REQUIRED FOR HORIZONTAL VERTICAL FITTINGS BASED ON RESTRAINT LENGTH TABLE SHOWN BELOW.

PIPE INSIDE DIAMETER	MATERIAL	RESTRAINED LENGTH FOR PIPE										DEAD END/ INCLINE VALVES
		HORIZONTAL BENDS				VERTICAL BENDS						
		90'	45'	22.5'	11.25'	UPPER		LOWER				
8"	PVC	29	13	6	3	34	16	8	8	4	2	80
6"	DUCTILE IRON	25	10	5	3	22	11	6	8	4	2	52
12"	PVC	41	17	9	4	47	23	12	13	6	3	114

PIPE INSIDE DIAMETER OF RUN	PIPE INSIDE DIAMETER OF BRANCH	MATERIAL	FT.
8"	8"	PVC	70
8"	8"	DUCTILE IRON	45
12"	8"	PVC	64

NOTES:
LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:
1) SAFETY FACTOR = 1.5 TO 1
2) TEST PRESSURE = 200psi
3) SOIL DESIGNATION = MANUFACTURED SAND
4) DEPTH OF COVER = 3.5 FEET (TYPICAL AND UPPER BEND)
5) DEPTH OF COVER = 5 FEET (LOWER BEND)
6) LENGTH ALONG RUN = 2 FEET

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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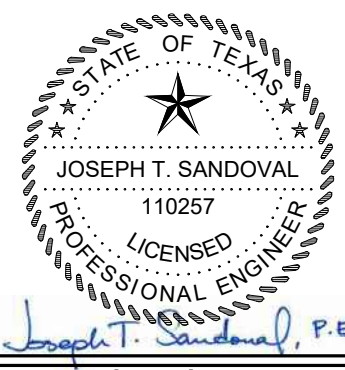
LEGEND

- 700 EXISTING CONTOURS
- 700 PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- EX W - EX W EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE
- UTILITY CROSSING
- CUT WALL
- FILL WALL

WATER STRUCTURE TOTALS

PIPE SIZE	PIPE LENGTH	DOMESTIC SIZE	DOMESTIC METERS	FIRE HYDRANTS	FIRE LINES
1'-0"	2230'			1	2

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600



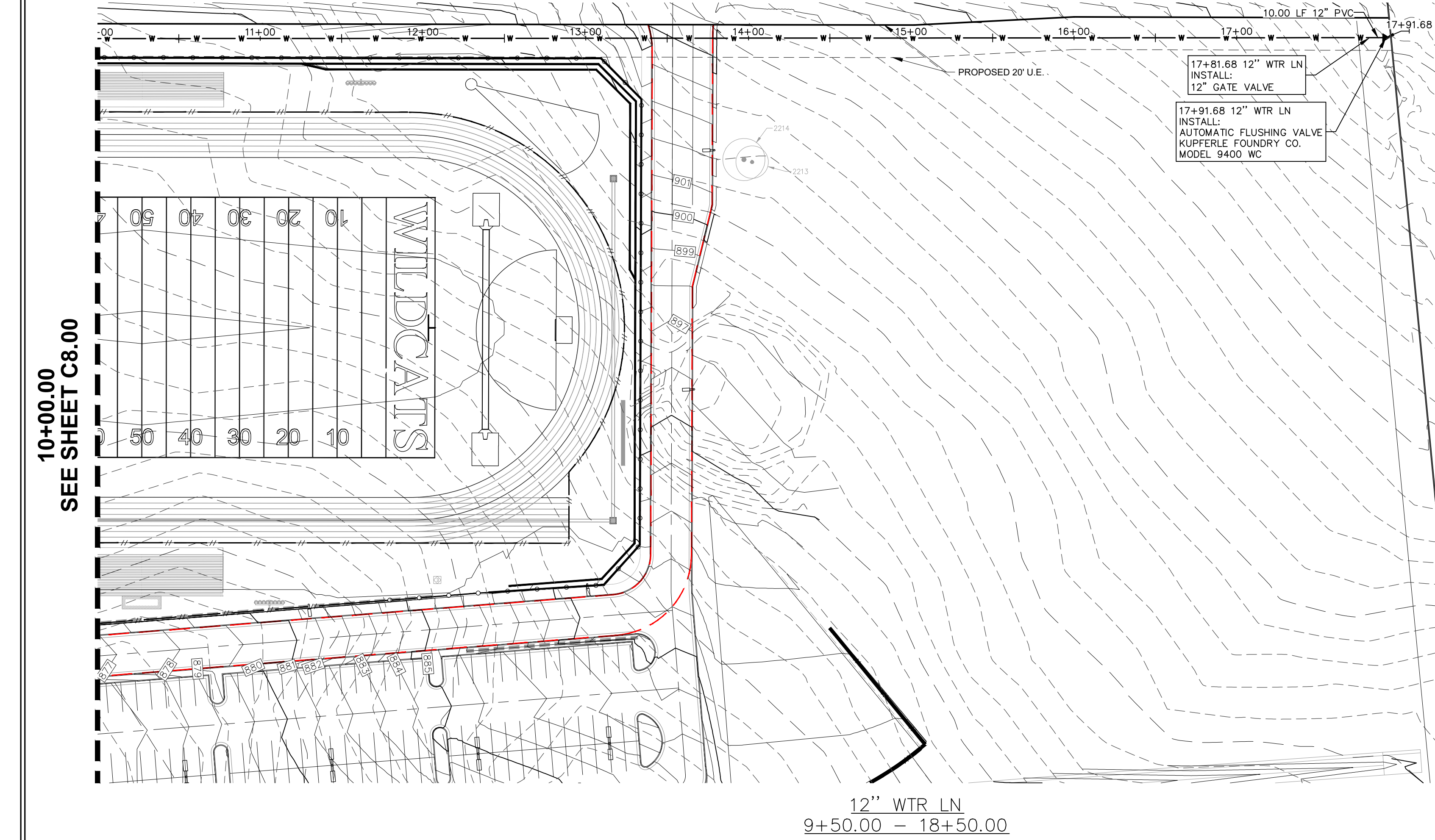
03/21/2023

WATER PLAN AND PROFILE (1 OF 2)
NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
DRAWN BY: CHD
DESIGNED BY: CAT
REVIEWED BY: JTS
HMT PROJECT NO.: 318.003

SHEET C8.00



NBU WATER CONSTRUCTION NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
2. WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
3. WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
4. WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASUREMENT WILL BE REQUIRED.
5. EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER CAN BE CONSIDERED FOR SEPARATE BUILDINGS, HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
6. CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
7. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR FEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
8. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIAL REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH OR STONES HAVING ANY DIMENSION LARGER THAN 6" INCHES AT THE LARGEST DIMENSION.
9. HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
10. NO METER BOXES TO BE SET IN DRIVEWAYS OR SIDEWALKS. ANY METER BOXES SET IN DRIVEWAYS OR SIDEWALKS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
11. METER BOXES MUST BE SET AT THE PROPOSED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
12. ACCEPTABLE METER BOXES ARE D13-BAMR AND D15-BAMR. NEW RESIDENTIAL LOTS ARE REQUIRED TO USE THE D13-BAMR METER BOXES (DOUBLE AMR). COMMERCIAL LOTS SHOULD CHOOSE WHICH BOX APPLIES TO THE DOMESTIC AND/OR IRRIGATION METER LAYOUT.
13. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
14. CONTRACTOR SHALL PLACE TRACER WIRE ON TOP OF THE WATER MAINS. TRACER WIRE SHOULD RUN FROM VALVE TO VALVE AND EXIT AT THE VALVE BOX. THE TRACER WIRE SHOULD BE ATTACHED TO THE TOP OF THE PIPE USING TAPE. EXCESS WIRE SHOULD BE LEFT WITHIN VALVE BOXES TO BE PLACED WITHIN LID OF COVER.
15. WATER QUALITY SHALL BE PROTECTED WITH APPROPRIATE BACKFLOW PREVENTION ASSEMBLIES INSTALLED ON ALL IRRIGATION SYSTEMS, FIRE SUPPRESSION SYSTEMS AND MULTI-UNIT COMPLEXES ALONG WITH MULTI-LEVEL PROPERTIES ON THE DOMESTIC METER CONTAINMENT. NBU CAN ASSIST WITH THE DECISION ON APPROPRIATE BACKFLOW ASSEMBLIES ON A CASE BY CASE BASIS. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
16. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED UPON INSTALLATION AND REPORT SENT TO NBU. THE ONLINE TRACKING SYSTEM, CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
17. ALL RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL HAVE A CUSTOMER SERVICE INSPECTION CERTIFICATE (CSI INSPECTION) COMPLETED UPON COMPLETION OF THE BUILDING OR HOME STRUCTURE. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
18. THE POINT OF DELIVERY FOR AN NBU SYSTEM IS THE MAIN SIDE OF THE SERVICE/LATERAL/LEAD FROM THE CUSTOMER'S METER/BACKFLOW/EASEMENT EDGE. THE CUSTOMER IS RESPONSIBLE FOR DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER THE CUSTOMER'S INSTALLATION INCLUDING REVIEW, PERMITTING, AND COMPLIANCE WITH ALL CITY PLUMBING CODES OR OTHER APPLICABLE CODES.

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
 2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
 3. THIS SITE IS IN THE KOHLBERG PRESSURE ZONE ACCORDING TO NEW BRAUNFELS UTILITIES PRESSURE RECORDER LOCATIONS.
 4. CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
 5. POINT OF DELIVERY SHALL BE IN ACCORDANCE WITH NBU WATER AND WASTEWATER DESIGN CRITERIA MANUAL, SECTION 2.3.0.
 6. FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES 48 HOURS PRIOR TO EXCAVATION:
- | | |
|-------------------------|--------------|
| NEW BRAUNFELS UTILITIES | 830-629-8400 |
| SPECTRUM | 888-406-7063 |
| CENTERPOINT GAS | 800-427-7142 |
| AT&T TELEPHONE | 830-303-1333 |
| TEXAS ONE CALL | 811 |
- C.P.E. LOCATOR
- CALL CENTER POINT ENERGY LOCATOR AT 1-800-545-6005, 48HRS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CENTER POINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
- TELEPHONE LOCATOR
- THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY DURING CONSTRUCTION.
- TRENCH EXCAVATION SAFETY PROTECTION
- CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

RESTRAINED LENGTH NOTES:

1. CONTRACTOR TO COORDINATE WITH NEW BRAUNFELS UTILITIES (N.B.U.) FOR WATER, SEWER, AND ELECTRIC SERVICE TO THE SITE.
2. ALL IN-LINE VALVES, BENDS & PLUGS SHALL BE RESTRAINED. RESTRAINT TO BE PROVIDED ON EACH SIDE OF THE VALVE, FITTING OR ANY REQUIRED JOINT.
3. RL=RESTRAINT LENGTH
4. CONTRACTOR SHALL DETERMINE RESTRAINT LENGTH REQUIRED FOR HORIZONTAL VERTICAL FITTINGS BASED ON RESTRAINT LENGTH TABLE SHOWN BELOW.

WATER STRUCTURE TOTALS					
PIPE SIZE	PIPE LENGTH	DOMESTIC METER SIZE	DOMESTIC METERS	FIRE HYDRANTS	FIRE LINES
1'-0"	2230'			1	2

PIPE INSIDE DIAMETER	MATERIAL	RESTRAINED LENGTH FOR PIPE								DEAD END/ INCLINE VALVES		
		HORIZONTAL BENDS				VERTICAL BENDS						
		90'	45'	22.5'	11.25'	UPPER		LOWER				
8"	PVC	29	13	6	3	34	16	8	8	4	2	80
8"	DUCTILE IRON	25	10	5	3	22	11	6	8	4	2	52
12"	PVC	41	17	9	4	47	23	12	13	6	3	114

- NOTES:**
- LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:
- 1) SAFETY FACTOR = 1.5 TO 1
 - 2) TEST PRESSURE = 200psi
 - 3) SOIL DESIGNATION = MANUFACTURED SAND
 - 4) DEPTH OF COVER = 3.5 FEET (TYPICAL AND UPPER BEND)
 - 5) DEPTH OF COVER = 5 FEET (LOWER BEND)
 - 6) LENGTH ALONG RUN = 2 FEET

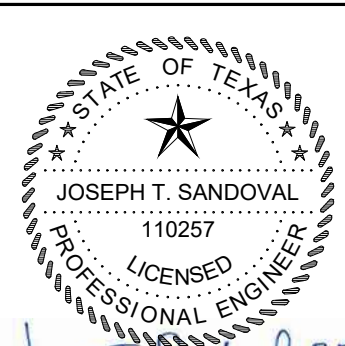
UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600



03/21/2023

**WATER PLAN AND PROFILE
(2 OF 2)**
NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	DATE

DATE: MARCH 2023

DRAWN BY: CHD

DESIGNED BY: CAT

REVIEWED BY: JTS

HMT PROJECT NO.: 318.003

**SHEET
C8.01**

Drawing Name: N:\Projects\318 - New Braunfels Christian Academy\003 - Expansion and Sports Fields\CD\318.003_WRF.dwg User: cchd Mar 21, 2023 - 4:00pm

NBU WATER CONSTRUCTION NOTES:

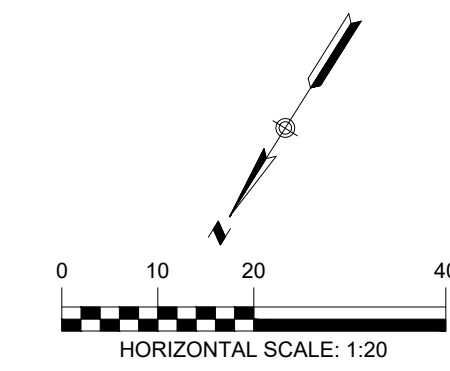
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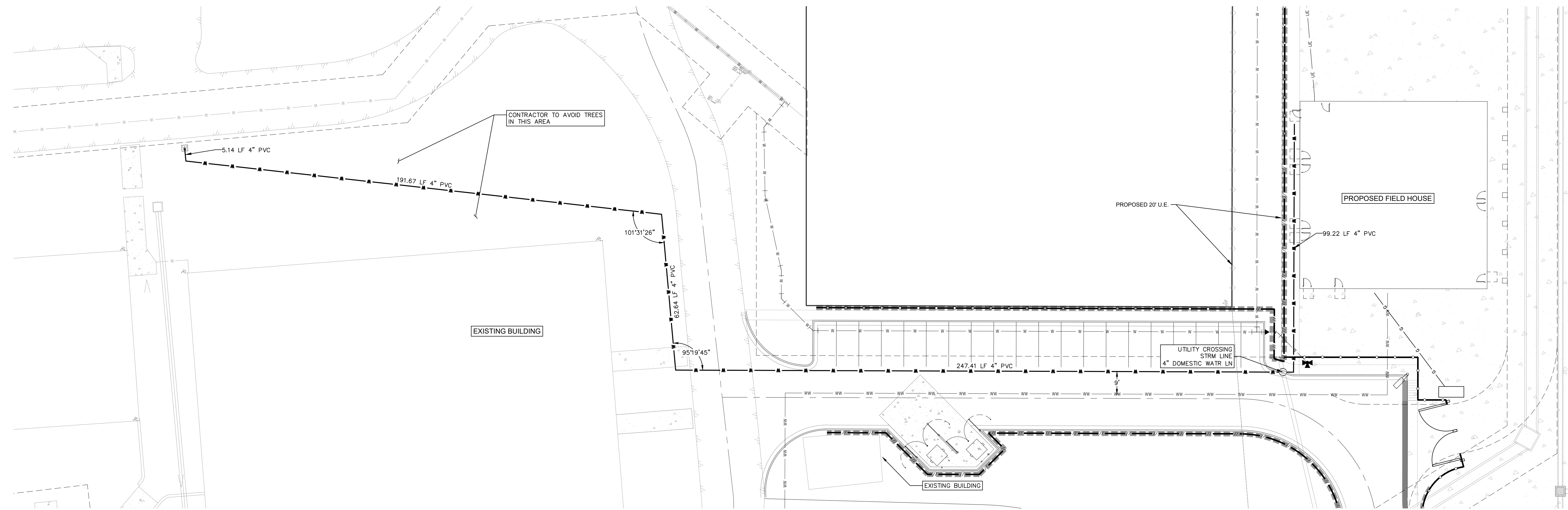
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LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EX-W EXISTING WATER LINE
- W — PROPOSED WATER LINE
- W — PROPOSED WATER SERVICE
- X — UTILITY CROSSING
- CUT WALL
- FILL WALL
- TOP OF POND



TRENCH EXCAVATION SAFETY PROTECTION
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

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290 S. CASTELL AVE., STE. 100
 NEW BRAUNFELS, TX 78130
 TBPE FIRM F-10961
 TBPLS FIRM 1053600



03/21/2023

4 in DOMESTIC WATER PLAN
 NBCA EXPANSION WPAP/SCS
 NEW BRAUNFELS, TEXAS

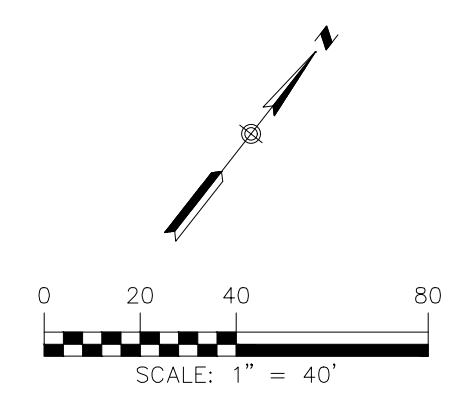
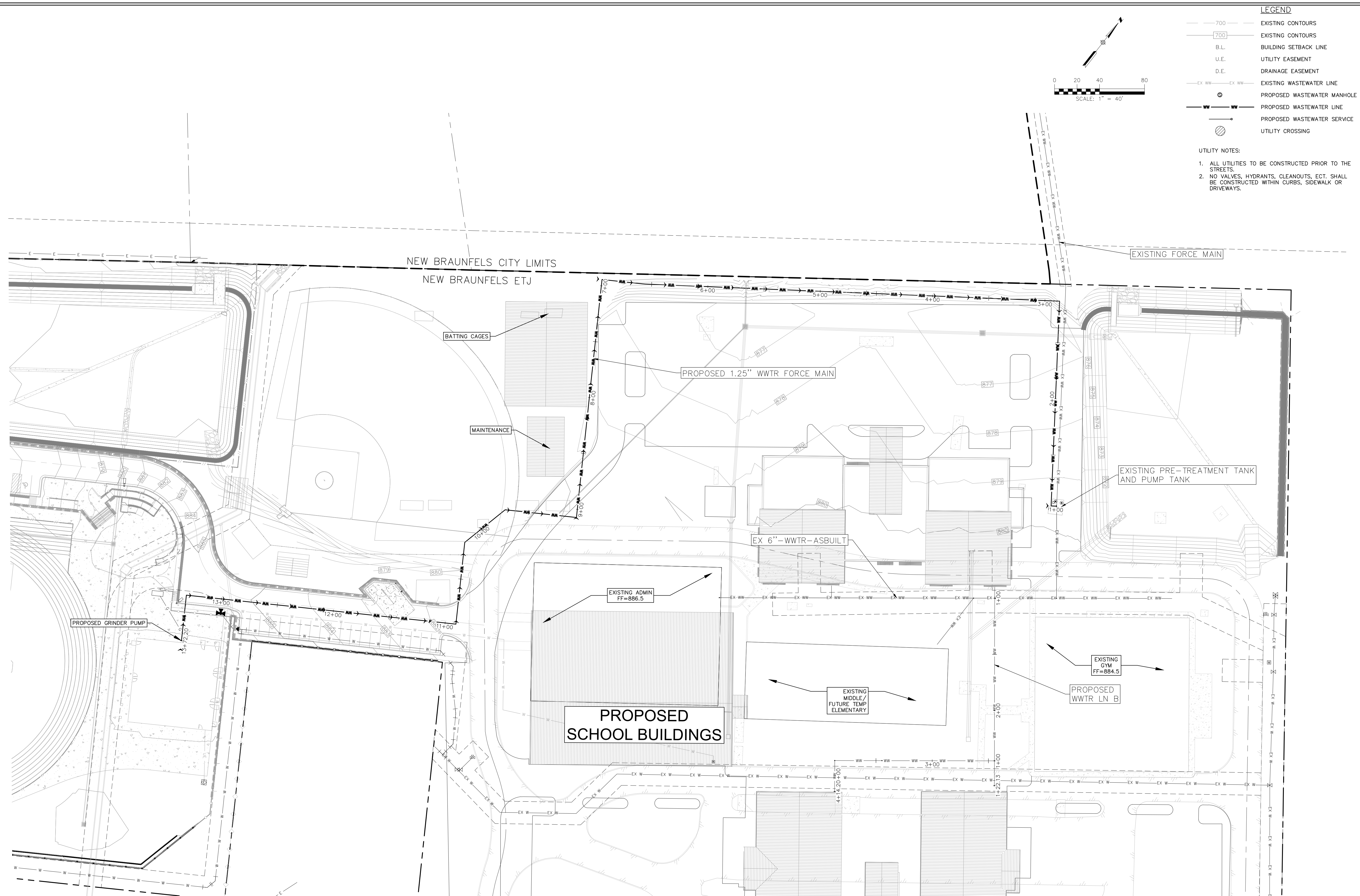
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
 DRAWN BY: CHD
 DESIGNED BY: CAT
 REVIEWED BY: JTS

HMT PROJECT NO.: 318.003

SHEET
C8.02

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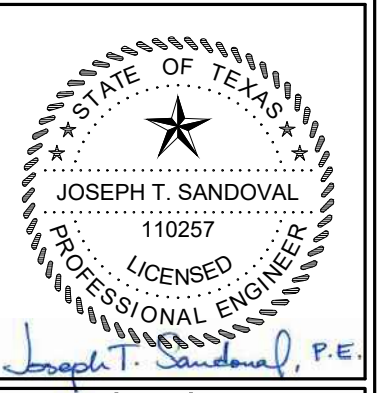


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 - WW --- PROPOSED WASTEWATER LINE
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 NEW BRAUNFELS, TX 78130
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HMT
 ENGINEERING & SURVEYING



03/21/2023

OVERALL WASTEWATER

NBCA EXPANSION WPAP/SCS
 NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
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SHEET
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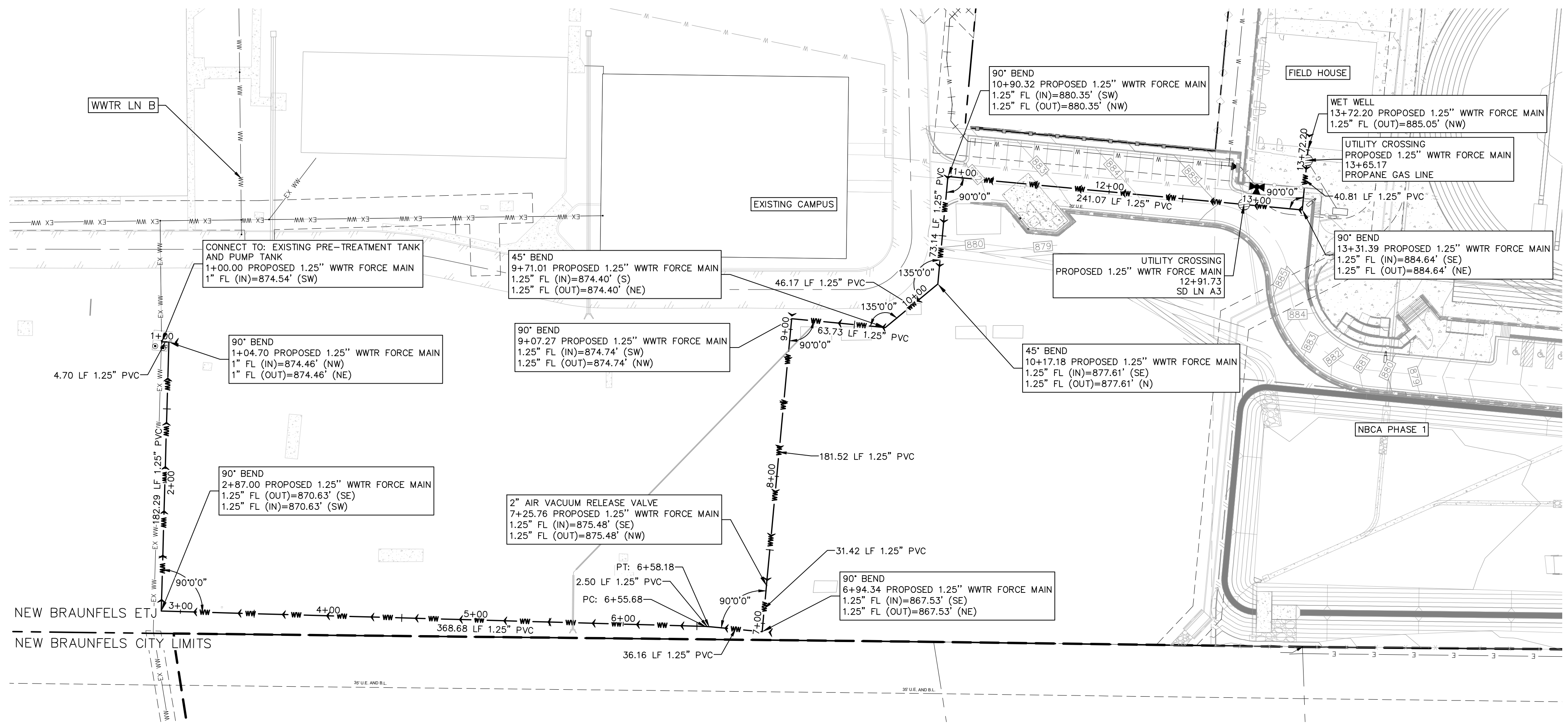
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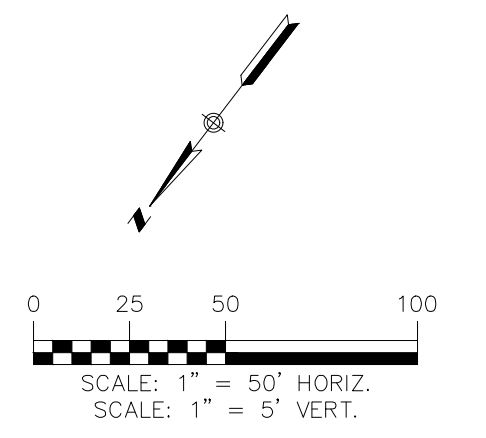
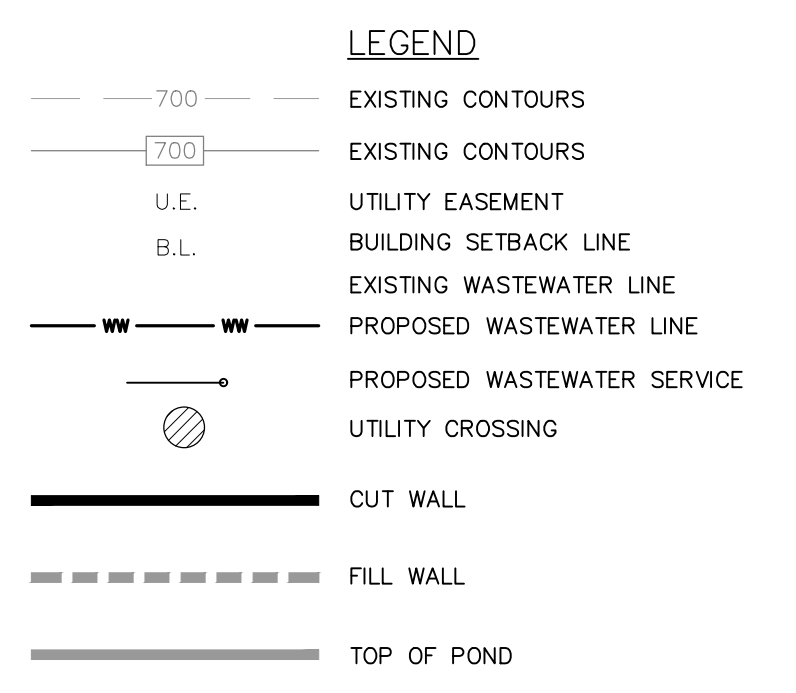
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Drawing Name: N:\Projects\318 - Expansion and Sports Fields\318.03_WWTR.dwg User: cimbic Mar 22, 2023 - 2:15pm



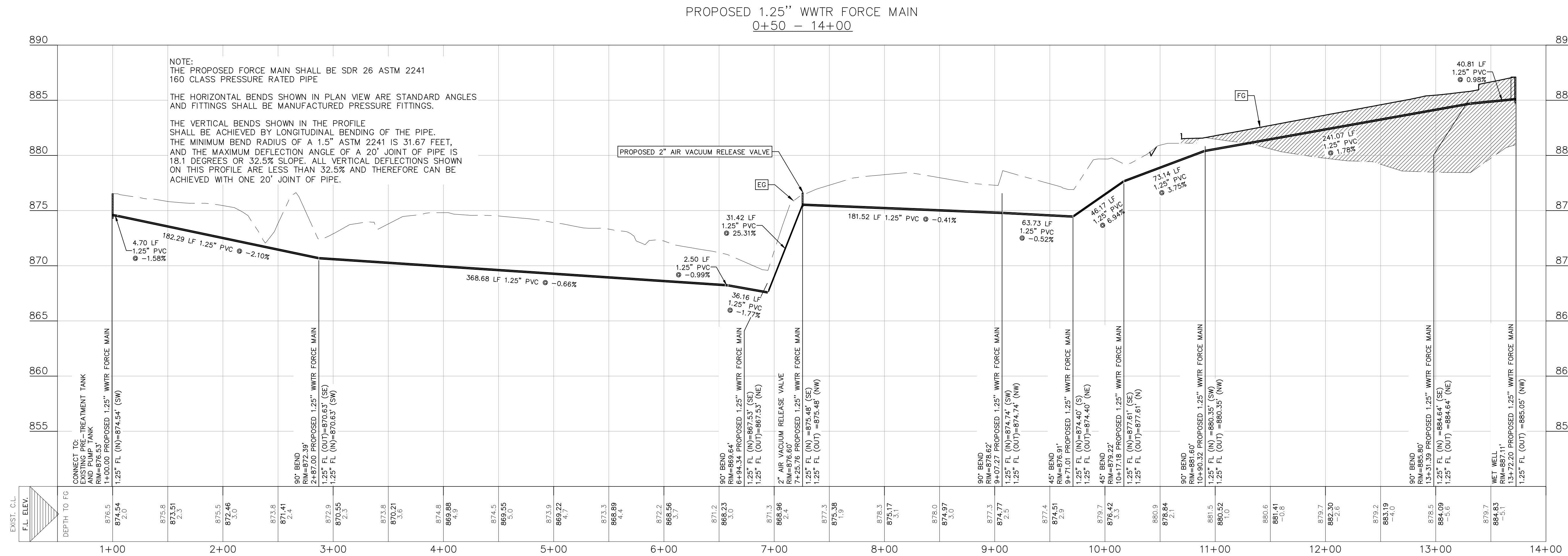
TCEQ GENERAL CONSTRUCTION NOTES, LIFT STATION AND FORCE MAIN:

- THIS LIFT STATION AND/OR FORCE MAIN MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) EDWARDS AQUIFER RULES, AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
- ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED LIFT STATION/FORCE MAIN (LSFM) SYSTEM APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF A LSFM SYSTEM APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
- A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- UPON COMPLETION OF ANY LIFT STATION EXCAVATION, A GEOLOGIST MUST CERTIFY THAT THE EXCAVATION HAS BEEN INSPECTED FOR THE PRESENCE OF SENSITIVE FEATURES. THE CERTIFICATION MUST BE SIGNED, SEALED AND DATED BY THE GEOLOGIST PREPARING THE CERTIFICATION. CERTIFICATION THAT THE EXCAVATION HAS BEEN INSPECTED MUST BE SUBMITTED TO THE APPROPRIATE REGIONAL OFFICE.
 - IF SENSITIVE FEATURE(S) ARE IDENTIFIED, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY AND MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO THE WATER QUALITY FROM THE LIFT STATION.
 - CONSTRUCTION MAY CONTINUE IF THE GEOLOGIST CERTIFIES THAT NO SENSITIVE FEATURES WERE PRESENT.
- IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERY. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING WITHIN TWO WORKING DAYS. THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURE INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.
- ALL FORCE MAIN LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.68. TESTING METHOD WILL BE:
 - A PRESSURE TEST MUST USE 50 POUNDS PER SQUARE INCH ABOVE THE NORMAL OPERATING PRESSURE OF A FORCE MAIN.
 - A TEMPORARY VALVE FOR PRESSURE TESTING MAY BE INSTALLED NEAR THE DISCHARGE POINT OF A FORCE MAIN AND REMOVED AFTER A TEST IS SUCCESSFULLY COMPLETED.
 - A PUMP ISOLATION VALVE MAY BE USED AS AN OPPOSITE TERMINATION POINT.
 - A TEST MUST INVOLVE FILLING A FORCE MAIN WITH WATER.
 - A PIPE MUST HOLD THE DESIGNATED TEST PRESSURE FOR A MINIMUM OF 4.0 HOURS.
 - THE LEAKAGE RATE MUST NOT EXCEED 10.0 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER DAY.



TCEQ-0591 (REV. 2-26-2016)

AUSTIN REGIONAL OFFICE 12100 PARK 35 CIRCLE, BUILDING A AUSTIN, TX 78753-1808 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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TRENCH EXCAVATION SAFETY PROTECTION
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS. PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

UTILITY TRENCH COMPACTION
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTION OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

UTILITY NOTES:

- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
- THIS SITE IS IN THE KOHLBERG PRESSURE ZONE ACCORDING TO NEW BRAUNFELS UTILITIES PRESSURE RECORDER LOCATIONS.
- CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
- POINT OF DELIVERY SHALL BE IN ACCORDANCE WITH NBU WATER AND WASTEWATER DESIGN CRITERIA MANUAL, SECTION 2.3.0.
- FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

STATE OF TEXAS
JOSEPH T. SANDOVAL
110257
LICENSED PROFESSIONAL ENGINEER

03/21/2023

**1.25" WASTEWATER LINE
PLAN AND PROFILE**
NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS

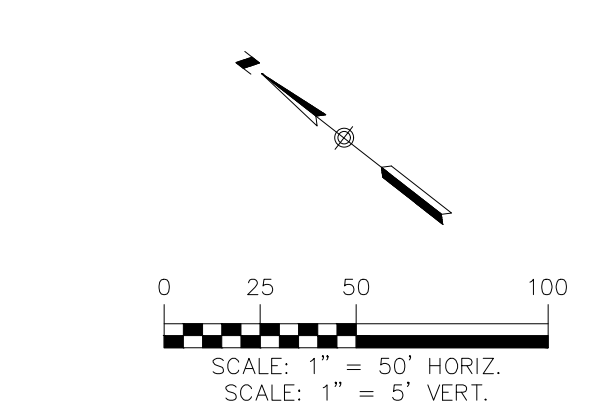
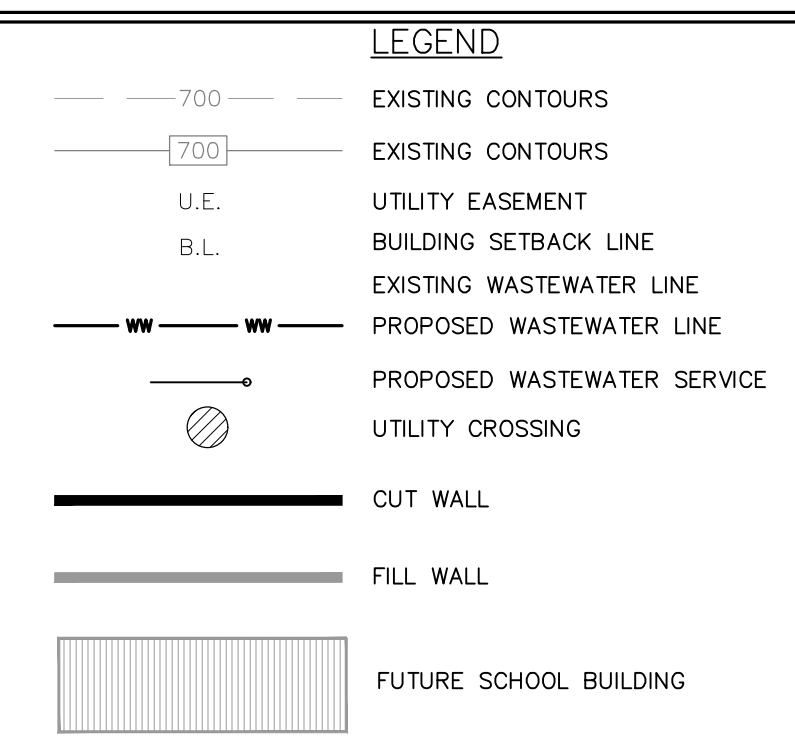
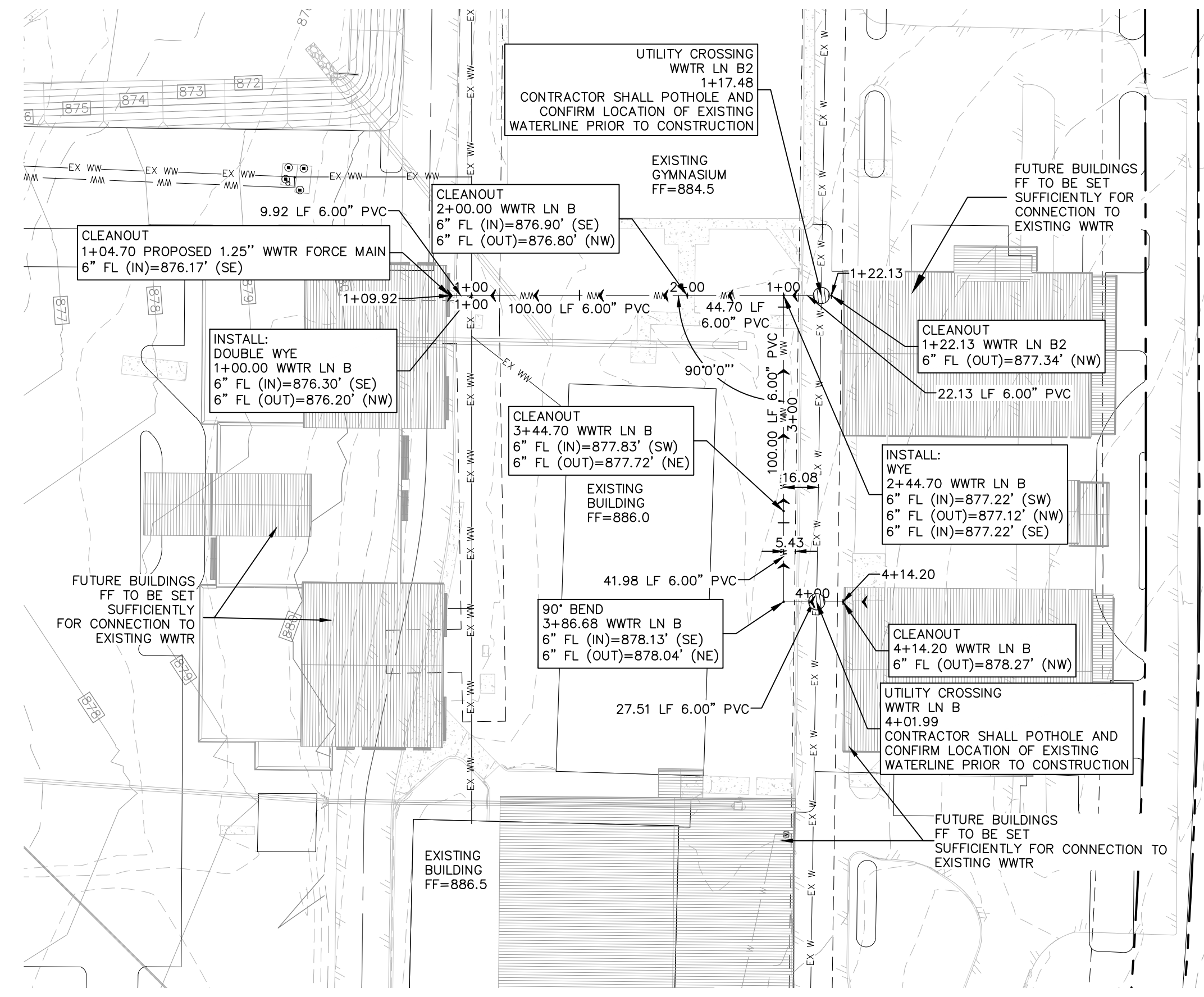
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
DRAWN BY: CHD
DESIGNED BY: CAT
REVIEWED BY: JTS

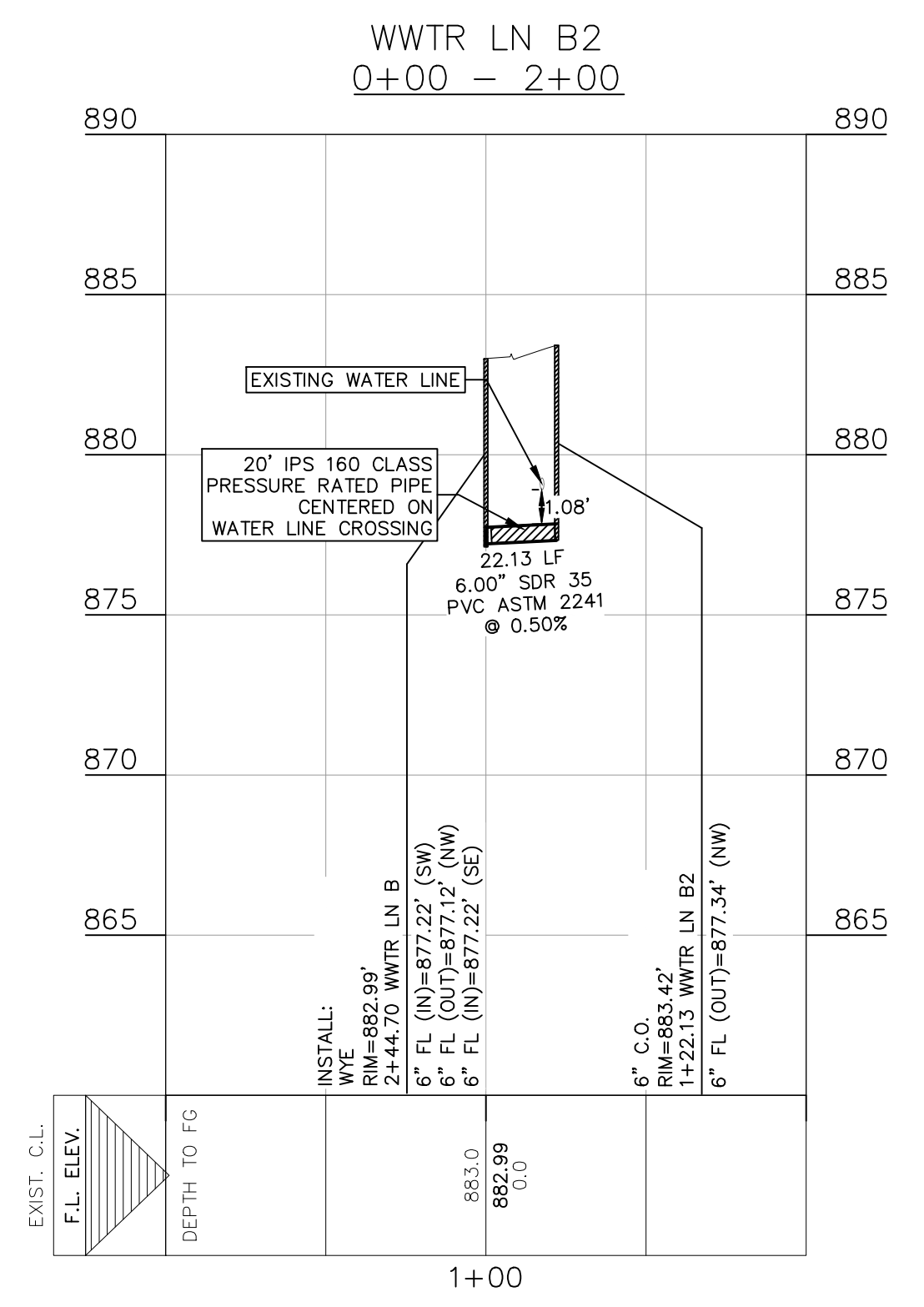
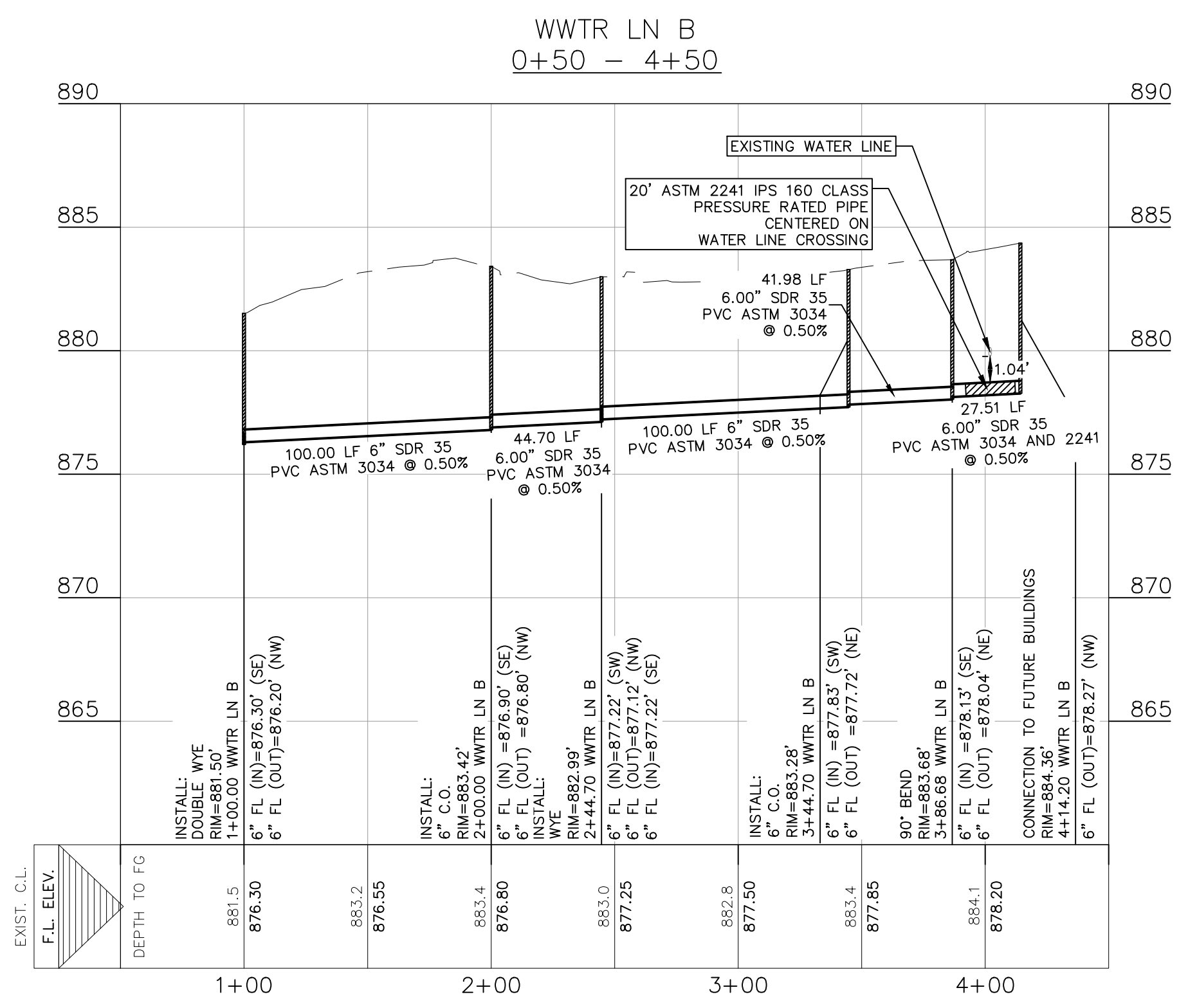
HMT PROJECT NO.: 318.003

**SHEET
C9.01**

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- UTILITY NOTES:**
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290 S. CASTELL AVE., STE. 100
 NEW BRAUNFELS, TX 78130
 TBPE FIRM F-10961
 TBPLS FIRM 1053600

HMT
 ENGINEERING & SURVEYING

STATE OF TEXAS
 JOSEPH T. SANDOVAL
 110257
 LICENSED PROFESSIONAL ENGINEER

03/21/2023

WASTEWATER LINE B PLAN AND PROFILE
 NBCA EXPANSION WPAP/SCS
 NEW BRAUNFELS, TEXAS

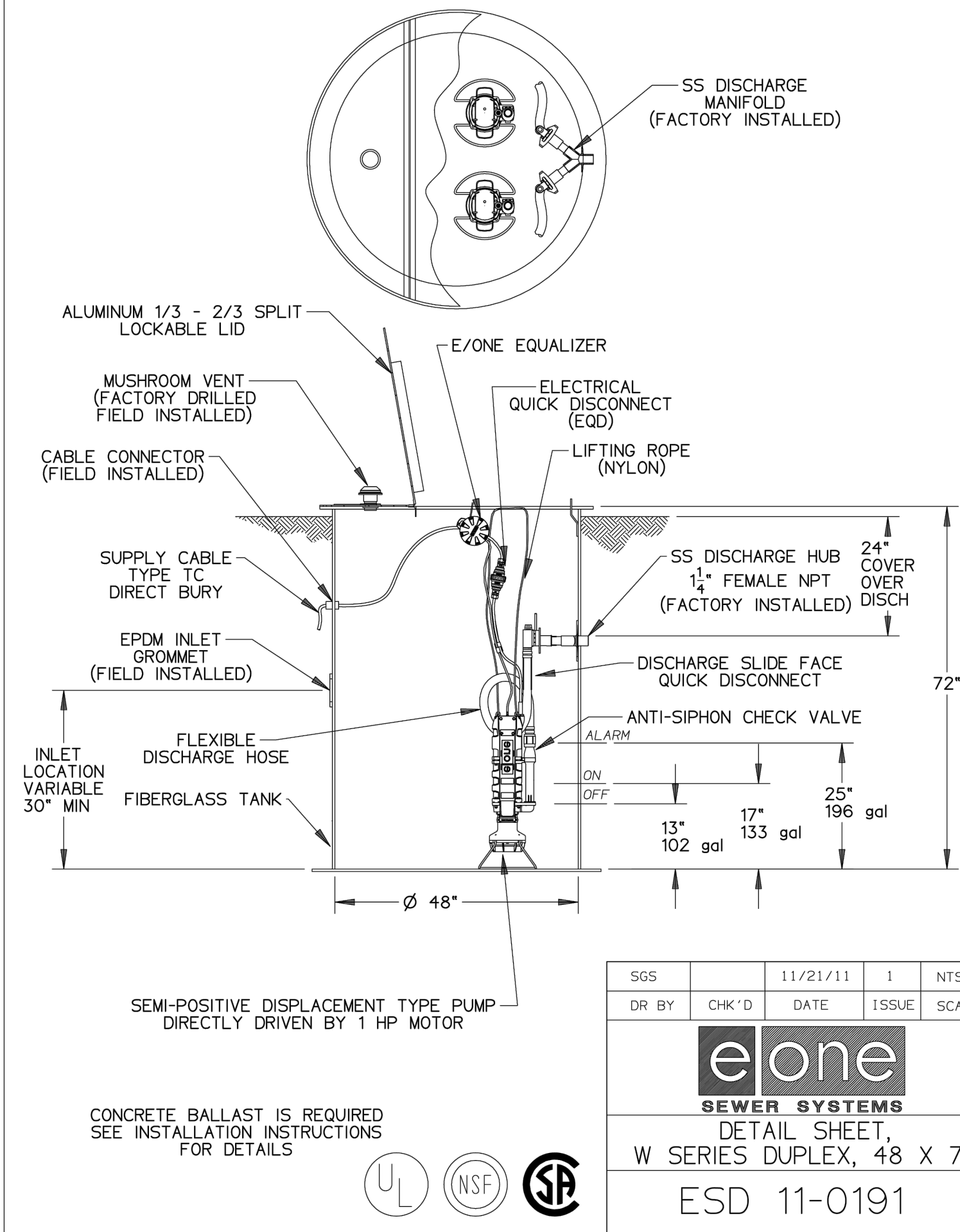
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
 DRAWN BY: CHD
 DESIGNED BY: CAT
 REVIEWED BY: JTS

HMT PROJECT NO.: 318.003

SHEET C9.02

STATION TO BE USED WITH
(1) MOD T260 DUPLEX PANEL



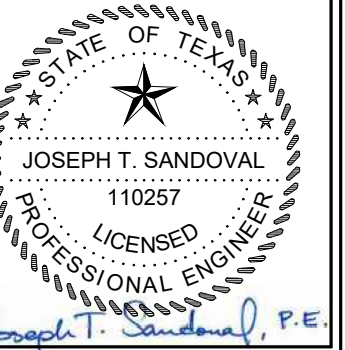
SGS		11/21/11	1	NTS
DR BY	CHK'D	DATE	ISSUE	SCALE
DETAIL SHEET, W SERIES DUPLEX, 48 X 72 ESD 11-0191				



CONCRETE BALLAST IS REQUIRED
SEE INSTALLATION INSTRUCTIONS
FOR DETAILS

SEMI-POSITIVE DISPLACEMENT TYPE PUMP
DIRECTLY DRIVEN BY 1 HP MOTOR

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600



03/21/2023

WASTEWATER DETAILS

NBCA EXPANSION WPAP/SCS
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: MARCH 2023
DRAWN BY: CHD
DESIGNED BY: CAT
REVIEWED BY: JTS
HMT PROJECT NO.: 318.003

SHEET
C9.03

PERMANENT STORMWATER SECTION
ATTACHMENT G
Inspection, Maintenance, Repair and Retrofit Plan

The contractor will be directed to inspect and maintain all permanent BMPs during construction. One year after construction is complete the permanent BMPs will be turned over to the New Braunfels Christian Academy. Any deficiency noted must be corrected immediately by the New Braunfels Christian Academy. The maintenance guidelines were pulled from the TCEQ Document “Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices” and its addendum sheet, the documents can be referenced for a more in-depth explanation of maintenance guidelines.

Maintenance and Inspection:

- (1) Specification of routine and non-routine maintenance activities to be performed;
 - a. Batch Detention Basins
 - i. Inspection- Inspect basin at least twice a year, once during wet weather to evaluate detention and drawdown time. The remaining inspections should occur between storms when the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.
 - ii. Mowing- Grass areas in and around basins must be mowed at least twice annually to limit vegetation height to 18 inches. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation.
 - iii. Debris and Litter Removal- Debris and litter should be removed during regular mowing operations and inspections. Attention should be paid to floating debris that can eventually clog the control device or riser. The outlet should be checked for possible clogging or obstruction and debris removed.
 - iv. Erosion- During each inspection, erosion areas on basin side-slopes and embankments must be identified and repaired, regraded or revegetated immediately.
 - v. Nuisance Control- Standing water or soggy conditions may occur in the basin. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weed, odors, algae, etc.).
 - vi. Structural Repairs Replacement- With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. The

various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

- vii. Sediment Removal- Remove sediment when the depth reaches 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 basin at least every 5 years.
- viii. Logic Controller- The Logic Controller should be inspected as part of the twice-yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. inspection.

(2) A schedule for maintenance activities;

- a. Inspection and maintenance will be held quarterly and after rainfall events of more than one inch

(3) The batch detention basin can be accessed by vehicle as they are directly adjacent to a paved roadway.

(4) Check Depth of Vegetation

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

(5) Removal of Debris and Trash

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

(6) Cut-off Valve

- a. The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24- hours and 72-hours). Count should be kept of number of turns to open and close the valve so that the valve can be reset to the starting position. Defects in the operation of the cut-off valve shall be corrected within 7 working days. A written record will be kept of inspection results and maintenance performed.

(7) Inlet Splash Pad

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

(8) Structural Integrity

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

(9) Discharge Pipe

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

(10) Detention Time

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

(11) Irrigation Areas

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

(12) For Pump Stations

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

Check the wet well for accumulation for trash, debris and silt. Trash and debris shall be removed and disposed of properly. Silt depth can be checked by probing the

bottom of the wet well with a stick or PVC pipe. Silt accumulations should be removed when silt collects to a depth of three (3) inches over the entire wet well bottom. Silt can be removed by vacuum pump or other methods.

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

(13) Irrigation System

a. The irrigation system, including pumps, should be inspected and tested (or observed while in operation) to assure proper operation at least 6 times annually. Two of these inspections should occur during or immediately following wet weather.

Any leaks, broken spray heads, or other malfunctions with the irrigation system should be repaired immediately. In particular, sprinkler heads must be checked to determine if they are broken, clogged, or not spraying properly. A written record will be kept of inspection results and the maintenance performed. All inspection and testing reports will be kept on site and accessible to inspectors.

(14) Visually Inspect Security Fencing for Damage or Breach

a. Check the basin maintenance access gates for proper operation. Damage to fencing or gates shall be repaired within 5 working days. A written record will be kept of inspection results and maintenance performed.

(15) Recordkeeping Procedures for Inspections, Maintenance, Repairs, and Retrofits

a. Written records shall be kept by the party responsible for maintenance or a designated representative.

b. Written records shall be retained for a minimum of five years.

(16) The New Braunfels Christian Academy will be in charge of the oversight and scheduling of inspections and maintenance. Nicholas Reeves of New Braunfels Christian Academy will sit on the Board of Directors for as long as New Braunfels Academy is named Declarant and will establish the inspection and maintenance plans for the Organization; and

(17) Inspection records will be maintained at the New Braunfels Christian Academy offices.

Joseph Sandorai, P.E.
Party Responsible for Maintenance

3/9/2023
Date

Authorized Agent for Owner.

PERMANENT STORMWATER SECTION
ATTACHMENT I
Measures for Minimizing Surface Stream Contamination

There is one type of proposed Permanent BMPs for the on-site stormwater for New Braunfels Academy. The BMPs include two batch detention basins. The permanent BMPs will be constructed to TCEQ standards and the design plans and details can be found on sheets C7.00 through C7.15 of the New Braunfels Academy Site Construction Plans.

PERMANENT POLLUTION ABATEMENT MEASURES MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES

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

It should also be noted that the timing and procedures presented herein are general guidelines, adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions but may not be altered without TCEQ approval.

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

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

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

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

I _____ Nicholas J. Reeves _____
Print Name

_____ Resisted Agent/ Head of School _____
Title - Owner/President/Other

of _____ New Braunfels Christian Academy _____
Corporation/Partnership/Entity Name

have authorized _____ Joseph Sandoval, P.E. _____
Print Name of Agent/Engineer

of _____ HMT Surveying & Engineering _____
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:

[Signature]
Applicant's Signature

4/20/22
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Nicholas Reeves 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 21 day of April, 2022



Michelle Lyn Leidy
NOTARY PUBLIC

Michelle Lyn Leidy
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: December 21, 2023

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: New Braunfels Christian Academy

Regulated Entity Location: 220 FM 1863 New Braunfels, Texas 78130

Name of Customer: New Braunfels Christian Academy

Contact Person: Nicholas J. Reeves Phone: (830) 629-1821

Customer Reference Number (if issued): CN _____

Regulated Entity Reference Number (if issued): RN 104634530

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

Type of Plan	Size	Fee Due
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	1,620 L.F.	\$ 810.00
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: Joseph Sandouf, P.E.
3/22/2023

Date: _____

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

<i>Project</i>	<i>Project Area in Acres</i>	<i>Fee</i>
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

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

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

Extension of Time Requests

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



TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<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 checked="" type="checkbox"/> Other Addendum to existing permit	
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 602851750		RN 104634530

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).			
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
New Braunfels Christian Academy, Inc.			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0054336901	17421552187	74-2155218	
11. Type of Customer:	<input checked="" 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 type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner		<input type="checkbox"/> Operator	
<input type="checkbox"/> Occupational Licensee		<input checked="" type="checkbox"/> Owner & Operator	
<input type="checkbox"/> Responsible Party		<input type="checkbox"/> Voluntary Cleanup Applicant	
<input type="checkbox"/> Other:			
15. Mailing Address:	220 FM 1863		
	City	New Braunfels	State TX ZIP 78130 ZIP + 4 3700
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(830) 629-1821		() -	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information	
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
New Braunfels Christian Academy	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	220 FM 1863						
	City	New Braunfels	State	TX	ZIP	78132	ZIP + 4
24. County	Comal						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	N/A						
26. Nearest City					State	Nearest ZIP Code	
27. Latitude (N) In Decimal:				28. Longitude (W) In Decimal:			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	43	7.38	98	10	59.71		
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)			
8211		611110					
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>							
School							
34. Mailing Address:	220 F.M. 1863						
	City	New Braunfels	State	TX	ZIP	78132	ZIP + 4
35. E-Mail Address:							
36. Telephone Number		37. Extension or Code			38. Fax Number <i>(if applicable)</i>		
() -					() -		

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 checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
		104634530		
<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"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Joseph Sandoval, P.E.	41. Title:	Authorized Agent/Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(830) 625-8555		() -	Josephs@hmtnb.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	HMT Engineering & Surveying	Job Title:	Project Manager
Name <i>(In Print)</i> :	Joseph Sandoval, P.E.	Phone:	(830) 625- 8555

Signature:	Joseph Sandona, P.E.	Date:	3/3/2023
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